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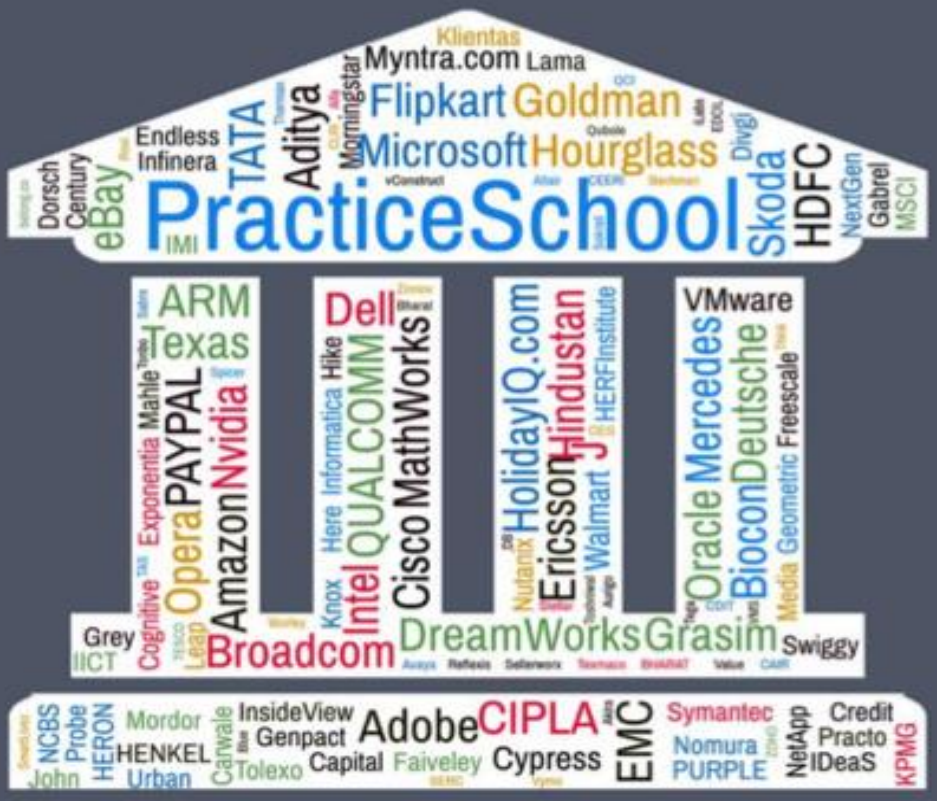
# PS-II

BIRLA INSTITUTE OF TECHNOLOGY AND SCIENCE

# CHRONICLES




SEMESTER I 2018-19

# From the Desk of the Editor

It is my great pleasure to bring forth the 6th edition of the PS Chronicles.

This edition features over 600 articles from mentors, students and PS faculty sharing their experience from the I Semester of 2018-2019. This huge increase in numbers is a testimony to the usefulness of the PS- II Chronicles and its increasing popularity.

The primary aim of the PS Chronicles is to record the overall PS-II Experience of all the stakeholders – the students, the PS Faculty and the Industry Mentors.

The objectives of this Chronicle are manifold

- Prospective PS-II students can get to know about the experience of their seniors, currently at PS – thereby increasing awareness in the student community
- Increasing awareness among faculty about the nature of work happening in PS
- Bring back the experience gained in PS into academics- making the curriculum more industry relevant.

I would like to thank everyone who has participated in this activity- the students, the industry mentors and the faculty for sharing their experience. Thanks for making the 6th edition an even more bigger and better experience.

I would also like to thank my editorial team for a task well done. I would also extend my thanks to Mr. Om Prakash Saini of the Practice School Division, of BITS, Pilani – Pilani Campus for his help in bringing out the editions of PS II Chronicles.

I would be happy to receive any feedback regarding the Chronicles. Please feel free to email me at psd@pilani.bits-pilani.ac.in or at anil.gaikwad@pilani.bits-pilani.ac.in

**Anil Gaikwad**

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Name : Tanmay Kakati (2015A8PS0401G) ..... 247
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Name : S.P. Vimal Sir ..... 271
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Name : Rohit Sohni (2015A7PS0135P) ..... 271
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Name : Shivam Khetan (2015A1PS0688P) ..... 272
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Name : Sajal Bansal (2014B1A10657H) ..... 275
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Name : Ritu Arora ..... 276
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Name : Paras Gupta (2015A1PS0502P) ..... 276
Name : Aditya Malhotra (2015A8PS0460G) ..... 279
Name : Deepesh Sharma (2015A3PS0218P) ..... 280
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Name : Chandra Shekar RK ..... 281
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Name : AMAN CHHAJED (2014B4A70608G) ..... 281
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Name : AMARTYA SHARMA (2014B2A30597G) ..... 283
Name : Madhu Adav M J (2014A3A70217G) ..... 284
Name : Nitish Kulshrestha (2015A8PS0275G) ..... 287
Name : SAGAR TRIPATHI (2015A3PS0294H) ..... 288
Name : Ankita Aggarwal (2015AAPS0192H) ..... 288
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Name : Abhilash Kolluri (2014B5AA0765H) ..... 289
Name : Shubham Malpani (2014B2A80778H) ..... 290
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Name : Vijayalakshmi Anand ..... 291

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**Name : Yogesh Khemka (2014B5A30774H)** ..... **292**
**Name : Saylee Kanadje (2014B3A30772P)** ..... **292**
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**Name : Mr. Vinay Belde** ..... **293**
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**Name : Karan Mantri (2015A3PS0141G)** ..... **293**
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**Name : Mrs. Vijayalakshmi Anand** ..... **294**
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**Name : Pranay Singh Baghel (2015A3PS0219P)** ..... **294**
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**Name : Sir Brajabandhu Mishra** ..... **295**
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**Name : Poojan Patel (2015A3PS0343H)** ..... **295**
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**Name: Dhiraj Kumar** ..... **297**
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**Name : Mr. Brajbandhu Mishra** ..... **297**
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**Name : Utkarsh Jain (2014B5A80864P)** ..... **297**
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**Name : Ashish Narang** ..... **303**
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**Name : INDRANIL BHAUMIK (2014B4A70924H)** ..... **305**
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**Name : Radhika Bulla** ..... **311**
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**Name : Ranajoy Roy** ..... **311**
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**Name : Aditya Bhatia (2015A3PS0237G)** ..... **314**
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Name : Bharat Soni (2015A2PS0781P) ..... 339
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Name : Harsh Bansal (2015A7PS0075P) ..... 371
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**Name : Manu Priyadarshi (2015A8PS0454G)** ..... 377
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**Name : Sonika Rathi** ..... 394
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**Name : Mulay Manas Yogesh (2015A7PS0042G)** ..... 395
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**Name : Mahesh Kumar Hamirwasia** ..... 397
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**Name : MOLUGURI AKHIL (2015A2PS0799P)** ..... 397
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**Name : Satya Sudhakar** ..... 416
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**Name : Ria Doshi (2015A3PS0283G)** ..... 416
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**Name : Prof S. Sindhu** ..... 422
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**Name : Shreyash Anand (2014B4A10803P)** ..... 422
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**Name : Ashwin Shirbhate (2014B3AB0509P)** ..... 423
**Name : Yash Jain (2015A1PS0741H )** ..... 424
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**Name : Prof Krishnamurthy Bindumadhavan** ..... 427
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**Name : VISHAL SURANA (2015A5PS093P)** ..... 427
**PS-II Station: UBS BUSINESS SOLUTIONS Mumbai** ..... 428
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**Name : Pallavi Trivedi (2015A1PS0721P)** ..... 428
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**Faculty** ..... 429
**Name : Mrs. Preeti NG** ..... 429
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**Name : Vishal Lavania** ..... 429
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**Name : Sandeep Kayastha** ..... 430
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**Name : Srinivasan G (2015A4PS0283P)** ..... 431
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**Name : Swarna Chaudhary** ..... 432
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**Name : Machunuru Venkata Subbaiah (2015A7PS0029H)** ..... 432
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**Name : SINDHU S NAIR** ..... 433
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**Name : SINDHU DAVULURI (2015A8PS0509G)** ..... 434

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Name : Dr. Padma Murali ..... 439
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Name : Athul Prakash (2015A3PS0171P) ..... 439
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Name : Dr. Sindhu S ..... 440
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Name : GEETHKRISHNA R (2014B5A80587G) ..... 440
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Name : ABHIN MR (2015A3PS0276G) ..... 444
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Name : Amol Joshi (2013A1PS0487G) ..... 446
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Name : Pawan Kumar Potdar ..... 447
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Name : Rachit Agrawal (2014B1A30373P) ..... 447
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Name : Chandra Shekar RK ..... 449
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Name : Anjani Srikanth Koka ..... 450
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Name : Vikram Singh Chandrawat (2015A2PS0852P) ..... 450
Name : Arghae Singh (2015A4PS0351P) ..... 451
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Name : Vinay Belde ..... 453
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Name : Saksham Fotedar (2014B3A80659G) ..... 453
PS-II Station: WorleyParsons, Mumbai ..... 453

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**Name : Pavan Potdar** ..... **454**
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**Name : Vaibhav Sanghi (2014B5A80634G)** ..... **454**
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**Name : Vinay Belde** ..... **455**
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**Name : Siddhant Thakuria (2014B1A30466P)** ..... **455**
**PS-II Station: Zinnov Management and Consulting, Bangalore** ..... **456**
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**Name : Anapoorna Gopalan** ..... **456**
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**Name : Srishti (2015A5PS0868H)** ..... **456**
**Name : MOHINI PANDEY (2015D2TS0991P)** ..... **457**
**Name : Rashi Singhal (2015A5PS0940P)** ..... **458**
**PS-II Station: Zinnov Management Consultancy Pvt. Ltd. - Gurgaon** ..... **461**
**Faculty** ..... **461**
**Name : Sandeep Kayastha** ..... **461**
**Student** ..... **461**
**Name : ANKUR JAIN (2015A2PS0450P)** ..... **461**

# Domain: Core Engineering

## *PS-II Station: Acko*

### Faculty

**Name : Krishnamurthy Bindumadhanvan**

### Student

**Name : Aditya (2015A4PS0980H)**

**Student Write-up**

**Short Summary of work done during PS-II:** The objective of our project is to conduct various types of analysis on the several departments present at ACKO. These departments include marketing where we can analyze which models are attracting the most premium customers and planning the correct marketing strategy to attract more customers. Another department is claims, where we can figure out which aspect of claims is taking the most time, and try to reduce it to speed up other parts of the process. Claims represent the most important part of an insurance business, as it is essential look on a company's customer satisfaction rate. For any service company, the customer satisfaction is the most key aspect.

**Tool used (Development tools - H/w, S/w):** SQL, Tableau, Java

**Objectives of the project:** Improve Productivity

**Major Learning Outcomes:** Data Analytics

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## *PS-II Station: Aditya Birla - Data and Analytics*

### Faculty

**Name: S.P. Vimal**

# Student

## Name: Anchit Bansal (2015A1PS0703P)

**Student Write-up**

**Short Summary of work done during PS-II:** Work done included data curation, text analytics and research work.

**Tool used (Development tools - H/w, S/w):** Jupyter Notebook- Python, Microsoft Excel

**Objectives of the project:** To help the department and hence the Aditya Birla Group to be able to leverage data to drive business decisions.

**Major Learning Outcomes:** Learned about working process in corporate sector, working in teams

**Academic courses relevant to the project:** Machine Learning

## Name: M Rohith Reddy (2015A7PS0065P)

**Student Write-up**

**Short Summary of work done during PS-II:** Worked on app development, web development and Video analytics

**Tool used (Development tools - H/w, S/w):** Python, Flask, HTML, CSS JavaScript, PostgreSQL, Amazon Web services, AJAX, Node.js, Keras, TensorFlow

**Major Learning Outcome:** Python, Flask, HTML, CSS JavaScript, PostgreSQL, Amazon Web services, AJAX, Node.js, Keras, TensorFlow

**Academic courses relevant to the project :** NNFL Artificial Intelligence computer Networks data Mining

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# *PS-II Station: Aditya Birla Insulators, Halol*

## Faculty

### Name : Srikanta Routroy

## Student

### Name : Shashank Aggarwal (2015A4PS0432H)

**Student Write-up**

**Short Summary of work done during PS-II :** Title: Agitator design and ball mill standardization. Work involves analyzing the trend in particle size distribution in the ceramic slurry and how ball mill grinding time and agitator mixing time affects it. Agitator design was to be made and mixing simulated using simulation software.

**Tool used (Development tools - H/w, S/w):** Minitab 17 and MS Excel 19 for data analysis

**Objectives of the project:** Standardize the design of an agitator and study how ball milling time affects ceramic slurry

**Major Learning Outcomes:** Got a major insight into CFD

**Brief Description of working environment, expectations from the company:** The working environment is good and demanding, disciplined and focused work is expected.

**Academic courses relevant to the project:** Fluid Dynamics, Mechanics of Solids, FEA, Engineering Mathematics

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# *PS-II Station: Aditya Birla Science & Technology Company Private Limited, Mumbai*

## Faculty

### Name : Mr. Santosh Khandgave

# Student

## Name : Arpit Mathur (2014B3A10553G)

**Student Write-up**

**Short Summary of work done during PS-II :** To develop a device for the measurement of lustre of dope dyed viscose fibers that is capable of differentiating between dope dyed and post dyed viscose fibers/fabrics.

**Tool used (Development tools - H/w, S/w):** Hardware, Concept of Optics, LED Light, Curved Lenses, DSLR Camera

**Major Learning Outcomes:** Viscose fiber and different processes involved in making of it, i.e. Viscose Process and how Optics and its arrangement can be used to differentiate lustre property among different samples of fibers.

**Brief Description of working environment, expectations from the company:** Working environment was very good. Mentor allotted for the project was very supportive and experienced in his respective field. Got to learn a lot of things from him. Each & every person in the team was very helpful. Since it's a Research & Development center, working lifestyle is little bit slow. One major feedback, for interns, ABSTCPL should provide the stipend on time.

**Academic courses relevant to the project:** Polymer Technology

## Name: Abhijeet Vichare (2015A1PS0736H)

**Student Write-up**

**Short Summary of work done during PS-II** The work was based on building a model that would predict the daily current efficiency of an aluminum smelter which would be used to integrate in the future in the plants located all across the country.

**Tool used (Development tools - H/w, S/w):** Python(Pandas, sklearn, numpy), MS Excel(VBA)

**Objectives of the project:** Predictive Modeling

**Major Learning Outcomes:** Hands on Machine Learning

**Details of Papers/patents:** Working on releasing a paper

**Brief Description of working environment, expectations from the company :** The environment was very relaxed, they provide deadlines based on your limitations. The mentors and the managers are very helpful with the project. They try their best to accommodate you into the office; the travel to the office and food is provided at the office canteen.

**Academic courses relevant to the project:** Minor in Data Science

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## *PS-II Station: Adobe Inc, Bangalore*

## Faculty

### Name : Vishwanathan Hariharan

## Student

### Name : Shrey Goyal (2015A7PS0105P)

**Student Write-up**

**Short Summary of work done during PS-II :** The project involved development of a framework for rendering glTF assets, a file format for 3D objects, in Augmented Reality. While Android already has support for glTF assets, Apple does not. Hence the main focus was to develop this framework for Apple Devices.

**Tool used (Development tools - H/w, S/w):** Objective-C, SceneKit, ARKit, Java

**Objectives of the project:** Rendering glTF assets in Augmented Reality

**Major Learning Outcomes:** Product Development basics, How industry standard products are made, App development, Computer Graphics, OOP implementation

**Brief Description of working environment, expectations from the company:** The working environment was good, with all the employees very helpful. There is no fixed working hours, but the company expects everyone to give their maximum effort.

**Academic courses relevant to the project:** OOP, DSA

## Name: Gurram prathyusha (2015A7PS0041H)

**Student Write-up**

**Short Summary of work done during PS-II:** Integration of a web service with Adobe software and explored a couple of existing projects in GitHub

**Tool used (Development tools - H/w, S/w):** Adobe Animate-sw

**Objectives of the project:** Experimented if existing projects efficiency can be improved and integration of that with Adobe animate software

**Major Learning Outcomes:** Explored two new ml frameworks(caffe, pytorch) and about Animate software

**Brief Description of working environment, expectations from the company :** Friendly and professional at the same time. I got enough support from mentors and team members

**Academic courses relevant to the project:** Machine Learning, Networks

## Name : Vidit Bhat (2015A7PS0098P)

**Student Write-up**

**Short Summary of work done during PS-II :** Adobe Creative Cloud is a set of applications and services from Adobe Systems that gives subscribers access to a collection of software used for graphic design, video editing, web development, photography, along with a set of mobile applications and also some optional cloud services. The Adobe Creative Cloud desktop application keeps all the assets in sync. Any additions, modifications, or deletions are reflected on all connected computers and devices. For example, if you upload an .ai asset using the Your Work section of Creative Cloud, it is automatically downloaded on all connected computers. Currently, when an asset is modified either on a local or a remote server, the client ends up uploading/downloading the whole file again. This is because there is no way to determine the delta changes between the updated file and existing file. To avoid this, both client and server should determine delta changes. There are many algorithms, which can determine the delta changes, out of which RSync is most popular.

**Tool used (Development tools - H/w, S/w):** Intellij, VMware, Postman, AWS

**Objectives of the project:** To optimize upload and download flow in the existing product

**Major Learning Outcomes:** AWS, Git, API designing, OOP

**Academic courses relevant to the project:** NA

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## *PS-II Station: Adobe, Noida*

## Faculty

### Name : Dr. Ritu Arora

## Student

### Name : Aman Gupta (2014B2A70358P)

**Student Write-up**

**Short Summary of work done during PS-II:** My work revolved around iOS app development. My work was primarily in Objective-C language. I developed UI for different image editing features of the product. Later, I was given work on redesign of code architecture, which involved knowledge of design patterns.

**Tool used (Development tools - H/w, S/w):** Xcode, Objective C

**Objectives of the project:** iOS App Development

**Major Learning Outcomes:** Object Oriented Programming, Design Patterns

**Academic courses relevant to the project:** Object Oriented Programming

### Name: M Shreenath (2015A7PS0065G)

**Student Write-up**

**Short Summary of work done during PS-II:** I was assigned to a different team than the other interns and was the only intern in my team for the semester. My work

was in the field of Reinforcement Learning mainly. I had to help develop RL algorithms for one of their marketing products. It was a very good learning experience. I learnt to read many papers and implement them. I was given as much resource as I wanted to do my necessary work.

**Tool used (Development tools - H/w, S/w):** TensorFlow

**Objectives of the project:** Create Reinforcement Learning models for campaigning strategies

**Major Learning Outcomes:** Learnt Tensor flow, Learnt latest state of the art RL algorithms, Learnt about systems in terms of constraints.

**Brief Description of working environment, expectations from the company:** Great working environment, good work life balance, very friendly and helpful team, direct communication with manager, Office had all facilities which could be used for free, flexible timings.

**Academic courses relevant to the project:** Artificial Intelligence, Machine Learning, Neural Networks

### Name: Dhruv Toshniwal (2015A7PS0177H)

**Student Write-up**

**Short Summary of work done during PS-II:** Developing features on collage side of Photoshop Express iOS

**Tool used (Development tools - H/w, S/w):** XCode, iPad, iPhone, SourceTree

**Objectives of the project:** Deliver features in a fast paced environment

**Major Learning Outcomes:** Design and Development of Mobile Applications

**Academic courses relevant to the project:** Software Engineering, Human Computer Interaction

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## *PS-II Station: Amazon Development Centre, Bangalore*

## Faculty

## Name: Vishwanathan Hariharan

# Student

## Name: K E SUBHAS CHANDRA (2014B3A70608H)

### Student Write-up

**Short Summary of work done during PS-II :** Amazon is a company that has a huge e-commerce business in India as well as rest of the world. So, there will be a lot of things that the SDEs have to take care. The Operational Excellence has a big part for the company to function properly. Operational Excellence or OE as it is called sometimes, is a commitment to engineer things right and make sure they run well. If we are good at OE we get to spend the bulk of our time innovating and building new capability for our customers. The reference to right things is a series of practices that result in properly running systems, a balanced workload for you and your team, and most importantly a great customer experience. My work is mainly on Metrics and Alarms.

**Tool used (Development tools - H/w, S/w):** Java, iGraph

**Objectives of the project:** 1.Publishing metrics for handle Type (PSP or Bank) - Whenever we get issues or exception counts more due to timeouts, we do not have a way to find out which PSP or bank is down and we need to look into logs for the same. Instead, we can publish metrics for the handle Type in such cases. This also helps us to analyze which PSP is behaving good or bad and their success rate, etc. 2.Graphical view or Dashboard - This helps us to visualize the executions easily and find exceptions/input/output/plugin behavior, etc. and see if there is any useful information for us. 3.Once we achieve the above 2 points, we can see how this can be fed into all existing timeout exceptions/failures ticket/alarms, So, that the person on-call does not need to look into dashboard separately to find out which handle is down. 4. Create Sonar templates.

**Major Learning Outcomes:** The first learning is understanding how UPI payments work and the internals of it. It is very fascinating to learn about it as it is going to be a huge deal in India in coming years. I also learned how to create metrics and create a dashboard new page and make them visible in the page. Then I also learnt how to add alarms and create monitors for them so that we can use them to cut a ticket or automatically send a mail to the respective authority to check the issue. Learnt how to analyze properly, like, what are the things I have to take care before changing the logic and structure of the ticketing system.

**Academic courses relevant to the project:** OOPs , DSA , DAA

## Name: Harika Prasad (2014B3A70705H)

### Student Write-up

**Short Summary of work done during PS-II:** My project on Generation of Reports included producing reports which analyze the performance of Amazon's new payment method, PayCode. Since PayCode is a payment method that caters to a new customer segment, which depends on their local currency as a means of payment, it is important for the business, accounting teams to capture and understand the performance of this payment method in the market. Hence, it is important to generate reports that capture the details of the performance of this payment method.

The Simple Issue Router is a tool internal to Amazon that is meant to route the issue tickets allotted to Payment Services, to different teams in Payment Services, depending on the priority of the issue and the core of the issue.

**Tool used (Development tools - H/w, S/w):** Software: Java

**Objectives of the project:** PayCode is a new payment method as a part of Payment Services and aims to serve 87.1% of the customer segment that are unable to shop on the Amazon website due to unavailability of a conventional cash-based payment method. Therefore, in order to serve this customer base, these reports are required.

**Major Learning Outcomes:** • AWS services like DynamoDB, Simple Timer Service, Simple Queue Service, Simple Notification Queue.
• Amazon Coding Standards
• Dependency injection and Guice framework
• Testing and Mocks

**Brief Description of working environment, expectations from the company :** The company expects its interns to deliver on time and do excessive research on their own. This company believes in high standards and there fore cannot compromise with quality.

**Academic courses relevant to the project:** DBMS, OOPS, DSA

## Name: Sai Sri Chandrika Kota (2014B3A70573H)

### Student Write-up

**Short Summary of work done during PS-II :** Doing internship at Amazon is a great learning experience not only in terms of software domain aspects but also

management, team work and coordinating with multiple teams. I was part of Your Memberships & Subscriptions team, which maintains a common platform where all the subscriptions of a customer can be managed. I got to work mostly in the backend web development. I worked with REST services, APIs and the development is mostly done in java. The complexity and velocity of the work increases with time during the span of internship, which challenges you to move out of your comfort zone. My team, especially my mentor was very helpful and guided me when I was facing any issues. Overall it is a good place for someone who is curious to learn.

**Tool used (Development tools - H/w, S/w):** Java, Spring MVC, Junit, JS, JSP

**Objectives of the project:** Multi factor authentication support for a customer via your memberships and subscriptions platform

**Major Learning Outcomes:** Exposure to spring MVC, REST services

**Academic courses relevant to the project:** None

## Name: Himanshu Singhvi (2014B2A70716G)

### Student Write-up

**Short Summary of work done during PS-II :** The first task was related to automate certain jobs which were done manually before. Second task was to write spark jobs for generating IP metrics related to sponsored products and display ads. Third task was to build a UI for querying the IP metrics, which included frontend and backend development.

**Tool used (Development tools - H/w, S/w):** Scala, AngularJS, NodeJS, AWS services (Athena, S3, Lambda).

**Objectives of the project:** In Traffic Quality team, there is a use case where we need to monitor the performance of an IP/IP Range. Merchant escalation is one of the use cases. Today the team monitor IP specific performance by doing manual analysis, which requires writing multiple scripts. We want to automate this process wherein we can see the IP/IP Range performance on the user interface. In order to monitor IP historical performance on UI, IP data warehouse is built wherein IP aggregated data on daily basis will be kept. This IP data can be further used in building the guardrails checks for addition/removal of an IP/IP Range in SNL. IP Aggregator jobs were written (for both Display Ads & SSPA) for 1Day and 7Day conversion attribution, which will generate aggregated key metrics for each IP and store data into the warehouse. This IP data can be used in UI to monitor the historical behavior of an IP/IP Range.

**Major Learning Outcomes:** Languages: JS, Scala
Frameworks: NodeJS, AngularJS.

AWS Services: S3, Athena, Lambda and building chrome extension.

## Name: Ashutosh Upreti (2014B4A70784G)

### Student Write-up

**Tool used (Development tools - H/w, S/w):** Hardware: MacBook pro i7
Software: AWS, Dependency injection frameworks, Java, Python

**Objectives of the project:** Enhancements in notification system

**Major Learning Outcomes:** Payment platform architecture, Design patterns, SOLID Principles, DI frameworks, AWS, Agile practices, Scalability, Improvement in documentation and communication skills

**Academic courses relevant to the project:** Object oriented programming, Software Engineering, Software Development for Portable Devices, Data structures and Algorithms, Design and Analysis of Algorithms

## Name : Tripuramallu DSK Sarath (2014B3A70576H)

### Student Write-up

**Short Summary of work done during PS-II :** As part of my internship, I was given multiple tasks related to the problems associated with the services that my team owns. Most of them involved the root causing the issue and providing a fix for the same. As part of this process, I had to quickly familiarize myself with the frameworks used as well as the actual business logic that went behind the implementations, as there wasn't much documentation associated with it. I was also given the opportunity to develop some new features to the existing systems which involved collaborative efforts in coming up with the design, then implementing it from scratch and finally testing the changes.

**Tool used (Development tools - H/w, S/w):** Java, Spring MVC framework, JSP, JavaScript, Hibernate ORM, PostgreSQL, git, Amazon internal tools (build, deployment, dependency management).

**Objectives of the project:** To provide support to FaaSTInvoiceService to generate multiple e-waybills associated with an AmazonNow order's shipment.

**Major Learning Outcomes:** 1. Agile principles:
a. Having daily stand-ups where one gives an update of their progress/ blockers.
b. Having sprints planning where we have a dedicated time setup to plan the activities and tasks to be done.
2. Design and code reviews: As part of the development stages, a design of the solution is first prepared and reviewed by the senior SDEs in the team. Then the

solution is implemented, tested locally, and is reviewed by the senior SDEs in the team.
Technical:
1. UML Diagrams: These are very effective ways to give an overview of the solution and are key to having great design reviews and discussions.
2. Design patterns: These are general, reusable solutions to a commonly occurring problems and are used almost everywhere.
3. Java 1.8: We made use of key features of Java 1.8 like streams and lambda functions which helped in writing efficient, clean and more readable code.
4. Clean code: This encapsulates many things like following good naming conventions, using fewer blocks of code, using in-built programming language functionalities, etc. This would increase readability which in-turn makes it easier to review and maintain the systems.

**Brief Description of working environment, expectations from the company:** The work environment is very flexible. One does not have any specific timings in terms of coming to the office or leaving it, but one is definitely expected to deliver the projects in a timely manner. The team is very supportive in terms of helping a fellow teammate to debug issues. Your manager and mentor are there to cater to any issues you might face which are a great help, especially at Amazon, as all the dev-ops tools are internal.

**Academic courses relevant to the project:** Data Structures and Algorithms, DBMS, Computer Networks.

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## *PS-II Station: Amazon Development Centre, Hyderabad*

## Faculty

### Name: TV Rao

## Student

### Name: Rishabh Chuahan (2014B4A70946H)

**Student Write-up**

**Short Summary of work done during PS-II:** The objective of building UI based Data Migration Utility is to assist in migration of service provider data. Service

provider data currently resides in G2S2 and TPV. However, the data here resides in an unorganized and scattered manner.
It is entirely impossible to migrate the entire data in G2S2 in an automated manner because of the scattered nature of data in it. An automated process will only be able to migrate 30% of the service provider data available, for the rest 70% data we are left with two options:
1. The first option would be manually map the data to the entity model by looking up in G2S2, prepare per carrier document and then persist it in the SPDA.
2. The second option is to provide a UI to a valid person who would enter the service provider related details and then utility in the background would persist it in the database (as of now S3) and then the information would eventually be stored in SPDA.
The web application would serve the purpose listed as second point.

**Tool used (Development tools - H/w, S/w):** Java, Horizonte (Spring MVC based web framework) back end development platform, JUnit 5 testing framework, Mockito, HTML 5, CSS and AmazonUI for front end development, AWS resources like S3, DynamoDB, SQS.

**Objectives of the project:** Full stack development from scratch.

**Major Learning Outcomes:** The main learnings that were achieved within duration of training period:
• Horizonte (Spring MVC based web framework) backend development platform.
• Junit 5 testing framework.
• Mockito for mocking dependencies.
• HTML 5, CSS and AmazonUI for front end development.
• Microservices architecture.
• ACBDA pattern (Activity layer, Component layer, Builder layer, DAO layer, Accessor
layer) very famous architecture for developing services.
• Java Design patterns.
• Abstraction favoring development by using interfaces and abstract classes in Java.
• Working with AWS resources like S3 (Simple Storage Service), DynamoDB, SQS (Simple Queue Service).

**Brief Description of working environment, expectations from the company:** At Amazon, we hold each other and ourselves accountable for demonstrating the Leadership Principles through our actions every day. Most important, our Leadership Principles describe how Amazon does business, how leaders lead, and how we keep the customer at the center of our decisions. Our unique Amazon culture, described by our Leadership Principles, helps us relentlessly pursue our mission of being Earth's most customer-centric company. While our Principles have evolved over time, they remain true to the values we've held since Day 1.

**Academic courses relevant to the project:** DSA, DBMS, DAA, OS.

## Name : Rohan Kumar (2014B1A70473G)

**Student Write-up**

**Short Summary of work done during PS-II:** We were required to build an API to query the database efficitently and build pages on the customer and business-operations' end. I also pulled hard code out of a page and so the new page loads data from configs.

**Tool used (Development tools - H/w, S/w):** Intellij, Sublime text, Jsp, Spring Framework, Ruby on rails, Angular JS, HTML, CSS, Company provided Mac and a cloud desktop for development.

**Objectives of the project:** The project was to enable search on invoice db, and to produce search and details pages for the same.

**Major Learning Outcomes:** Experience Indian work culture, and to work at scale with industry standard tools.

**Academic courses relevant to the project:** CS f211 - Programming in Java

## Name: HEM VATS (2014B3A70683H)

**Student Write-up**

**Short Summary of work done during PS-II:** Full Stack Development.
Developed a full-fledged web application in java, jsp, Rest API and Spring MVC

**Tool used (Development tools - H/w, S/w):** Java

**Objectives of the project:** Web Application

**Major Learning Outcomes:** Full Stack Development.

**Brief Description of working environment, expectations from the company:** Developed a full-fledged web application in java, jsp.
Rest API and Spring MVC

**Academic courses relevant to the project:** DSA

# *PS-II Station: Amazon Development Centre, Delhi*

## Faculty

### Name : Ashish Narang

## Student

### Name : Snimarpal Singh (2014B3A70646G)

**Student Write-up**

**Short Summary of work done during PS-II :** The work required to develop from scratch, the user interface and backend for the Approvals System within Amazon specifically for one of Amazon's vendors. This required to provide custom functionality according to the use case of the vendor. The front end was in Ruby on Rails and AngularJS while the backend was in java based on SOAP architecture. I also worked on Spring Framework and databases for the project. Since the project was based on micro services architecture, it allowed me to work on multiple services and their efficient coordination to reduce operational latencies.
Other technologies used were Amazon SQS for listening queues and AWS for hosting purposes.

**Tool used (Development tools - H/w, S/w) :** Java, AngularJS, Ruby on Rails, Linux, HTML, CSS

**Objectives of the project :** To develop Invoice Custom Approvals Workflow

**Major Learning Outcomes :** Microservices Architecture, Messaging queues

**Brief Description of working environment, expectations from the company :** Working environment is pretty good. You are allowed to work at your comfort as long as you deliver result. The hierarchy itself is pretty flat and you can approach and share your ideas with pretty much every one. The development is fast paced and there is a lot to learn. You'll be treated as a full employee and given the work of a full employee without any discrimination.
I am very well satisfied with the kind of work I've got.

**Academic courses relevant to the project :** Object Oriented Programming, Computer Programming, Data Structures and Algorithms, Database Systems.

# *PS-II Station: American Express - Big Data Labs*

## Faculty

### Name : Vimal SP

## Student

### Name : Shrut Patel (2015A7PS0032G)

**Student Write-up**

**Short Summary of work done during PS-II :** Created a short noisy text analytics portal

**Tool used (Development tools - H/w, S/w) :** Python, Django, Numpy, Sklearn, keras, HTML/CSS/JS

**Objectives of the project :** Understand customer textual data in a fast and organized manner

**Major Learning Outcomes :** Applications of NLP on noisy unstructured enterprise data and presenting results to stakeholders

**Academic courses relevant to the project :** Machine Learning, Neural Networks and Fuzzy Logic

### Name : Pranav Kumar Asthana (2015A7PS0961H)

**Student Write-up**

**Short Summary of work done during PS-II :** I was in the unstructured data analytics team of the lab. My work involved researching and coming up with techniques for automatic text summarization. This was used for template based extractive text summarization of their customer interaction data, ie, customer care chat and call transcripts. This was done to draw insights about customer interaction and customer care violations.

**Tool used (Development tools - H/w, S/w) :** Python, other libraries for NLP, ML

**Objectives of the project :** Research and tool development

**Major Learning Outcomes :** Research methodology

**Details of Papers/patents :** None yet.

**Brief Description of working environment, expectations from the company:** Working environment is not very fancy. Minimal office(in terms of facilities), moderate interaction between colleagues, very few young people in the lab.

**Academic courses relevant to the project :** Information retrieval, machine learning, artificial intelligence

### Name: Kshitij Grovor (2015A7PS0070H)

**Student Write-up**

**Short Summary of work done during PS-II :** I worked on the research and development of gradient boosting library XGBoost which is used to detect fraud

**Tool used (Development tools - H/w, S/w) :** C++, Python, Valgrind, GNU Profiler

**Objectives of the project :** Add multiclass classification

**Major Learning Outcomes :** How development on a large scale machine learning algorithm is undertaken

**Academic courses relevant to the project :** Machine learning

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## *PS-II Station: American Express -RIM-C, Bangalore*

## Faculty

### Name : Vimal SP

## Student

## Name : Krishna Teja Nunna (2015A7PS0024H)

**Student Write-up**

**Short Summary of work done during PS-II :** During my Internship at American Express - RIM-C, Bangalore, I've worked on converting various capabilities from SAS Platform to Big Data Platform in PySpark. This was given to us because Amex is moving towards Big Data Platform due to increase in customer base and the requirement of processing huge amounts of data. Apart from this, I've also worked on automating various complicated functionalities that are the proprietary tools used by Amex to analyse the behavior of a customer. I've also been assigned to create and maintain various databases specific to different modelling teams depending on their need and the model currently in use. Amex also gave me the flexibility to search for functionalities which were missing at the time that could make certain processes easier and gave me full freedom to work on it once the idea was discussed and approved. Works were diverted and divided among others so that I could implement it without any distractions. Working at Amex never felt like a challenge. The environment is amazing and the office is filled with amazing and sweet people who are always ready to help. I never felt like an Intern or an outsider there. I was always included in everything the used to do for fun and also in some of the meetings. I think each and everything that I've learnt in my PS-II, whether it be new technologies or communication and interpersonal skills, will prove useful to me in the future.

**Tool used (Development tools - H/w, S/w) :** PySpark, Hive, Java, SAS

**Objectives of the project :** The objective is to recreate various capabilities existing in SAS platform in Big Data Platform using PySpark

**Major Learning Outcomes :** Clear understanding of AMEX credit card services and card dynamics. Exposure to data management, Query Processing and Automation Processes.

**Brief Description of working environment, expectations from the company :** Pleasant environment with friendly and ready to help teammates.

**Academic courses relevant to the project :** OOP, DBMS, Machine Learning

## Name : Silpa Soni Nallacheruvu (2015A7PS0054G )

**Student Write-up**

**Short Summary of work done during PS-II :** End to end automation of Score Card processes and migration of processes to big data platform

**Tool used (Development tools - H/w, S/w) :** Hive, Pyspark, SAS,Python, Java

**Objectives of the project :** End to end automation of Score Card processes

**Major Learning Outcomes :** Clear understanding of Amex Credit Card Services and Card Dynamics. Got an exposure to Data Management and Query Processing in Hive.

**Brief Description of working environment, expectations from the company:** Safe and pleasant environment and Friendly team mates who have been always in time of need.

**Academic courses relevant to the project:** DBMS, Data Mining, Machine Learning

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## *PS-II Station: American Express , Risk Information Management , Center of Excellence , Gurgaon*

## Faculty

### Name: Ashish Narang

## Student

### Name: Sanyam Jain (2015A7PS0094H)

**Student Write-up**

**Short Summary of work done during PS-II :** My work was related to conversion of a cross platform SAS based process to a single Big Data Platform using the python API of Apache Spark - a big data clustering framework (known as PySpark). It also involved analysis of data using Apache Hive , a SQL based framework for querying and fetching Big Data.It was interesting to understand from a business perspective as the process i developed would be directly used to calculate Risk Exposure for the customers.

**Tool used (Development tools - H/w, S/w) :** Apache Spark (Python API) , Apache Hive , Hadoop MapReduce , MS Excel , Jupyter

**Objectives of the project :** To Automate the computation of Risk Exposure and Credit Lines on Big Data Platform using PySpark

**Major Learning Outcomes :** I learnt a lot about how Big Data processes work , how business logics are developed in credit card companies , corporate culture , handling work life balance. Major learning outcome was to experience how subtle changes in technological processes affect business outcomes.

**Details of Papers/patents :** None

**Brief Description of working environment, expectations from the company:** American Express has been consistently ranked among the best companies in India to work for and during my PS it was evident why. The work environment is great. There is a perfect work-life balance. The organization takes great care of its employees and prides itself for having one the best environments to work for.

The work may be dull and not challenging enough sometimes but most of the times it is pretty interesting and one would enjoy working for the organization.

**Academic courses relevant to the project:** Data Base Systems, Software Engineering

## Name: Akhilesh Pakhetra (2015A7PS0003P)

### Student Write-up

**Short Summary of work done during PS-II:** American Express is one of the most prominent financial organizations in the world. Here at the Gurgaon, India, Amex has its Risk & Information Management Centre recently rechristened to Credit & Fraud Risk - Center of Excellence. This is a unit of global importance to Amex as it helps the organization in predicting and preventing any kind of risk or fraud activities carried out on Amex network.

As of now, CFR is under a major technological overhaul with legacy technologies being faced out and newer, more flexible and big data proficient technologies are being setup. So my projects revolved around migration and development of processes from older platforms and systems to the newer technologies.

My projects mainly involved redesigning the existing systems based on SAS and RDBMS to newer, flexible and big data capable PySpark and Hadoop based systems. PySpark is the Python API for Apache Spark originally based on Scala. Spark is a highly proficient data analytical tool which can work well with clustering frameworks and distributed storage systems like Hadoop, to speed up the processes with large amount of data.

I worked on two projects, namely - Automation of Model refresh process and the second, Case Review Generation Tool Enhancement.

**Tool used (Development tools - H/w, S/w):** Apache Hive, PySpark, Python, Pandas

**Objectives of the project:** Migration and Integration of processes from SAS based platforms to Hive and PySpark based systems.

**Major Learning Outcomes:** Teamwork, Owning Responsibilities, Proficiency in handling Big data and big data tools, PySpark, Hive

**Brief Description of working environment, expectations from the company:** Amex has been one of the best companies to work for -in India and the world as well for the past several years. This is a direct consequence of the work environment that Amex provides for its personnel to thrive. The colleagues are highly cooperative and support from the senior positions remains exemplary all the time. Some may find the work to be non-challenging but the work environment almost makes up for it and makes the time one spent here, a memorable period.
I expect the organization to continue its strong growth along with the way it takes care of its employees.

**Academic courses relevant to the project:** Database Systems.

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## *PS-II Station: AMRUT INTERNATIONAL*

## Faculty

### Name : Srikanta Routroy

## Student

### Name : HEMANT GANDHI (2014B4A40763H)

**Student Write-up**

**Short Summary of work done during PS-II :** My current area of work revolves

around the following areas
1) Optimization

2) Machine Improvement

3) Export Sales

4) Local Sales

5) Other Projects

**Tool used (Development tools - H/w, S/w) :** Microsoft Excel , Word

**Objectives of the project :** OPTIMISATION OF MACHINE HANDLING AND LABOUR COST TO IMPROVE IN AUTOMATIC MACHINERY HANDLING AND TO SAVE LABOUR COST BY BETTER METHODS AND ADDING IMPROVISED MACHINERY AND IDEAS.

**Major Learning Outcomes:** Importance of Research & Sales department in the food industry.

Importance of various aspects and use of different parameters for detailed data analysis.

Introduction to new tools involved in MS-excel like Sorting, Charts and Table.

Preparation of MIS (Management Information System) on a daily basis.

Effective communication skills

Attention to detail

Documentation involved in export of food products

**Brief Description of working environment, expectations from the company:** Helpful environment, good colleagues

**Academic courses relevant to the project :** Mechanical

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## *PS-II Station: Analog device*

## Faculty

### Name : S S yedlapalli

## Student

### Name : Niraj Mishra (2015A8PS0402P)

**Student Write-up**

**Short Summary of work done during PS-II :** Verification of trans impedance amplifier block.

**Tool used (Development tools - H/w, S/w) :** Cadence Virtuoso

**Objectives of the project :** Verify and test analog blocks

**Major Learning Outcomes :** Familiarity with corporate world.

**Brief Description of working environment, expectations from the company :** Do everything on your own. Mind this.

**Academic courses relevant to the project :** Microelectronics circuits

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# *PS-II Station: Anant Infomedia Pvt Ltd*

## Faculty

### Name : Narayan Suresh majerekar

## Student

### Name : Soni Dhruvin Rupesh (2015A7PS0047G)

**Student Write-up**

**Short Summary of work done during PS-II :** Worked upon the existing product

of the CRM solution as SFA software hosted on web, mobile, tablets.

In the field of Web Development we have worked upon a product for the existing and old client. We have tried to improve the Software Product. Mainly we have made the improvements in three dimensions: 1) Responsiveness (Key Feature); 2) UI & UX; 3) Performance.

Responsiveness is an approach of web designing that will render (load) the web pages in such a way that web page looks in proper structure and attractive on all device width. UI & UX improvement was majorly for a new look to the product. We used bootstrap framework and along with some of the common theme based classes of CSS defined by me. At last we also implemented new technology for better performance overall. For that we used jQuery Library functions, AJAX implementation and some readymade plug-ins of jQuery.

**Tool used (Development tools - H/w, S/w) :** Notepad++, FileZila, Navicat, Google Chrome, Internet Explorer.

**Objectives of the project :** 1) Make the existing CRM solution SFA software responsive to all devices; 2) UI-UX improvement; 3) Performance Improvement.

**Major Learning Outcomes :** Front-end web development using HTML, CSS, JavaScript, Bootstrap, jQuery, PHP, MySQL.

**Brief Description of working environment, expectations from the company :** First of all the timings were totally illogical and out of reasoning. They were 9:30AM to 6:30PM from Monday till Saturday. They added normal 9 to 5 job lunch hour also as working hours. With no Saturday as holiday. Here the working environment was very below our expectations. We were given our stipends after 10th of the next month. And once for a month we were given our stipend of a month on 21st of the next month.Every time we were replied with new deadlines to be given for cheques with new and new non-convincing reasons.

The company has huge lag in providing a good and professional work environment. Also the work is done in very much pressure and discouraging mode.

Our Project was not at all Managed Properly.

We were planned to suggest and give more creative ideas in starting but eventually we were forced without any reasons to just meet the small small deadlines.

The deadlines were quiet irrational along with that there seemed lack of experience of project management and efforts in setting the deadlines properly aligned to the amount of work. The proportion of deadline was mismatching with the amount of work.

Which ended up us crossing the deadlines which brought even more pressure and discouragement.

**Academic courses relevant to the project :** Database Management Systems

## Name : Sagar Malhotra (2015A7PS0030G)

### Student Write-up

**Short Summary of work done during PS-II :** 1) Modified an existing CRM for Sales Force of a Pharmaceutical firm built using PHP, Javascript and HTML into a responsive CRM which can be accessed easily on all devices with different screen widths.
2) Made the CRM more efficient using AJAX in JQuery.
3) Improved the User Interface and User experience using HTML, CSS, Bootstrap

**Tool used (Development tools - H/w, S/w) :** Notepad++, FileZilla, Navicat MySQL

**Objectives of the project :** To make an existing CRM responsive for devices with different screen widths and to improve the UI

**Major Learning Outcomes :** Learnt Front-end Web development using HTML, CSS, Javascript, Jquery, PHP and MySQL

**Brief Description of working environment, expectations from the company :** Working environment is way below expectation. Stipend was never paid on time with 12-15 days delay every month. Work hours are more than any average company with no holiday or not even half day on Saturdays and one hour extra everyday than other conventional companies i.e 9:30 am - 6:30 pm. The company lacks good work culture and the work environment is quite pressurizing and discouraging.

Moreover, there has not been any significant learning or career growth as the project allotted was based on Front-end Web development using HTML, CSS which is of very minimal use if one does not want to pursue Web-development field in future and also creativity in work is not properly encouraged and the focus is more on meeting the deadlines and completing the work.

The company strongly discourages any breaks from work during work hours and the workplace is also not appreciable with no PC or Laptop provided for the work.

Work load was way more than expected with heavy and irrational deadlines and lack of good Project Management led to a lot of pressure and discouragement.

**Academic courses relevant to the project :** Database Management Systems (DBMS)

# *PS-II Station: Apollo Tyres Global R&D Asia*

## Mentor

### Name: Ganesh K

**Designation:** Senior Scientist

**Comments:** Good Performance, no issues overall

## Faculty

### Name : Dr. Pradheep Kumar

## Student

### Name : Divyank Shekhar (2015A3PS0335H)

**Student Write-up**

**Short Summary of work done during PS-II :** Implemented and tested TPMS device in the tyres, studied the datasheet and firmware program for the chips involved in the device

**Tool used (Development tools - H/w, S/w) :** Sensor Chip, BLE chip, specific IDEs

**Objectives of the project :** Increasing power efficiency

**Major Learning Outcomes :** Hands on Board experience, Industry Experience

**Details of Papers/patents :** -

**Brief Description of working environment, expectations from the company :** Very supporting staff. The firm provides good industry exposure. Its a bit far from the city which is the only disadvantage

**Academic courses relevant to the project :** Microprocessors and Interfacing, Microelectronics Circuits, C programming

## Name : Gopi Krishna Mendu (2015A3PS0285P)

**Student Write-up**

**Short Summary of work done during PS-II :** Reducing Bluetooth Low Energy(BLE) stack size used for Tire pressure monitoring system(TPMS), thereby increasing the battery life significantly. Resolved the issue the organization faced while trying to configure multiple TPMS devices to a single android application, by assigning unique MAC ids to different devices.

**Tool used (Development tools - H/w, S/w) :** MCUXpresso , j-link segger

**Objectives of the project :** Reduction in stack size of BLE.

**Major Learning Outcomes :** C and C++ languages ,Industry Experience

**Academic courses relevant to the project :** Micro Processors and Interfacing , C programming

## Name : Ankit Muthiyan (2014B5A30903G)

**Student Write-up**

**Short Summary of work done during PS-II :** Understanding and application of data analysis methods in R and MATLAB. Built a GUI using the App Designer for simplified data analysis.

**Tool used (Development tools - H/w, S/w) :** MATLAB, R

**Objectives of the project :** To build an application for strain sensor data analysis using MATLAB

**Major Learning Outcomes :** Data Analysis

**Academic courses relevant to the project :** Singnals and Systems, Computational Physics, Programming

# *PS-II Station: Apollo Tyres Global R&D Centre, Chennai*

## Mentor

### Name: Ganesh K

**Designation:** Senior Scientist

**Comments:** Good Performance, no issues overall

## Faculty

### Name : Pradheep Kumar

## Student

### Name : Karan Veer Singh (2015A8PS0458G)

**Student Write-up**

**Short Summary of work done during PS-II :** I created a Java GUI Application that connects to an RFID reader and enables the user to read the tags in the field of view of the antenna of the reader. The user can also apply singulation controls to filter the tags he/she wants to be read.

**Tool used (Development tools - H/w, S/w) :** Java Swing

**Objectives of the project :** Building an Java app with RFID tag reading abilities

**Major Learning Outcomes :** Learned Java Swing, SQL and basics of C++

### Name : Chandrashekhar Koushik (2015A4PS0227G)

**Student Write-up**

**Short Summary of work done during PS-II :** Work was related to Digital Signal Processing. Basically had to analyse accelerometer data and calculate certain parameters of the tire from it.

**Tool used (Development tools - H/w, S/w) :** R, MATLAB, Excel

**Objectives of the project :** To calculate tire patch length

**Major Learning Outcomes :** Digital Signal Processing

**Academic courses relevant to the project :** Digital Signal Processing

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## *PS-II Station: APPLE INDIA PVT. LTD.*

## Faculty

### Name : T.V. RAO

## Student

### Name : Shivam Agrawal (2014B3A70940H)

**Student Write-up**

**Short Summary of work done during PS-II :** I worked in the DevOps team which is a part of the Ad Platforms Group of Apple. I was initially asked about the technology I was interested to work on. So, I was given the machine learning part of a bigger project my whole Ops team was involved in. I had to use machine learning to help identify anomalies in business critical metrics in real-time which takes a lot of time manually. By identifying these anomalies quickly we can check for issues and take proactive measures and prevent huge revenue losses.

**Tool used (Development tools - H/w, S/w) :** Internal tools for Machine Learning, pytorch, AWS s3, flask, internal deployment tools

**Objectives of the project :** Predict anomalies in business critical metrics to identify issues and reduce revenue losses

**Major Learning Outcomes :** I had so much time that I got to learn about a wide range of technologies and could spend reasonable time learning each one that I worked on. A major part was about machine learning and deep learning. I learned about pytorch framework for deep learning and used it to write Multi-layered Perceptrons and LSTM models. I learned about optimising the use of storage and

computation resources and also about the deployment workflow. Learned flask and other related technolgies to develop machine learning API.

**Brief Description of working environment, expectations from the company :** The working environment was great. My mentor and manager particularly were very helpful and had trust in what I was doing. The expectation was to make me learn rather than just finish things off or achieve any target.There was no pressure of deadlines which gave me time to explore and read about things in detail.

**Academic courses relevant to the project :** Machine Learning, DBMS

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## *PS-II Station: ARM Embedded Technologies Private Limited , Bangalore*

## Faculty

### Name : Ms Rekha Anandrao

## Student

### Name : Rahul Gottipati (2015AAPS0957H)

**Student Write-up**

**Short Summary of work done during PS-II :** I was tasked with optimizing a sqlite database based python script that took two databases and compared the corresponding table data based on a number of command line arguments.
This script, run on a weekly basis, took approximately 12 hours on a single run.
Using the pandas library I introduced optimizations in the comparison functionality to bring it down to under 2 hours of running time.
I was also asked to develop a partner tool that encrypted sensitive data files before uploading them to specific drop zones and send appropriate notifications.
Parallel to these main tasks, I also wrote several unit tests for many scripts in Python and Perl.

**Tool used (Development tools - H/w, S/w) :** Python, Perl, Linux environment, Git

**Objectives of the project :** Optimizing partner tool

**Major Learning Outcomes :** Learnt a fair bit about producing production quality code and understood the basics of a version control system, git

**Details of Papers/patents :** None

**Brief Description of working environment, expectations from the company :** The company environment is excellent. Everyone, fellow team members or not, was willing to give a helping hand whenever required. Working hours are flexible and there is no undue stress or pressure.
Team outings are also pretty frequent and enjoyable.

**Academic courses relevant to the project :** Object Oriented Programming

## Name : Pratyush Srivastava (2015A3PS0346H)

**Student Write-up**

**Short Summary of work done during PS-II :** The work was basically related to computer architecture completely on the ARM architecture and was based on indigenous tool being developed by ARM.

**Tool used (Development tools - H/w, S/w) :** BASH , Perl

**Objectives of the project :** ArchEx

**Major Learning Outcomes :** BASH , Vim , ARM Architecture

**Academic courses relevant to the project :** Computer Architecture

## Name : Somjit Banerjee (2015AAPS0184H)

**Student Write-up**

**Short Summary of work done during PS-II :** Running benchmarks on the different generations of cpu that ARM has and compiling the results. Calculating the theoretical expectations by understanding the micro architecture involved and the source code. Comparing the results with the theoretical expectations and also see the generational trends. Analyze all the results and explain the trends on the basis of pmu events, architecture and source code.

**Tool used (Development tools - H/w, S/w) :** Linux Shell scripting , (Perl,Python,C,C++)Programming Languages, Development Boards, Cadence Emulator Z1

**Objectives of the project :** Micro-architecture profiling through benchmark analysis

**Major Learning Outcomes :** Computer Architecture, Scripting, Linux environment, Performance measurement

**Academic courses relevant to the project :** Computer Architecture

## Name : Harshit Arora (2015A3PS0184P)

**Student Write-up**

**Short Summary of work done during PS-II :** In physical design, because of ruthless competition, it is necessary that you have the best of design and technology to stay ahead of your competitors.
However, these alone are not enough if you don't know how to use the technology optimally i.e. which tools give the best performance with your design optimization. This is the aim of this project, to infer which eda tools result in the best PPA (Power Performance Area) for a technology. We consider the various tools from the two stalwarts of the eda tool industry, Cadence and Synopsys, to see which combination gives us the best possible PPA.

**Tool used (Development tools - H/w, S/w) :** CADENCE AND SYNOPSYS EDA TOOLS

**Objectives of the project :** OPTIMIZATION OF PPA ON MIXED-FLOWS ACROSS CADENCE & SYNOPSYS DIGITAL IMPLEMENTATION TOOLS

**Major Learning Outcomes :** Knowledge of physical design, hands-on experience on the EDA tools used in the industry and experience of working in an organization.

**Brief Description of working environment, expectations from the company :** The environment is very friendly and chilled out. The company wants you to have a comfortable environment which promotes you to enjoy your work. There are deadlines but not unrealistic ones and if you work properly along with your team, these are pretty easy to achieve.

**Academic courses relevant to the project :** Basics of Digital Design, ADVD, Computer Architecture

## Name : Ishan Gupta (2015A3PS0192P)

**Student Write-up**

**Short Summary of work done during PS-II :** The work was divided into two

phases. The first phase involved generation and validation of views used for industry standard EDA tools. The setup for Arm internal software used for these views was generated.
Second phase was based on designing general purpose Input/Output cells (GPIOs) for low power applications which involved tuning certain types of cells to get the desired performance and experimenting various architectures in order to develop the one with least leakage.

**Tool used (Development tools - H/w, S/w) :** Builder Tool(ARM Internal Tool)
Cadence Virtuoso (For generating schematics and netlists)
Cadence Viva (For analyzing the wave forms)
Spectre/Hspice (For simulations)

**Objectives of the project :** The first project was aimed at generating setup for builder tool used to generate and validate industry standard views for I/O libraries. Second Project was aimed at development of low power i/o cells.

**Major Learning Outcomes :** Linux (OS)
Cadence Virtuoso (For generating schematics and netlists)
Cadence Viva (For analyzing the wave forms)
Spectre/Hspice (For simulations)
Interfacing done by I/O cells in an SoC

**Brief Description of working environment, expectations from the company :** The working environment is very motivating. Learning and fun goes hand in hand. The employees are very enthusiastic and are always ready to help you out. They not only teach you but are ready to learn from you too.
Don't expect a lot if getting PPO is the prime concern because that is variable and depends upon the company policies. But if learning is the motivation, then the internship process here is awesome. They provide you rights to work on live projects with the whole team, making you go through the actual work one does over here as a full time employee, thus giving the insights of the true story.

**Academic courses relevant to the project :** ADVD, Computer Architecture, Very basics of ED, Basic knowledge of Linux & xml.

## Name : Rajuldev Sumeeth (2015A3PS0297H)

### Student Write-up

**Short Summary of work done during PS-II :** The main aim of the work Self-Characterization Micros was to create a set of tests that can be run on Arm architecture devices to get some visibility into underlying microarchitecture. Primarily the focus was on high-level performance parameters like machine width, execution cluster latency and throughput, cache hierarchy, etc.

**Tool used (Development tools - H/w, S/w) :** Unix environment, Multiple

mobile devices for testing.

**Objectives of the project :** To get some visibility into underlying architecture of ARM based architecture processors.

**Major Learning Outcomes :** microarchitecture of processors

**Brief Description of working environment, expectations from the company :** The working environment is good enough to stay motivated to hit the office on every working day. The support given by the mentor/manager is quite appreciable. We get to learn a lot of things beside the technical knowledge we gain.

**Academic courses relevant to the project :** Computer Architecture, C programming.

## Name : Digvijay Bansal (2015A3PS0187P)

### Student Write-up

**Short Summary of work done during PS-II :** I worked on designing a custom software solution for Memory Compiler Evaluation from scratch and to provide feedback on performance metrics for various memory compilers,
the work majorly consisted data analysis and scripting.
Later, the project got extended to develop solutions for comparative Power, Performance and Area analysis over various set of compilers.
I did work on Web-Development also as a side project. Overall it was a good learning experience.

**Tool used (Development tools - H/w, S/w) :** Python, Shell Scripting, Tcl

**Objectives of the project :** To automate the Memory Compiler Evaluation process, and make a flow to ease process of benchmarking with minimum user interaction. And to present the collected data in form of spreadsheets and visual plots.

**Major Learning Outcomes :** Learnt the Memory Design Flow.
Understood the effect and implementation of various features on Memory Compilers and how they effect the performance metrics.
Also got acquainted with the process to handle the complete software development cycle.
I understood the corporate culture and the expectations from a fresher engineer in the industry.

**Brief Description of working environment, expectations from the company :** The office vibe is calm and work was carried out quite smoothly.

All the employees are friendly & approachable to get doubts cleared.
I was given enough time to learn and deliver the task assigned.
The work culture is not hectic and comparatively manageable.
Finally, ARM is a great place to work and my expectations from the company were mostly met positively.

**Academic courses relevant to the project :** Analog and Digital VLSI Design

## Name : Prachi Sharma (2015A3PS0278P)

### Student Write-up

**Short Summary of work done during PS-II :** I was part of multiple projects in which I have developed standard cell libraries using Cadence and Synopsys EDA tools. It involved linux scripting, circuit and layout design and characterizing them to simulate them for real time conditions.

**Tool used (Development tools - H/w, S/w) :** Cadence Virtuoso, Synopsys back end

**Objectives of the project :** The main objective of this project is to generate the model views as per industry standards and perform quality assurance for the same using indigenous tools and third-party tool caterers. Standard Cell team designs libraries consisting of thousands of cells based upon the requirements of the customer. The PDK is created by the foundry defining a certain technology variation for their processes. It is then passed to their customers to use in the design process. The customers may enhance the PDK, tailoring it to their specific design styles and markets. The standard cells are characterized with the given PDK files using the characterization tools. The fundamentals of standard cells for which these libraries are developed are dealt in the project. The methodology used for the characterization and the effects that play a part are also explained.

**Major Learning Outcomes :** Circuit Design, STA, backend ASIC flow

**Brief Description of working environment, expectations from the company :** The Standard Cell team is the one to intern with as I have learnt more digital design work than many of my friends in other PS2 stations. The colleagues are so patient with you and you are included in the team's live projects with real customers. Industrially applied ADVD is what you can learn here if you have the passion to ask for creation work and do it as per deadlines. I would highly recommend my team for joining as PS2.

**Academic courses relevant to the project :** ADVD, computer architecture, Microelectronics, circuit design


## Name : Vibhor Govil (2015AAPS0258H)

**Student Write-up**

**Short Summary of work done during PS-II :** Created a Java Utility to analyse large sets of data containing run-time statistics of different cell views of a product and generate three types of reports and xml file based on the data analysed. Successfully automated the complete process of migrating a project from subversion (svn) to git with all its history and tags.

**Tool used (Development tools - H/w, S/w) :** Software - Intellij IDEA, Unix, Git, Subversion

**Objectives of the project :** A Java application that analysis run-time statistics like CPU time, Memory Footprint of different cell views of an IP and generates output reports based on the data analyzed. And how to migrate a project from Subversion (svn) to Gerrit (git) with all its history (previous revisions) and the source codes and automate the process using shell scripting.

**Major Learning Outcomes :** Learned about the use of Java from industry perspective and how best to implement it. Also learned shell scripting and the UNIX environment and various technologies used in the industries such as Load Sharing Facilities, Module Systems and Version Control Systems.

**Academic courses relevant to the project :** Object Oriented Programming, Data Structures and Algorithms

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# *PS-II Station: ARM Noida*

## Faculty

### Name : R K Tiwary

## Student

### Name : Kunal Gulati (2015A3PS0353H)

**Student Write-up**

**Short Summary of work done during PS-II :** Our work was related to designing SRAM based memories to build Register Files and Register Arrays. I was assigned different activities which assisted other teams to work on the deliverable properly like benchmarking simulators, bitcell analysis, memory instance testing, etc.

**Tool used (Development tools - H/w, S/w) :** Cadence Spectre, CustomSim XA, Shell scripting, Python, Virtuoso

**Objectives of the project :** To assist the teams in benchmarking and shifting from Spectre to CustomSim working on technology nodes like 22nm, 18nm etc. Bitcell analysis, memory instance testing, analysis and testing of various parts of an instance.

**Major Learning Outcomes :** Digital VLSI design for SRAM based memories, CMOS basics, Timing, etc.

**Academic courses relevant to the project :** Analog and Digital VLSI Design, Digital Design, Microelectronic Circuits, Electronic Devices

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## *PS-II Station: Baldor Technologies Pvt Ltd*

## Faculty

### Name : Dr. Ankur Pachauri

## Student

### Name : Saksham Gupta (2015A3PS0245P)

**Student Write-up**

**Short Summary of work done during PS-II :** 1. Digital Forensics - Using publicly available databases Build an API that will act as an ease for the agents to identify fraud in different fields.
2. OCR - Extract information from different ID cards using OCR and return the details of the person to our agents. Add more type of IDs to the existing API

**Tool used (Development tools - H/w, S/w) :** Python, Elixir, Phoenix framework, Go Lang, Ruby on Rails, React JS, etc

**Objectives of the project :** Digital Forensics - Automate the verification process for various clients(Insurance companies, banks, etc) through APIs and software and reduce the decision making time for them, OCR - Automate the details extraction process for agents through softwares using OCR

**Major Learning Outcomes :** Frontend and backend development, databases, web sockets, OCR techniques, web scraping

**Brief Description of working environment, expectations from the company :** Great working environment

**Academic courses relevant to the project :** DSA, OOP, DBMS

### Name : Madiha Manzoor (2015A3PS0008P)

**Student Write-up**

**Short Summary of work done during PS-II :** worked with Process Engineering team for first 3 months and Machine Learning team for 2 and half months. First project was based on analysis of processes and the second project included working with CNN model over image validation and classification.

**Tool used (Development tools - H/w, S/w) :** Python, Neural Networks, LINUX

**Objectives of the project :** 1. Optimization and improvements of the existing processes.2. Image Validation using Machine Learning, CNN.

**Major Learning Outcomes :** PYTHON, Neural Networks, LINUX

**Brief Description of working environment, expectations from the company :** Cooperative work environment

**Academic courses relevant to the project :** Machine learning, Neural Networks

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## *PS-II Station: Bank of Hodlers*

## Faculty

### Name : Raja Vandhana P.

## Student

### Name : Ravi Kiran Svs (2015A4PS0327H)

**Student Write-up**

**Short Summary of work done during PS-II :** Develop the alpha stage of the product where a user can create/ delete his wallets and exchange currency between them. And create WordPress front-end for the office blog.

**Tool used (Development tools - H/w, S/w) :** JavaScript and WordPress front-end tools

**Objectives of the project :** alpha stage of the Product

**Major Learning Outcomes :** JavaScript, Node, Express

**Brief Description of working environment, expectations from the company :** Very workaholic team. Supportive and motivating. Highly dedicated towards the goal of achieving a brand new format of banking structure.
Would want to work longer.

**Academic courses relevant to the project :** Computer Programming

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# *PS-II Station: Beckman Coulter, Bangalore Development Centre*

## Faculty

### Name : Dr. R. Bharathi

## Student

### Name : Arindam Kr Bhattacharjee

## Student Write-up

**Short Summary of work done during PS-II :** Majority of the projects in the research and development department of Beckman Coulter, Bangalore are associated with flow cytometry. I mainly worked with panels used for immune function and immune monitoring research on flow cytometers.

**Tool used (Development tools - H/w, S/w) :** Flow Cytometer (NAVIOS, NAVIOS EX, CytoFLEX), Kaluza analysis, CytExpert, JMP, MS Excel

**Objectives of the project :** To develop evaluation parameters of DuraClone panels on different types of flow cytometers

**Major Learning Outcomes :** The major outcome of the project was that I acquired skills in the immunology and flow cytometry domain. These skills can be very helpful as many research organization in the US and Europe use flow cytometers for research in oncology, drug development and in-vitro diagnostics.

**Brief Description of working environment, expectations from the company :** The working environment is excellent at Beckman Coulter. Interns undergo an extensive training program in which they are taught about operations of instruments such as centrifuges, HPLC, flow cytometers and about the various rules of the organization. The associates are willing to help the interns at any point of time.

**Academic courses relevant to the project :** Molecular biology and immunology

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# *PS-II Station: Belief Systems*

## Faculty

### Name : Anjani Srikanth Koka

## Student

### Name : Venushrinivasan Raja (2015A3PS985H)

**Student Write-up**

**Short Summary of work done during PS-II :** We focus on Business Process Reengineering.
The objective of this project is to observe a distressed company from the outside. Through people and process transformation, we forecast cashflows, create necessary contingencies, optimize costs, and create financial dashboards reports. We assess the overall performance of a distressed company and its employees through various measures, and implement changes to turn around their processes and revenue.

**Tool used (Development tools - H/w, S/w) :** Power BI, MS Office

**Objectives of the project :** Business Process Reengineering

**Major Learning Outcomes :** Organizational Evaluation

**Academic courses relevant to the project :** Finance Courses

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## *PS-II Station: Belong.co*

## Faculty

### Name : Uma Maheshwari Natarajan

## Student

### Name : Simantini Huchche (2014B2A40611P)

**Student Write-up**

**Short Summary of work done during PS-II :** My team was DevOps which deals with the infrastructure, deployment and relentless execution of the code/software developed within the organisation. As a part of this, it is a devOps engineer's duty to recognise the pain points and mend them so as to make the software efficient for use to the end user and robust at the same time. My project started with using the Alphabet tool Outline. Throughout the course of the internship I used Python, dealt with api calls and integrations.

**Tool used (Development tools - H/w, S/w) :** docker, ubuntu, pycharm

**Objectives of the project :** To make deployments seamless

**Major Learning Outcomes :** Knowledge about various devOps practices

**Academic courses relevant to the project :** OOP, OS, CP, SCM, PPC, Math

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## *PS-II Station: BG Shirke Construction Tech. Pvt. Ltd.*

## Faculty

### Name : Dr. Mahesh Hamirwasia

Comments:

## Student

### Name : Soumil Gupta (2014B3A20693P)

**Student Write-up**

**Short Summary of work done during PS-II :** I was allotted four projects during my stay here at the company, that is, I was assigned four buildings of which I had to perform the design. Two of them were steel structures, one Reinforced Concrete structure and one composite structure. For all of these structures, I was the independent structural engineer. I was responsible for delivering the structural design report, structural drawings and fabrication drawings within the deadline. There were certain challenges unique to each project and it was huge learning opportunity, working on each of them. The steel structure had a Steel truss for it's roof and process of the design of the truss was a brilliant space to give way to your innovation and creativity as an engineer. The composite structure was an entirely new concept having steel members and an in-casing of RCC. The concrete structure, though only a G+2 structure, was located in Earthquake zone V, for which extensive dynamic computations had to be performed using response spectrum analysis, incorporating the effect of vertical ground motion. To sum it up, I believe it was a very comprehensive experience for an undergraduate civil engineer.

**Tool used (Development tools - H/w, S/w) :** ETABS, AutoCAD

**Objectives of the project :** To prepare design report and working drawings of the allotted structures

**Major Learning Outcomes :** Hands on experience as a structural engineer, working on steel, concrete as well as composite structures.

**Brief Description of working environment, expectations from the company :** The best part about the company is that they do not treat interns and employees differently. Which means that they continuously assign you projects, of which you are the independent structural engineer and along with an architect, you have to complete the design and the drawings within the deadline. But the work culture is below average to say the least. Medium of conversation is majorly Marathi, you have to work 6 days a week and with the deadlines closing in, you'll have to stay back as long as it takes. So, I have had to sit through two hour long conferences, staring blankly at faces because everyone was speaking in Marathi. But again, the VP of the department is an absolute genius and the smallest of the discussions that I could have with him (because he stays occupied mostly), were very enlightening(with respect to structural engineering). So, the company doesn't provide much of an experience on grounds of professionalism and people skills, but regarding engineering stuff, it's a good place to be.

**Academic courses relevant to the project :** Mechanics of Solids, Analysis of Structures, Design of Steel Structures, Design of Concrete Structures

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## *PS-II Station: Bharat Forge Ltd., Pune*

## Faculty

### Name : Naga Vamshi Krishna

## Student

### Name : Eshwar Reddy Karne (2015A4PS0366P)

**Student Write-up**

**Short Summary of work done during PS-II :** The project covers the range of issues in cost reduction of manufacturing a product and

in-depth of cost reduction due purchase of raw materials and purchase of vendor. The project gives the
brief idea on how to manage vendors and reduce cost of parts the detailed view of things required .

**Tool used (Development tools - H/w, S/w) :** Price list, excel sheet, phone

**Objectives of the project :** Cost reduction in manufacturing

**Major Learning Outcomes :** How to talk to vendors, estimation of discount, supply chain management

**Academic courses relevant to the project :** SCM material science

## Name : Satvik Adarsh Kumar (2014B2AB0176P)

**Student Write-up**

**Short Summary of work done during PS-II :** It was an okay experience to summarize overall. Didn't get the exposure to the work the company did, but had a decent industrial experience in terms of data management and analysis. My project for the company was to demand forecast and manage the inventory. This was a very basic exposure to the supply chain of a particular company. Over that I also helped the company to schedule the flow of the materials according to the customer's demand. We used backwards scheduling technique and successfully increased the productivity in the same amount of time. Also, I helped my department to improve the TPM (Total Productive Management) by using the 5S System and reduced the various wastes. Overall, the experience wasn't what I expected or needed but yet satisfying.

**Tool used (Development tools - H/w, S/w) :** MS Excel

**Objectives of the project :** To achieve maximum productivity by the help of techniques such as Demand Forecasting, Inventory Management and Backwards Scheduling

**Major Learning Outcomes :** Backward Scheduling, Industrial Experience

**Academic courses relevant to the project :** Scheduling

## Name : N Satya Ananda Gautam (2015A4PS0406P)

**Student Write-up**

**Short Summary of work done during PS-II :** Conducted the time study for the operations used in Brinell hardness testing procedure and increased the productivity by automation.

**Tool used (Development tools - H/w, S/w) :** NA

**Objectives of the project :** To increase productivity by automation

**Major Learning Outcomes :** How to conduct time study, Components of automation

**Academic courses relevant to the project :** Product Plan and control

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## *PS-II Station: Bosch research and technology center*

## Faculty

### Name : Ms. Akanksha Bharadwaj

## Student

### Name : Mukkavilli Kalyan (2015A8PS0578P)

**Student Write-up**

**Short Summary of work done during PS-II :** Work based on machine learning. 2 fields, computer vision and IoT.

**Tool used (Development tools - H/w, S/w) :** Python, tensorflow.

**Objectives of the project :** Reducing the complexity of a neural network

**Major Learning Outcomes :** Neural networks, python

**Academic courses relevant to the project :** Neural networks and fuzzy logic

# *PS-II Station: Bundl Technologies Private Limited (Swiggy), Bangalore*

## Faculty

### Name : Anjani Srikant Koka

## Student

### Name : SHUBHENDU DWIVEDI (A2PS0665P)

**Student Write-up**

**Short Summary of work done during PS-II :** Growth of swiggy select

**Tool used (Development tools - H/w, S/w) :** Excel, sql, r proggramming

**Objectives of the project :** Finding ways for improving select restaurants

**Major Learning Outcomes :** Tech. Tools excel, sql etc

**Brief Description of working environment, expectations from the company :** Supportive people, working with excel some idea of data analytics

### Name : Krishnam Sharda (2015ABPS0870P)

**Student Write-up**

**Short Summary of work done during PS-II :** Conversion is one of the most important metric to judge upon the growth of business. My project involved working with different metrics, different departments, and different softwares, which gave me an opportunity for immense learning. I've worked on various experiments, so as to improve the conversion and customer experience. I also worked on Loyalty Program – Swiggy SUPER. I coordinated with Analytics and Supply team to work on additional benefits for SUPER, along with measuring the impact of those benefits, and how they should be scaled up in future.

**Tool used (Development tools - H/w, S/w) :** S/w - Excel, PowerPoint, SQL

(Dbeaver)

**Objectives of the project :** To increase the conversion and retention rate by understanding the consumer behaviour across all the platforms and developing business models and experiments to implement and track the changes.

**Major Learning Outcomes :** Learned about advance functions in excel, formulating and optimizing SQL queries, different metrics (ROI, AOV, OPD, etc.), customer insights, their needs, and how can we tweak some offerings to match up with their needs. Gained first-hand experience on creating short hypothesis, working in crunched timelines, and campaigns management.

**Brief Description of working environment, expectations from the company :** The company focuses on 8 key values: Be humble; Standup, disagree and commit; Be honest, display highest levels of Integrity; Strive for excellence; Consumer comes first; Exhibit bias for action; Act like an owner; Always be curious, always be learning. Work culture imbibes these key values, which makes Swiggy stand out first.

**Academic courses relevant to the project :** Principle of Economics, Supply Chain Management, Operations Management

## Name : Ashutosh Purohit (2015ABPS0501P)

### Student Write-up

**Short Summary of work done during PS-II :** Discounting is one of the most important metric to judge upon the growth of business. My project involved working with different metrics, different departments, and different software which gave me an opportunity for immense learning. I've worked on various experiments, so as to improve the conversion and customer experience. I also worked on Expansion. I coordinated with Analytics Supply,HR and Ops teams to work on additional benefits for the expansion, along with measuring the impact of those benefits, and how they should be scaled up in future

**Tool used (Development tools - H/w, S/w) :** Excel, Powerpoint, SQL, PowerBI

**Objectives of the project :** Expansion 4.0 is a plan to build a further depth into the country most efficiently and effectively and Creation of a platform to measure growth due to such couponing strategies

**Major Learning Outcomes :** Learned about advance functions in excel, formulating and optimizing SQL queries, different metrics (ROI, AOV, OPD, etc.), customer insights, their needs, and how can we tweak some offerings to match up with their needs. Gained first-hand experience on creating short hypothesis, working

in crunched timelines, and campaigns management.

**Brief Description of working environment, expectations from the company :** The company focuses on 8 key values: Be humble; Standup, disagree and commit; Be honest, display highest levels of Integrity; Strive for excellence; Consumer comes first; Exhibit bias for action; Act like an owner; Always be curious, always be learning. Work culture imbibes these key values, which makes Swiggy stand out first.

**Academic courses relevant to the project :** Principle of Economics, Supply Chain Management, Operations Management

## Name : Pranavpriya Dubey (2015A1PS0710G)

### Student Write-up

**Short Summary of work done during PS-II :** Worked on the Expansion Project doubling the number of cities serviced by Swiggy. Work ranged from Data Analysis to Project Management to devising Strategies.

**Tool used (Development tools - H/w, S/w) :** Excel, SQL, Google Maps, MAPBOX

**Objectives of the project :** Exponential Expansion: Expanding Swiggy to Tier-II and Tier-III cities

**Major Learning Outcomes :** Gained Project Management Skills, Leadership Skills, Data Analysis Skills using Excel and Market Research Skills

**Academic courses relevant to the project :** Marketing Research, POM

## Name : MOHANA RUPA M (2015AAPS0180H)

### Student Write-up

**Short Summary of work done during PS-II :** The objective of this project is to improve the pace at which we can finish the preparation of the item without compromising on the quality of the food.

We plan to lay down a set of management principles which if implemented can provide the ideal results. Apart from laying down a framework for the future, it majorly deals with reducing the dead time in the system to ensure a faster delivery to the customer to increase his gratification and satisfaction.

We undertook various observation methods to come to conclusions and also tested some out of the box solutions to improve the results and obtain our final goal of a delivery time of 30 min, a standard which has to be sustainably met.

**Tool used (Development tools - H/w, S/w) :** Excel

**Objectives of the project :** improve the pace at which we can finish the preparation of the item without compromising on the quality of the food

**Major Learning Outcomes :** Working with excel, professional report writing, corporate working experience, team collaboration and work

**Academic courses relevant to the project :** Principles of management

### Name : Kapil Agrawal (2014B3A30579P)

**Student Write-up**

**Short Summary of work done during PS-II :** Handled the configuration of trade discounts of restaurants across all over India. Analyzed the performance of different campaigns and festivals all over India.

**Tool used (Development tools - H/w, S/w) :** MS Excel, SQL, DBeaver, Power BI

**Objectives of the project :** To gain understanding of how trade discounts helps in achieving Business Goals for platform as well as supply restaurant partners

**Major Learning Outcomes :** Excel proficiency, SQL, business understanding Interpersonal communication skills

**Academic courses relevant to the project :** Mathematics and Statistical Methods (MSM)

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## *PS-II Station: Capillary Technologies*

## Faculty

### Name : Uma Maheshwari Natarajan

## Student

### Name : Mokshagnya Bandaru (2014B4A30542P)

**Student Write-up**

**Short Summary of work done during PS-II :** Web Development on .NET platform. Developed two factor authentications, PCI DSS related features which included password policies, creation of user profile page, feature addition of reset password via link sent to email, manual password change after login in Control Panel of eCommerce platform of Capillary Technologies. I was also involved in live team work.

**Tool used (Development tools - H/w, S/w) :** .NET 4.5, .NET CORE 2.0, mysql, toad, postman,

**Objectives of the project :** PCI-DSS compliance

**Major Learning Outcomes :** Web development, database management, API, IIS

**Brief Description of working environment, expectations from the company :** It is important that before starting to work here at Capillary Technologies, a minimum knowledge of data structures is a must as the interns will otherwise have to google everything and not move forward as the company expects us to. Students must be able to handle pressure.

**Academic courses relevant to the project :** Data structures, Database Management Systems

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# *PS-II Station: Center for AI and Robotics, Bangalore*

## Faculty

### Name : S. Raghurama

## Student

## Name : Aayush Agarwal (20150228)

### Student Write-up

**Short Summary of work done during PS-II :** My work was to recreate my mentor, Dr S. Sahoo's , published papers on Vehicle dynamics, particularly the in the field of Design and Implementation of Heading and Steering Angle Controller for an Unmanned Ground Vehicle. There were about 5 papers that were all related to each other and more advanced than the one published before. The simulation was firstly done on MATLAB Simulink. But since the 6th and the latest paper involved step moter controller which cannot be implemented on simulink I then implemented all the papers as a MATLAB code. This project is mostly for post graduates as it requires at least one year of work to be done on it for a more practical experience. Mine was more of a Theoretical and Simulation based experience.

**Tool used (Development tools - H/w, S/w) :** MATLAB, Simulink, CarSim, CarMaker

**Objectives of the project :** Recreation of the papers for the purpose of understanding various outcomes for various instances involved in navigation of an Unmanned Ground Vehicle

**Major Learning Outcomes :** Detailed and In depth knowledge of Vehicle Dynamics with hands on experience in simulation and Paper Publication.

**Details of Papers/patents :** Dr S.Sahoo 2012, 2014, 2015, 2016 and 2018 IEEE, ASME

**Brief Description of working environment, expectations from the company :** Environment was that of a proper secretive Govt organisation. No internet access, no mobile phones or pen drives of any sort. Timings were 9-3.30 mon-fri. Stipend of Rs 12000/p.m is only given to Students with CGPA> 7. You are expected to complete the goals in the given timeframe with limited resources. The library is good. The scientists there are helpful but devoid of time. My PS instructor, Raghurama sir was the best part of this PS experience, he is your friend in every way possible. Extremely helpful and understanding.
My advice: If you want a PS to not take much of your time and you are fine with not having a stipend or your CGPA doesn't give you a good statiom but want to be in Bangalore then CAIR is for you.

**Academic courses relevant to the project :** Control Systems

# *PS-II Station: Central Leather Research Institute*

## Faculty

### Name : P R Deepa

## Student

### Name : Dhanvi Shekhar (2015A5PS0906P)

**Student Write-up**

**Short Summary of work done during PS-II :** Fabrication of keratin composite three dimensional scaffolds for soft tissue engineering purposes with biomedical applications. The scaffold could possibly promote healing in chronic wounds and help with conditions such as diabetic foot ulcer.

**Tool used (Development tools - H/w, S/w) :** HPLC, SDS-PAGE, UV-Visible Spectroscopy, CD Spectroscopy

**Objectives of the project :** To fabricate a keratin and silk fibroin composite scaffold and incorporate a pharmacologically active compound to promote wound healing.

**Major Learning Outcomes :** Analytical processes.

**Academic courses relevant to the project :** Instrumental methods of Analysis, Biological Chemistry.

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# *PS-II Station: Century Enka Ltd*

## Faculty

### Name : Santosh Khandgave

## Student

## Name : pranav modale (2015A1PS0733G)

**Student Write-up**

**Short Summary of work done during PS-II :** First few weeks we completed the industrial training of the plant. We were explained the complete processes happening in the plant and the products and outcomes of each department. Then we were assigned projects according to our interests and preferences in various departments.

**Tool used (Development tools - H/w, S/w) :** Excel

**Objectives of the project :** To study the twisting tension variation in CC machine

**Major Learning Outcomes :** Learning the Working principle of complete IY department. In depth working of cable corder.

**Brief Description of working environment, expectations from the company :** The working environment is pretty good. All the members of the plant are very helpful and will guide you whenever needed.

**Academic courses relevant to the project :** polymer technology

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# *PS-II Station: Cisco Bangalore*

# Faculty

## Name : Ms. Raja Vadhana

# Student

## Name : Prakhar Sharda (2015A3PS0274G)

**Student Write-up**

**Short Summary of work done during PS-II :** My Project was a part of Cisco's ongoing Project *** , The major task was to verify the Egress Buffers in the ASIC. To

verify the module I had to create a testing environment that can replicate all the possible corner cases where the design can fail.

**Tool used (Development tools - H/w, S/w) :** VCS (Synopsys simulation tool), Questa (Mentor Graphics simulation Tool), vim (Text Editor), DVE (Synopsys dump analysing tool), Visualizer (Mentor Graphics dumping tool), GIT (Repository Management).

**Major Programming Language :** System Verilog (Creating Testing Environment), Perl (For Data Extraction and Analysis)

**Objectives of the project :** Verification of Egress buffer

**Major Learning Outcomes :**

1) Environment Development In System Verilog
2) Design Flow of an ASIC (Application Specific Integrated Circuit)
3) Scripting and Data extraction using Perl
4) Different Verification Methodologies and tools used at industrial level

**Brief Description of working environment, expectations from the company :** The working Environment is very good, the team members are supportive, they Encourage Discussions (ie there is no bias with interns in any manner, you can reason with any of the member irrespective of their age freely).

**Academic courses relevant to the project :** Digital Design, Microprocessors and Interfacing

## Name : Suyash Bagadia (20150255)

**Student Write-up**

**Short Summary of work done during PS-II :** Testing and verification of ASIC chips :
Created the complete testing environment in System Verilog which has the ability to replicate all the possible runtime cases according to the verification plan. The aim of the project is to test the module on each and every corner case possible which can ensure the designer that the module is robust enough to be synthesized and placed in the ASIC.

**Tool used (Development tools - H/w, S/w) :** VCS synopsis ,QUESTA mentor graphics ,DVE synopsis

**Objectives of the project :** The project's goal is to test and verify the egress buffer module from scratch ,primary purpose for verification is to detect failures so that bugs can be identified and corrected before it gets shipped to costumer. If RTL

designer makes a mistake in designing or coding, this results as a bug in the Chip. If this bug is executed, in certain situations the system will produce wrong results, causing a failure. A single mistake may result in a wide range of failure symptoms. . So we have to prepare a verification plan for Egress Buffer which is a memory block and test the module on every corner case possible

**Major Learning Outcomes :** System Verilog – HDL
UNIX commands
GVIM –Text editing
Different Simulations tools to analyse the test bench like vcs,questa,dve etc

**Brief Description of working environment, expectations from the company :** The work environment in cisco is the best that i have ever seen ,people here are very helping and motivating .The one thing that i liked here the most is the freedom of ownership of work ,even as a fresher i was assigned the same work that people with years of experience are doing .Apart from the work people here also gives equal values to cultural festivities and moral values and also *Team outings*.

**Academic courses relevant to the project :** Digital design ,microelectronics ,analog and digita vlsi design ,computer architecture

## Name : SANJANA TANKALA (2015AAPS0265H)

### Student Write-up

**Short Summary of work done during PS-II :** Parking lot detection with OpenCV: Built a system which aids riders/drivers to seamlessly park their cars in huge parking lots by following the directions shown to empty parking lots. In the back end directions are driven by OpenCV, MQTT broker and Cisco EFM (Kinetic Edge and Fog Module).
Aironet Developer Program Hardware Development Kit Sensor Integration with Raspberry Pi: The project utilizes an AP3800 with the ADP Hardware Development Kit. A Raspberry Pi is used to read the values from the temperature sensor on board the HDK. The Raspberry Pi is configured to run InfluxDB and Grafana for visualizing the temperature and humidity data via web browser.

**Tool used (Development tools - H/w, S/w) :** Python, EFM, Raspberry Pi, Bash Scripting

**Objectives of the project :** Learn and appreciate end-end product dev

**Major Learning Outcomes :** got practical exposure to various topics taught as theory(ML, Networking, etc.).

**Brief Description of working environment, expectations from the**

**company :** We are a part of ThingQbator team of Cisco and hence had a lot of exposure to high end technologies. We worked in the lab and even though there were plenty of interesting things to do, there isn't much guidance from the mentors. However, this taught us how to tackle problems on our own and built our team work skills.

**Academic courses relevant to the project :** Communication Networks, Machine Learning, Programming

## Name : Naga Sri Harsha Vadrevu (2015A7PS0004H)

### Student Write-up

**Short Summary of work done during PS-II :** The Bird's Eye project revolutionizes the way in which House Keeping Services work. Companies can reduce costs by effective and less housekeeping usage. Using this project will increase accountability because there will always be a person to whom a request is sent. These Housekeeping services can be monitored using a central fog directory giving full control and monitoring capability to the management. The Indoor SLAM Project can help individuals or companies to effectively place their switches/routers to achieve uniform WiFi signal strength in their homes or workplaces. It can effectively draw a floor map and remotely monitor WiFi signal strengths of a building.

**Tool used (Development tools - H/w, S/w) :** EFM, Python, Arduino IDE, Android, Ubuntu

**Objectives of the project :** Bird's Eye, SLAM autonomous robot

**Major Learning Outcomes :** IoT

**Brief Description of working environment, expectations from the company :** Work place is good. We didn't have a lot of resources. We didn't have a mentor during this internship. Having a mentor would have been better.

## Name : Naved Nagi (2015A7PS0002P)

### Student Write-up

**Short Summary of work done during PS-II :** Project 1 - The project is to develop a Serial Data ingesting system which can be uploaded as a DS Link on the Cisco Propriety Software - EFM (Edge and Fog Module). This is then to be extended to integrate temperature and humidity sensors and the IR829 router and Cisco Servers. Sensors will be integrated with an Arduino Uno board and will send data serially to the IR829 (Fog node) which will perform some form of data aggregation

and send the rest up to the Server. The setup can be then used in industries to remotely control prevalent conditions.
Project 2 - This project is to develop an application which runs a Neural Network on Raspberry Pi (Edge). This Pi will be used along with a camera to keep count of the number of people in the thingQbator Lab. A Raspberry Pi by itself is not capable of running full scale Object Detection Algorithm by itself. Hence a VPU co – processor, the Intel Movidius is used along with the Pi. The code uses a compact version of the common CNN, mobilenetSSD as a neural net.

**Tool used (Development tools - H/w, S/w) :** Python, EFM, Raspberry Pi, Bash Scripting

**Objectives of the project :** Learnt and appreciate end-end Product development

**Major Learning Outcomes :** Got practical exposure to various topics taught as theory (ML, Networking, etc.). Learnt how to integrate software with hardware.

**Brief Description of working environment, expectations from the company :** We were part of the thingQbator team of Cisco and hence had a lot of exposure to High end technologies. We worked in the lab and even though there were plenty of interesting things to do, there isn't really much guidance from the mentors. However, this actually taught us how to tackle problems on our own and built our team work skills.

**Academic courses relevant to the project :** Computer Networks, Machine Learning, Programming

## Name : ANJAN DAS (2015A7PS0150P)

### Student Write-up

**Short Summary of work done during PS-II :** 1. Developed a dApp based on Ethereum TestRPC which creates and manages Identity of various entities which transact amongst each other in a network.
2. Developed a People Counter application based on Machine Learning which takes live feed from Cisco Surveillance Camera and detects the number of people present in a room using a cloud-based high-performance Nvidia Tesla GPU.

**Tool used (Development tools - H/w, S/w) :** 1. Ubuntu VM, Ganache-cli, Truffle, HTML, CSS, BootStrap, JavaScript, Node.js, web3.js, Solidity
2. Ubuntu VM, Cisco Surveillance Camera CIVS-IPC 6500 PD, Cloud-based Nvidia Tesla GPU, Cisco EFM Server, Python 3, imutils, dlib, Numpy

**Objectives of the project :** 1. To develop a Distributed Identity Platform for Customers, Organizations and Things using Blockchain Technology 2. To report the number of people in the thingQbator Lab over MQTT and present it in the Cisco EFM

Dashboard

**Major Learning Outcomes :** 1. Blockchain Technolgy 2. dApp Development 3. Machine Learning/Object Detection/Object Tracking 4. Cisco EFM Dashboard Designing

**Details of Papers/patents :** Libraries used were Open Source

**Brief Description of working environment, expectations from the company :** Work environment at thingQbator Cisco is good. You have the flexibility to define your project goals on your own. People are friendly and helpful. Overall, you can expect a good and smooth internship experience from the company.

**Academic courses relevant to the project :** Computer Networking(somewhat) , Machine Learning

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# *PS-II Station: CloudCherry Analytics Pvt. Ltd.*

## Faculty

### Name : Ms. Akaksha Bhardwaj

## Student

### Name : KAPIL KALRA (2014B5A30707G)

**Student Write-up**

**Short Summary of work done during PS-II :** I was allotted two projects during my PS II duration. The first project required me to build a cross-platform mobile app that could perform facial recognition using just 2D pictures captured by the device. I was instructed to use only OpenCV and TensorFlow to achieve this as they are open-source libraries/framework. As a result I picked up learning about CNN and Deep Learning along with basics of major ML algorithms. This project was more research oriented. The second project required me to build production quality code to perform one-sample T-Tests in C#. As a result this project revolved around optimizing the run-time, time complexity along with the appropriate use of Data Structures. This project was software dev oriented.

**Tool used (Development tools - H/w, S/w) :** Python, OpenCV, TensorFlow, Keras, C#, Visual Studio, Restful Services

**Objectives of the project :** 1) Build a cross-platform face recognition mobile app that runs entirely on the client side. 2) Develop Production Quality code to run t-tests on the given dataset

**Major Learning Outcomes :** 1) ML, AI, DeepLearning, Neural Networks 2) C#, APIs

**Brief Description of working environment, expectations from the company :** The working environment is great. Each intern was assigned a mentor to guide him/her throughout their project. We didn't have any fixed timings that we had to follow but were given the liberty to choose our own and entrusted with responsibility of completing our tasks given to us in the stipulated time. Maintaining a work-life balance is encouraged over here. We had occasional team lunches and office activities.

**Academic courses relevant to the project :** DSA, ML, Neural Networks, Prob Stats

### Name : Saketh Chintapalli (2015AAPS0970H)

**Student Write-up**

**Tool used (Development tools - H/w, S/w) :** Python, Sci-kit learn, OpenCV, C#, .NET

**Objectives of the project :** Emotion Recognition Algorithm, API Development

**Major Learning Outcomes :** Machine Learning, Full Stack Web Development

**Academic courses relevant to the project :** Machine Learning, OOP, DSA

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## *PS-II Station: Cohesity Storage Solutions India Pvt. Ltd. , Bangalore*

## Faculty

### Name : Mr. Chandra Shekar R K

## Student

### Name : Piyush Sharma (2014B3A70938H)

**Student Write-up**

**Short Summary of work done during PS-II :** Worked in the manageability team which is responsible for enabling the various components in the software stack to communicate with each other. I worked on mainly three different projects over the course of 5 months. First one was notifications for long standing user initiated tasks. The second one concerned with alerting system for tenants on a multi-tenant cluster which formed a part of the ongoing multitenancy project. The third one was internationalising alert messages and alert email notifications starting with the Japanese language. All these projects were concerned with mainline product development.

**Tool used (Development tools - H/w, S/w) :** IDEs, Open Source Software, Hypervisors

**Objectives of the project :** Mainline Product Development

**Major Learning Outcomes :** Agile Software Development; Distributed software design and development

**Brief Description of working environment, expectations from the company :** Working environment is extremely developer friendly.

**Academic courses relevant to the project :** Design and Analysis of Algorithms, Operating Systems, Networks, Distributed Systems

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# *PS-II Station: Credit Risk DBOI*

## Faculty

### Name : Prof. Krishnamurthy Bindumadhavan

## Student

## Name : Nimish Jain (2015B3PS0507G)

**Student Write-up**

**Short Summary of work done during PS-II :** Credit rating analysis for counterparties in emerging markets. Spreading of financials is done once we receive the annual and interim financial statements for both public and private counterparties. Analysis of subsidiaries is done based on their relevance, limits assigned to them or if DB has exposure. Team also looks at any rating events such as mergers and acquisitions, share price movement, management change etc. Prepared a presentation on Trade war which was then a topic of current relevance. Also did Credit Ratings for different countries.

**Tool used (Development tools - H/w, S/w) :** BARS, Excel, Internal Softwares

**Objectives of the project :** To prepare Credit Ratings Report

**Major Learning Outcomes :** Financial Analysis, knowledge about world economy and financial markets

**Brief Description of working environment, expectations from the company :** Being a global bank DBOI works in coordination with its US and German counterparts, Reports are sent to DB credit officers worldwide. Team mates are cooperative and ready to help you out.

**Academic courses relevant to the project :** FOFA, Fin-man

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# *PS-II Station: Credit Suisse*

## Faculty

### Name : Dr. B V prasad

## Student

### Name : Radhika Soni (2015A5PS0912P)

## Student Write-up

**Short Summary of work done during PS-II :** I was allotted Stock Loan team which is an integral part of Prime Services division. Securities lending or stock lending refers to the lending of securities by one party to another. The terms of the loan will be governed by a "Securities Lending Agreement which requires that the borrower provides the lender with collateral, in the form of cash or non-cash securities, of value equal to or greater than the loaned securities plus agreed upon margin. Key lenders of securities include mutual funds, insurance companies, pension plans and other large investment portfolios. Most securities loans are collateralized, either with other securities or with cash deposits. Where lenders take securities as collateral, they are paid a fee by the borrower. By contrast, where they are given cash as collateral, they pay the borrower interest but at a rate (the rebate rate) that is lower than market rates, so that they can reinvest the cash and make a return. Pricing is negotiated between the parties and would typically take into account factors such as supply and demand for the particular securities, collateral flexibility, the size of any manufactured dividend and the likelihood of the lender recalling the securities early. As well as securities lending, sale and repurchase (repo) and buy-sell back transactions are used for the temporary transfer of securities against cash. My key responsibilities include: Monitoring PB Short Sales and Short Interest to assist traders in devising and optimizing trading strategies. Run various analytical process over varied securities and markets to identify possible Short Squeezes and hence inform the traders regarding the same. Inventory optimization to reduce borrowing cost by flipping the inventory internally across various available books and desk against borrowing it from the street and hence directly improving the PnL for the team. Analyzing and identifying the refinancing opportunity on various securities and hence reducing the borrowing cost by informing the traders of the same and thus asking them to modify the trades. Generating commentary on various markets to give overview of market movements, top securities, market movers across sectors in different regions namely APAC, EMEA and Americas. Generating Analytical reports on current inventory, current fee structure and loan/borrow trade values on a client basis/ entity basis to give overview as to where the business is moving.

**Tool used (Development tools - H/w, S/w) :** Excel, Tableau

**Objectives of the project :** 1. Forecasting of Stock loan( Shorts Pnl) and Debit Pnl on the basis of internal and external factors. 2. Creating a dashboard on Tableau to represent the top Client movers in the day on day change of Pnl, Role, chargeable balances.

**Major Learning Outcomes :** I got a great exposure of the markets sector. Apart from understanding excel, I learnt about Tableau application. I got to know about the functioning of Stock loan business, short selling and short squeeze. I also learnt about trade life cycle, different types of securities lending transaction, securities classification, quantification of risk.

**Brief Description of working environment, expectations from the**

**company :** Working environment depends on the team. Don't keep too high expectations from this profile. The work is mostly reporting based. My team members weren't really good with me. They expect interns to work for 12 hrs daily without any leave. PPO chances depends on the team you are allotted and the head count of the floor. Mostly, PPO chances are very low for a single degree student in 1st sem, unless you are an early grad.Overall, you will get great professional people to network with. You will get to learn being punctual and sincere towards work.

**Academic courses relevant to the project :** DRM, SAPM, FRAM

## Name : Shalini Joshi (20150768)

### Student Write-up

**Short Summary of work done during PS-II :** Credit Risk is the potential risk that a bank borrower or a counterparty will fail to meet its obligations according to the terms set prior to the transaction. My work dealt with the exposure movement analysis for OTC products such as swaps, US Treasury Bills, Swaptions and FRA . As a part of my internship at Credit Suisse I had to Perform weekly/monthly /daily exposure movement analysis for the counterparties received according to their movement in RWA. I had to ensure that all post-calculation data is received on time and meets acceptable data quality standards and that all exceptions in the reports are addressed and managed.

**Tool used (Development tools - H/w, S/w) :** MSSL, MS Excel

**Objectives of the project :** To anlayse the movement in exposure for OTC products

**Major Learning Outcomes :** Credit Suisse has helped me grow in my own eyes as a person. I have improved on my personal skills, work ethic, while also gaining a first hand experience of the banking domain.I learnt how investment banks work and how these trade deals are looked at on a daily basis to ensure that the bank faces no risk of bankruptcy . I also gained an in depth view of the models used to calculate exposure and validating the Mark-to-market,-collateral and notional for various derivatives.

**Brief Description of working environment, expectations from the company :** Credit Suisse has helped me grow in my own eyes as a person. I have improved on my personal skills, work ethic, while also gaining a first hand experience of the banking domain.
The first thing, I would like to mention is the work culture, everyone at Credit Suisse is very helpful and supportive. They are with you at every step and try their best to teach you all that you wish to.
Apart from learning at work, Credit Suisse also organised various interesting activities for us. They organised speaker sessions for us, sessions to interact with the

HR representatives and learn more about one another, volunteering activities etc. Through the intern connect session we also got to meet various directors of different departments on a first hand basis. This helped us connect with them and understand the workings of various departments. At the volunteering session we helped paint the classroom of students form underprivileged backgrounds. This instilled us with motivation and enthusiasm towards contributing in the society .

**Academic courses relevant to the project :** FRAM, DRM

## Name : Suyash Sharma (2015A5PS090P)

### Student Write-up

**Short Summary of work done during PS-II :** I ensured accuracy of risk positions and sensitivities of portfolios through position and trade move analysis, impact of market moves on trades, impact of product behavior like equities, bonds, options and swaps on sensitivities like delta, gamma, credit spread, interest, and foreign exchange rate movements among other approaches. I was involved in the extraction of data and sanity checks using queries on SQL. I calculated impact for the trades based on baseline mark to market value and scenario value. I validate it with the help of sensitivity based calculator and Scenario Manager with underlying factors. I also attend to ad-hoc queries for in-depth analysis of trade moves using different in built risk system and software of Credit Suisse.

**Tool used (Development tools - H/w, S/w) : Microsoft** Excel, SQL, R Studio

**Objectives of the project :** Internal Credit Limit Monitoring and Regulatory Reporting

**Major Learning Outcomes :** Advance Excel, R Programming, Credit Risk Analysis, Stakeholder Management

**Brief Description of working environment, expectations from the company :** As a first major Internship experience, Credit Suisse has a lot to offer to learn and showcase one's skills. The company allows an individual to grow professionally and personally. It gives a lot of exposure in terms of accountability and stakeholder management. It also depends on one's will to learn and contribute to the firm within the short span and also the kind of project and team that you get to work along. The working environment is very healthy and team members are very cooperative.

**Academic courses relevant to the project :** Derivatives and Risk Management, Financial Risk Analysis and Management, Security Analysis and Portfolio Management

## Name : Charul Passey (2015A1PS0774P)

**Student Write-up**

**Short Summary of work done during PS-II :** Division: RFDAR (Risk and Finance Data Analytics and Reporting). The project was based on regulatory reporting and Basel measurement, with RWA calculation specifically. This required an in depth knowledge of the varied factors contributing to Capital Adequacy Ratio calculations such as trade maturity, counterparty rating, AVCM (Asset Value Correlation Multiplier) and transaction rating. Any of the exceptions captured in the above data were resolved on a need basis and in conjunction with Credit Risk Management, Product Control and respective source data teams (for loan products, OTC derivatives, etc.). All of the above is a part of Risk Analysis ad Data Management.

**Tool used (Development tools - H/w, S/w) :** R programming, PL-SQL, MS Excel, VBA

**Objectives of the project :** Daily/Weekly/Monthly exception reports to be published with Basel Measurement And Regulatory Reporting

**Major Learning Outcomes :** Firm specific technical skills
Soft skills
Regulatory reporting theories and applications
Capital adequacy calculations

**Brief Description of working environment, expectations from the company :** Can't complain. Work culture and work-life balance is amongst the best you could find in a PS station, specifically for interns. Although you might have to struggle a while to get work. Better to not hesitate and not wait for colleagues to come to you. Grasp as much work as early as you can, and keep in contact with your stakeholder teams. Networking is the key.

**Academic courses relevant to the project :** Financial Risk Analytics and Management, Derivatives and Risk Management, Security Analysis and Portfolio Management

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# *PS-II Station: Credit Suisse, Mumbai*

## Faculty

## Name : Dr. B.V. Prasad

# Student

## Name : Shreyas Hejib

### Student Write-up

**Short Summary of work done during PS-II :** I am a member of the Delta One team. The mandate of my team is to provide ease of access and execution to our clients in markets which they are interested to invest in. We offer index returns through swaps using a variety of hedges through futures, ETFs and stocks. Since an index (eg. S&P 500) is dynamic in nature with its composition changing over the course of time as per a fixed methodology, my task was to understand how a change would impact the current composition of an index and implement the new composition by trading in the market. Also, forecasting the changes before they occur provides an opportunity to play the rebalance early and create additional profit (or loss). This process of forecasting involves deep understanding of various index methodologies along with historical, fundamental and technical analysis of the securities being added or deleted. Also, when trading in index futures, calculation of their fair value is pivotal. This involves forecasting dividends of the firms in a particular index on which the future is created. The aim is to predict the amount of free cash flow a firm would generate and what part of it would be allocated as returns to shareholders in the form of dividends using historical patterns, management guidance and fundamental analysis. The closer our analysis is to the actual dividend paid, the more accurate our fair value calculation will be and thus providing us profitable positions.

**Tool used (Development tools - H/w, S/w) :** MS Excel, VBA, Bloomberg Terminal, Thomson Reuters

**Objectives of the project :** 1. Understanding index methodologies and rebalancing indices. 2. Forecasting dividends of US firms accurately to achieve fair valuation of futures.

**Major Learning Outcomes :** 1. In-depth understanding of index construction methodologies and treatment of various corporate actions. 2. Becoming skilled at using fundamental analysis. 3. Exposure to trading and hedging strategies.

**Academic courses relevant to the project :** Business Analysis and Valuation, Derivatives and Risk Management, Financial Management

## Name : Sri Harsha Panda (2014B2A10618P)

## Student Write-up

**Short Summary of work done during PS-II :** Majority of the work involved assisting the ICRA team in quarterly submission and automation of the process involved. The first couple of months were spent in understanding the functionalities of the automation tool. Simultaneously, the quarterly submissions were worked upon. A better and in-depth understanding of risk would have made the experience more enriching.

**Tool used (Development tools - H/w, S/w) :** Excel

**Objectives of the project :** To understand the processes of Integrated Capital Risk Analysis(ICRA) and Building Block Analysis(BBA) submission to Swiss regulator, FINMA

**Major Learning Outcomes :** Understanding procedures and needs of reporting

**Brief Description of working environment, expectations from the company :** The work culture is great! Teammates and colleagues are friendly and willing to help. The working hours are also flexible , with strong emphasis on work-life balance.

**Academic courses relevant to the project :** Derivatives & Risk Management

## Name : Tarun Kataria (2015B3TS0966P)

## Student Write-up

**Short Summary of work done during PS-II :** In banking and finance, there are some regulatory requirements which are being put by different regulators of different regions and countries to carry out business and operations in that particular region and country. CCAR is also a requirement which needs to be carried out by Financial Institutions like Investment Banks annually. A part of CCAR cycle is that for Corporates and Financial Institutions' stressed period Probability of Defaults are needed to projected for different scenarios (macroeconomic conditions).

The outputs of the model are monitored and back tested for a particular periods. It is very crucial for a model to pass all the statistical tests and back-testing checks.

Model Monitoring has four main components. The components being:
- Back testing
- Robustness
- Sensitivity to Key Model Assumptions
- Representativeness

The model determines the extent up to which Credit Suisse can hold up the capital requirements to absorb the economic shocks and lot of defaults happen. The PDs, upgrade rate, downgrade rate, migrations etc. gives the idea about the performance of the counter-parties and, hence the requirement of the bank accordingly.

Before going further into the monitoring, first it is very important to give a glance about the model itself. It is very important to understand the model to do its monitoring and then do some methodological experiments. The basic understanding of the model is required to do the mentioned above. The essence of the model is the one parameter representation of credit ratings transition matrices.

**Tool used (Development tools - H/w, S/w) :** R Studio, MS Excel

**Objectives of the project :** Statistical Monitoring & Methodological Analysis of Probability of Defaults Model

**Major Learning Outcomes :** Mathematical & Statistical Modelling

**Academic courses relevant to the project :** Prob & Stats, Econometrics

## Name : Shivani Neema (2015A8PS0480G)

**Student Write-up**

**Tool used (Development tools - H/w, S/w) :** On the analytical side of skills, Microsoft Excel, MySql and R Programming helps you a lot, particularly a good command on the MS Excel.

**Objectives of the project :** I learnt that Economic Risk Capital is very important, especially in Credit Suisse. Many banks do not consider it but it has a very significance role.

**Major Learning Outcomes :** As a part of my learnings at Credit Suisse, I gained new appreciation for teamwork and collaboration. I have improved on my personal skills, work ethic, and leadership spirit while also gaining a first hand experience in the banking domain. I learnt a lot about punctuality, sincerity and dedication towards work. Collaborating with so many different teams was a fun and challenging experience.
I learnt how investment banks work and how the trade deals are looked at on a daily basis to ensure that the bank faces no risk of bankruptcy. I gained an in-depth view of the models used to calculate Economic Risk Capital, also the systems used to calculate it such as Mars and Adapt.

**Academic courses relevant to the project :** Financial Management

## Name : Mayur Bajaj (2014B2A40971H)

### Student Write-up

**Short Summary of work done during PS-II :** Global Markets Controls is a support function that has been devised in the organisation to overlook day to day operations of the business. After the 2008 financial crisis, BASEL committee of Banking devised the framework for the In-house assessment of the processes and it was made compulsory for he firms to conduct in-house assessment for their process. This assessment are shared with the regulators quarterly and are reviewed by the senior managers/Chief Operating Officers (COOs) in different frequency intervals in the forums like BRCMs(Business risk controls meetings) and GMCC (Global Market Control Committee). The projects in GM Controls revolve around the Reporting tools and Dashboards to ensure the business is compliant and also informed of the errors occurring during the duration of assessment. The Key Risk Indicators (KRI) have been defined on the basis of the process to monitor the risk occurring due to People, Process or System. These KRI are also called Metrics for daily Processing. In Governance & Reporting, These KRI's are reported in various platforms depending on the Risk of the Business. The details of few key projects are as follow:
1) Governance MI – A group of 36 metrics have been determined and agreed by the businesses to reflect the Operation Risk of the Business. These metrics are divided into 4 different pillars- Conduct, Operations, Behaviour and Control Environment. Governance MI is reported monthly. The data for this MI is sourced from various sources. It is then analysed and Reconciled into a dashboard which give a complete view of the Metrics for particular Business for the Month of analysis. This MI is reflected in all the Business specific BRCMs and the group level GMCC. Governance MI gives the Month-on-Month view for the metrics and the RAG status for the same, Re for the Breach, Amber for nearing Breach and Green for being in control. These RAG is determined based on pre-defined thresholds which are changed half Yearly on 12 months moving average.

2) APAC DASHBOARD – It is a group specific dashboard where all the Metrics associated with the Asia Pacific group are reported in single window. This is an extensive dashboard consisting of 142 BRCM Metrics and 111 ORCC metrics. This gives a trend view for all the metrics for all the APAC business, being able to view three months view in the dashboard. Also giving the RAG for the metrics similar to Governance MI.

3) BRCMs and GMCC – The performance of a business is analysed and monitored monthly, and discussed in these monthly meetings. These Business Risk Controls meetings are organised by the Business COOs to discuss business performance. All the aspects of business are discussed in these meetings to insure that the business is running smooth, and to rectify all misdoings that has happened/ might occur.

**Tool used (Development tools - H/w, S/w) :** Microsoft Excel

**Objectives of the project :** Monthly assessment and Report generation for Business Operation Risk

**Major Learning Outcomes :** Networking is very important and Importance of Operation Risk

**Academic courses relevant to the project :** Quality Control Assurance & Reliability

## Name : Abhinash Kashyap Borah (2014B3A80546G)

### Student Write-up

**Short Summary of work done during PS-II :** I competed 3 major assignments and also handled BAU tasks of the team.
The objective of the first assignment was to automate the Divisional and Legal Entity split of Potential Exposure (PE) Impact due to Overrides. (The overrides are a list of complex trades of certain counter-parties whose exposure profiles through the usual calculation procedure do not reflect the true economic value; hence manual calculation is done). This is achieved by splitting the PE by taking into consideration the Mark to Market (MtM) and Standardised Approach - Counterparty Credit Risk (SA-CCR) Potential Future Exposure (PFE) numbers. The business outcome of this assignment was that it saved around 6 business hours monthly. Also the control checks put in place ensured that operational errors are registered and rectified.

The second assignment involved automating the exposure calculation process involved in maintaining a specific override. The process involved calculation of Exposure Exposure (EE) and Potential Exposure (PE) by the shortcut formula. It also involves Calibration of Inflation, Interest Rate and Mortality Rate for PE and EE VaR calculation which is used in PE and EE calculation. Additionally sourcing of Inflation and Interest Rate sensitivities for PE and EE VaR calculation was also done.

The third assignment involved building a tool for control check of PE and EE profiles for Overrides. It basically compares the PE and EE profiles of the overridden counterparties of two environments to register any mismatch and to ensure whether they are due to overriding of profiles by override owner or due to improper flow of PE and EE profiles.
profile.

**Tool used (Development tools - H/w, S/w) :** Excel, VBA, SQL, Internal Software's/Applications.

**Objectives of the project :** Exposure Calculation Methodology

**Major Learning Outcomes :** The BAU of my team was to generate Potential Exposure, PE and Expected Exposure, EE numbers, both unstressed and stressed for the front office (FO). This enhanced my knowledge of trades (Swaps, Options, Forwards, Swaptions, Caps/Floors). Also working on the automation assignments enhanced my knowledge of VBA, Excel and many internal softwares/applications.

**Brief Description of working environment, expectations from the company :** The team members were quite helpful and provided sufficient guidance. The work environment is quite good. I was treated as an integral part of the team and included in the BAU tasks and other assignments of the team.

It gives you a feel of the corporate world and culture which I can assure you is very different from what we are accustomed to, in our college. Also interacting with seniors of the team, especially senior BITSians, helps a lot in understanding how to handle this change and not be overwhelmed by it.
There were guest lectures for us interns by experienced bankers in Credit Suisse in high positions from across the globe which were very inspiring and enlightening.

**Academic courses relevant to the project :** Basic knowledge of Finance like Derivatives, Risks which are covered in DRM and FRAM respectively.

## Name : Parth Simwal (20140656)

**Student Write-up**

**Short Summary of work done during PS-II :** The work was primarily based on analysis of operational risk in the bank under various themes and using various metrics. After analysis part, reporting is done to appropriate governance forums which includes senior management of the bank. These reports contain different themes of the operational risk of the bank and focusses on various processes which are monitered within the bank.

**Tool used (Development tools - H/w, S/w) :** Microsoft Excel, VBA

**Objectives of the project :** Automation of existing processes and analysis & reporting of operational risks from Controls perspective.

**Major Learning Outcomes :** Working at Credit Suisse gave me the required exposure to the banking industry that was necessary along with the practical knowledge of the processes and workings inside the bank. Along with learning the interconnection between various sections of bank that work hand-in-hand and the interdependency of various departments and the various support functions that are necessary to make sure the bank is functioning properly. Along with the financial knowledge, I have also gained some experience with Microsoft Excel and VBA. Almost all the work in the department is done on Microsoft Excel and VBA is necessary for automation purposes of the processes that are generally carried out in Microsoft Excel.

**Brief Description of working environment, expectations from the company :** The working environment in the department Global Market Controls is very relaxed, flexible and learning friendly. Being an engineering graduates, the

department provides a very good exposure to the banking industry. The processes carried out in the department are related to Operational Risk domain. The working hours are also flexible and overall environment in the department is very supportive and cooperative.

**Academic courses relevant to the project :** FOFA, FM, SAPM

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# *PS-II Station: Credit Suisse, Product Control, Pune*

## Faculty

### Name : Dr. B V Prasad

## Student

### Name : Geethika Kalvapalli (20150487)

**Student Write-up**

**Short Summary of work done during PS-II :** Using recovery rates from two sources, Independent Price Verification is done for Credit Default Swaps. My work involves obtaining the recovery rates from two sources namely Front Office and Benchmark source. Impact is calculated as the product of the difference of the recovery rates from the two sources and delta. Delta is change in PV for 1% change in underlying. Impact is required to be adjusted to books and records for the month being tested. After the Impacts are generated, check for book completeness is done and reviewed by the manager. Upon resolving all the tweaks, results are sent to the Singapore team.

**Tool used (Development tools - H/w, S/w) :** Microsoft Excel

**Objectives of the project :** Automation of data extraction to the tool using Excel VBA.

**Major Learning Outcomes :** Credit Default Swaps, different risks associated with them.
Microsoft Excel and VBA.

**Brief Description of working environment, expectations from the**

**company :** Every new employee / intern is assigned a buddy from the team to help him in getting acquainted to the work environment and team. This is really helpful, especially for those working for the first time. Every member in the team is supportive. One is expected to have basic Excel knowledge and grasp the work as fast as possible to meet deadlines with ease. Every team member including interns is expected to stay over time when work load is more.

**Academic courses relevant to the project :** Derivatives and Risk Management

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## *PS-II Station: Credit Suisse, Risk and Finance Data Analytics and Reporting*

## Faculty

### Name : Dr. B V Prasad

## Student

### Name : Anay Joshi (277)

**Student Write-up**

**Short Summary of work done during PS-II :** Preparing reports to be sent directly to the senior management, analyzing day on fat changes and providing commentaries, otpimizing the report

**Tool used (Development tools - H/w, S/w) :** Excel and propriety company software

**Objectives of the project :** Daily risk reporting for Asia Pacific

**Major Learning Outcomes :** Working against deadlines, teamwork, understanding financial terms

**Brief Description of working environment, expectations from the company :** Very nice. Excellent working hours. Everyone treats you like an employee.

**Academic courses relevant to the project :** Derivatives and risk management

## *PS-II Station: CSIR- Central Leather Research Institute, Chennai*

### Faculty

**Name : P R Deepa**

### Student

**Name : Srishti Sharma (2015A5PS0952P)**

**Student Write-up**

**Tool used (Development tools - H/w, S/w) :** UV Spectrophotometer, Homogenizer

**Objectives of the project :** To prepare a collagen based scaffold for wound healing

**Major Learning Outcomes :** Hands on experience on lab equipment

## *PS-II Station: DataM Intelligence 4market research*

### Faculty

**Name : Dr. Anjani Srikanth Koka**

### Student

**Name : Vyankatesh Marathe**

## Student Write-up

**Short Summary of work done during PS-II :** I worked at DataMIntelligence which is a market research company as a research associate. We prepare reports on various niche market and estimate market size of those markets and their sub-segments. We also do the detailed analysis of market segments and geographical analysis. We study the competitive scenario of the market and analyse competitive strategies adopted by major companies in the market.

**Tool used (Development tools - H/w, S/w) :** MS Office, Factiva, Statista

**Objectives of the project :** Detailed Market Research

**Major Learning Outcomes :** Improved understanding of various intricacies regarding doing market research.

**Brief Description of working environment, expectations from the company :** Friendly working environment. Not overly hierarchical, A Startup company

## Name : JAYANT AGARWAL (2015D2TS0993P)

## Student Write-up

**Short Summary of work done during PS-II :** I worked in the Sales & Marketing team and was responsible for generating the revenue with lead generation from outbound marketing, e-mail marketing and social media marketing.

**Tool used (Development tools - H/w, S/w) :** LinkedIn sales navigator, Mail Tester.com, G-Mass, Goggle Adwords

**Objectives of the project :** Increase the revenue of the organization

**Major Learning Outcomes :** Digital marketing, Outbound marketing, Inbound marketing, E-mail marketing, Social media marketing

**Brief Description of working environment, expectations from the company :** It`s a very young startup and allows you to harness your skills to brainstorm. The working environment is very friendly and helpful in all manners.

**Academic courses relevant to the project :** Principle of Management, Market research, Print & Audio Visual Advertising, Creative Writing

## Name : Jayant Agarwal (2015D2PS0993P)

**Student Write-up**

**Short Summary of work done during PS-II :** I worked with Sales & Marketing team and was responsible for generating leads keeping the customer persona in view. I also handled the social media activities on LinkedIn, Twitter, and other social media channels.

**Tool used (Development tools - H/w, S/w) :** LinkedIn Sales Navigator, Hunter.io, Lead411, G-Suite

**Objectives of the project :** Pitching of market research reports across different verticals and generating the revenue with lead generation from outbound marketing, e-mail marketing & social media marketing.

**Major Learning Outcomes :** Encountered with new tools, Digital marketing, Outbound marketing, E-mail marketing, Social media marketing.

**Brief Description of working environment, expectations from the company :** The Company provided a great working environment with all the required things.

**Academic courses relevant to the project :** Principle of Management, Marketing research, Print & Audio Visual Advertising, Business Communication

## Name : Varnita yadav (2015D2TS0988P)

**Student Write-up**

**Short Summary of work done during PS-II :** lead generation on different title in 32 domain of market, social media marketing, cold calling and e-mail marketing which was part of outbound marketing.

**Tool used (Development tools - H/w, S/w) :** LinkedIn- sales navigator, lead411, mail tester, hunter, find era all used in lead generation process. Ms excel, java scripts

**Objectives of the project :** Generating Revenue with Lead Generation from the Outbound Marketing, E-mail Marketing & Social Media Marketing

**Major Learning Outcomes :** understanding of tools and types of marketing

# *PS-II Station: DBOI-Credit Risk*

## Faculty

### Name : Krishnamurthy Bindumadhavan

## Student

### Name : Darshan Nandasana (2015A2PS0764P)

**Student Write-up**

**Short Summary of work done during PS-II :** We did credit ratings for companies which we already lent money to. We need to track their cash usage annually. We kept track on major dealings company does with other companies and predict their outcomes for the company so we know if our money is used productively by them. The process of ratings starts with interpretation of financial statements and spreading it into the proprietary software as per our needs. We can compare the financials of the company with previous year financials in it which were already fed to the software in the past. Now, we need to look at the debt company holds and share of debt with DB. Keep track of repayments and liquidity needs. Then there was a specific template, guidelines and parameters to rate and write elaborately the justification and provide an outlook about the future. Rating all the parameters, system will automatically generate the final rating for the company. Parameters includes sustainability of earnings, growth of industry, working environment, country support, liquidity, cash flows, leverage metrics, management boards, transparency of reports, etc. After generating the reports, it goes for quality checks to portfolio managers, who point out errors and rectifies them with 3-4 checks and after a thorough checking, case gets approval in committee. This is annual reports but on quarterly basis, we keep track of earnings by writing risk tracker reports every quarter for each companies.

**Tool used (Development tools - H/w, S/w) :** Confidential proprietary software of Deutsche Bank

**Objectives of the project :** Credit Rating of Leveraged Structured Corporates

**Major Learning Outcomes :** Interpretation of financial statements and annual reports, Understanding Business Models of companies and the lending process of the bank.

**Brief Description of working environment, expectations from the company :** The working environment was very professional, obviously as it was a bank. Analysts, managers and other colleagues were very jolly and helpful. There were many social interacting events, parties and festive celebrations. Overall, there were very chill, mature and approachable kind of people around.

**Academic courses relevant to the project :** Funda Fin, Fin Man.

### Name : Vedant Bhardwaj (2014B3A80541G)

**Student Write-up**

**Short Summary of work done during PS-II :** Credit analysis of the counterparties of the bank

**Tool used (Development tools - H/w, S/w) :** Excel and MS word

**Objectives of the project :** To analyze the counterparty for credit risk

**Major Learning Outcomes :** Understood analysis approach used by credit analyst

**Academic courses relevant to the project :** Financial Management, Fundamental of Finance and Accounting, Derivative and Risk Management

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## *PS-II Station: DBOI, Mumbai*

## Faculty

### Name : Krishnamurthy Bindumadhavan

## Student

### Name : Aman Krishna (2013B3A10611G)

**Student Write-up**

**Short Summary of work done during PS-II :** Market Data Strategy and Analytics team, a rechristening of the former team without the “Strategy” or “Analytics”, has been formed for the major function of providing “quality” data for calculation of Value at Risk (VAR) and subsequently Economic Capital (EC).
The major functions performed by the team, include, loading data from the feeds, cleaning of the data, remediation of stale of unusual data, validation of data, release of data into production for calculation of VaR, etc. With the new team being formed, additional functions like pre-emptive analysis of data to forecast VaR blow-ups, by the use of various Volatility comparison tools are to be performed.

**Tool used (Development tools - H/w, S/w) :** Excel, Access, SQL++, Python, Matlab

**Objectives of the project :** Operations (Data Science/ ML)

**Major Learning Outcomes :** SQL++, Python application to data science

**Brief Description of working environment, expectations from the company :** Good company for beginning your career. Not a lot of growth as far as I can see in the organization. Bonuses are meager. Stipend is among the lowest of all finance PS2 stations.
But, what makes the PS2 experience great here are the people. You will have fun time with your team. Work won't be as stressful as GC or MS, but dont expect to slack. You'll learn a LOT! The company doesn't expect you to have all the skills when you join in; rather you are trained and treated as one of their own. You will be given responsibilities far greater than you'd have experienced in any internship. Expect a solid 9 hours working.
Cheers! Hope you come to DB.

**Academic courses relevant to the project :** Derivatives and Risk Management, SAPM, Finman, Microeconomics

## Name : Sneha Shetgar (2015A1PS0685H)

**Student Write-up**

**Short Summary of work done during PS-II :** Data entry on financial statements, preparation of risk tracker , and finally rating cases .

**Tool used (Development tools - H/w, S/w) :** Excel

**Objectives of the project :** Rating of companies

**Major Learning Outcomes :** How ratings are important for a bank to calculate the probability of default.

**Brief Description of working environment, expectations from the company :** Decent work environment, expect you to mingle extremely well.

**Academic courses relevant to the project :** Fundamentals of finance and accounting, business analysis and valuation.

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## *PS-II Station: Dell R&D*

## Faculty

### Name : Vishwanathan Hariharan

## Student

### Name : Tusharkanth Karlapudi

**Student Write-up**

**Tool used (Development tools - H/w, S/w) :** PuTTy for SSH, C language coding, OS, Threads, JIRA, FFMPEG, Servers

**Objectives of the project :** Create a library for capturing either a screenshot or a video of the server system and convert it to formats depending on user's request.

**Major Learning Outcomes :** System design, OS coding, Project management, Library and API creation, Video conversion process, Firmware development, Servers, Project Optimization, Testing.

**Brief Description of working environment, expectations from the company :** The work environment is very healthy with people around you being very friendly and ready to help. Even if you are an intern, you are given equal importance and included in the office activities. There's a lot to learn and with the employees here ready to help you with the learning process, it will be a great experience. An ideal place for someone who's interested in software engineering and firmware development.

**Academic courses relevant to the project :** C programming, OS, Software Engineering

## Name : Venkateshwaran (2015A7PS0122P)

**Student Write-up**

**Short Summary of work done during PS-II :** Vulnerability testing iDrac to check for any security problems found in the web application part of the application

**Tool used (Development tools - H/w, S/w) :** Kali and inbuilt app, hyper-v, python and packages

**Objectives of the project :** Automate vulnerability testing for iDRAC

**Major Learning Outcomes :** Python, web applications, bashing, networks

**Academic courses relevant to the project :** Networking

## Name : Amreen Shaikh

**Student Write-up**

**Short Summary of work done during PS-II :** My project is PLDM compliance test suite. There is a protocol named PLDM. My work involved developing command line interface tool.

**Tool used (Development tools - H/w, S/w) :** C language. Linux. Server.

**Objectives of the project :** Aim of the project is to check the compatibility of FPGA chip with PLDM protocol

**Major Learning Outcomes :** I learnt about PLDM, CLI development.

**Brief Description of working environment, expectations from the company :** Work environment is relaxed. Managers maintain a cordial environment. Mentors are helpful in technical assistance.

**Academic courses relevant to the project :** C.

## *PS-II Station: Deutsche Bank*

## Faculty

### Name : Krishnamurthy Bindumadhavan

## Student

### Name : Palak (2015A1PS0604P)

**Student Write-up**

**Short Summary of work done during PS-II :** Rating analysis of the counter parties on different templates- Sub sovereign, Corporate, Banks.

**Tool used (Development tools - H/w, S/w) :** MS Excel

**Objectives of the project :** Rating the counter parties on a 12 grade scale

**Major Learning Outcomes :** Analysing the entities on a macro and micro level

**Brief Description of working environment, expectations from the company :** Work culture is good.

**Academic courses relevant to the project :** Fundamentals of Finance & Accounting, Derivatives & Risk Management, Financial Management

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## *PS-II Station: DEVELOPMENT CONSULTANTS PRIVATE LIMITED*

## Faculty

### Name : M.K.HAMIRWASIA

## Student

## Name : SACHIN GADEKAR (2014B4A20758P)

**Student Write-up**

**Short Summary of work done during PS-II :** We tried to bridge the distance between traditional classroom learning and practical field application by presenting the nuances of the theory in conjunction with the technological aid employed in the industry. The assumptions and limitations of rational theoretical methods have been highlighted and their practical implications enumerated so as to present a more thorough picture of the designing process. A more dynamic role of the designer, applicable in the various phases of the construction activity, has been emphasized. For this purpose extensive references have been made to the various standard specifications and guidance has been sought from industry experts to work out the details of the design methodology. The report's field of inquiry is limited to the preliminary design work and its application in particular structural setup.

**Tool used (Development tools - H/w, S/w) :** STAAD PRO, SAP 2000, MS EXCEL, MS WORD

**Objectives of the project :** To lay down the design and analysis of the building construction

**Major Learning Outcomes :** Learned to use softwares such as STAAD PRO, SAP 2000, and writing reports, to use Excel.

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# *PS-II Station: DMI FINANCE PVT. LIMITED, NEW DELHI*

## Faculty

### Name : ASHISH NARANG

## Student

### Name : DIVYANSH GUPTA (2014B3A80606G)

**Student Write-up**

**Short Summary of work done during PS-II :** The work mainly I done here is regarding data analytics. This PS introduced me to the vast field on data analytics and the scope of growth in this sector. Most of the work I done was on Python, which is a great considering the use of python in many big companies.

**Tool used (Development tools - H/w, S/w) :** Software Tools: - Python, SQL Workbench, Amazon Athena, R Studio, MS Office

**Objectives of the project :** To develop an income prediction model and deploying it on the cloud based server

**Major Learning Outcomes :** I learnt various processes which are employed in model development process. I also learn how to deploy a developed model on a cloud based server with the use of an API.

**Brief Description of working environment, expectations from the company :** The work environment is great. The colleagues and employees are very helpful and very friendly. In my experience the company is hugely employee oriented which is pretty good.

**Academic courses relevant to the project :** Machine Learning, Data Mining, Data Structure and Algorithm

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## *PS-II Station: Ecom Express*

## Faculty

### Name : Prof. Sandeep Kayastha

## Student

### Name : K Aravind

**Student Write-up**

**Short Summary of work done during PS-II :** The work is on Data Analytics and not Supply chain as mentioned in station description. A little knowledge of logistics

and e-commerce industry is an added advantage. Key work is providing data driven solutions to business problems, Worked on productivity and planning. Long term project was on Network optimization and stabilization.

**Tool used (Development tools - H/w, S/w) :** R, Excel, SQL

**Objectives of the project :** 1)Network Optimization :Developing the complete network model in R, for further use and minimizing the wait time of the network. 2)Planning : Improve current productivity and plan man power accordingly.

**Major Learning Outcomes :** A thorough knowledge of ecommerce logistics. Understanding of analytical approach to business problems.Developing metrics to identify and solve problems

**Brief Description of working environment, expectations from the company :** Working environment was good. All the employees in the team tried to help us.My manager Mr.Kruthika was really very helpful. He gave us ample time to learn the tools required for the project. He personally explained us every project and many times sat with us to help with the project. You will be handed work which will directly impact the work of others. So its a good learning opportunity, where you will learn how to handle responsibility.The company doesn't expect much, but knowledge of R will be useful.For people who will join next sem, I suggest you speak to Mr.Kruthika more often which will really help you( off course, possible only if he is still in the company)

**Academic courses relevant to the project :** Operations Management, Operations Research, Supply Chain Management. Not necessarily relevant but will help.

## Name : Anmol Khandelwal (2014B4A40559G)

**Student Write-up**

**Tool used (Development tools - H/w, S/w) :** R studio, excel

**Objectives of the project :** 1) build a ranking model of delivery staff , 2) revenue model on R

**Major Learning Outcomes :** 1) learned R studio and MS excel

**Academic courses relevant to the project :** supply chain management

## Name : K Aravind (2014B5AB0689H)

**Student Write-up**

**Short Summary of work done during PS-II :** Worked on multiple projects such as i)Mid-mile network optimization by implementing Dynamic routing and wait time optimization. ii)Man power planning based on volume predictions using regression models iii)Analytics driven Hub restructuring.

**Tool used (Development tools - H/w, S/w) :** Excel, R, SQL, PowerBI, Python

**Objectives of the project :** Each project had direct impact on the working of the company. Mid-mile network optimization is a NP hard problem. I tried to provide a heuristic algorithm with the necessary constraints and also implement dynamic routing on a short scale to test its limitations.Hub restructuring was carried to improve the efficiency of network which had few bottlenecks and decrease the costs. Manpowr planning is a repetitive every month and we have given a semi-automated solution to the problem.

**Major Learning Outcomes :** Complete understanding of logistics industry. Understanding of how analytics is used to solve business problems.

**Brief Description of working environment, expectations from the company :** The work environment is very good. The manager Mr.Kruthika was very helpful and has guided us throughout the internship. The other team members were also very eager to help. The expections of the company are low, but having a basic knowledge of logistics and ecommerce industry and working experience on Excel and R for Data analysis will give you more time to work on projects.

**Academic courses relevant to the project :** Probability & Statistics, Basic Programming, Supply Chain Management

## Name : Harsh Patel (2014B4A40643G)

**Student Write-up**

**Short Summary of work done during PS-II :** There were mainly 2 projects: mid mile and last mile analysis. The mid mile analysis involved working with distances and optimizing routes for better productivity. The last mile analysis involved working with Pincodes and maps.

**Tool used (Development tools - H/w, S/w) :** R, Excel

**Objectives of the project :** The objective was to find the locality from a pincode and then use it for further analysis like Heat map, DC planning.

**Major Learning Outcomes :** Got to know about the logistics industry and

knowledge of pincodes, address and maps.

**Brief Description of working environment, expectations from the company :** The working environment is really good and the people are really supportive there. Freedom of working on projects makes it really good for people expecting a productive PS.

**Academic courses relevant to the project :** Optimization, Computer Programming

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## *PS-II Station: Ecozen Solutions Pvt.Ltd.*

## Faculty

### Name : Ravi Shrikrishna Reosekar

## Student

### Name : KUNCHAM NAVANEETH (2015A4PS0022H)

**Student Write-up**

**Short Summary of work done during PS-II :** As a testing engineer, I had to perform a range of experiments to validate the theoretical capacity values of the Microchannel Heat Exchanger at various loads. Closely involved with the working of the refrigeration components, I played a crucial role in developing safe and efficient manufacturing processes. In the research field, I worked on Vacuum Insulation Panels and Exterior Coatings to improve insulation.

**Tool used (Development tools - H/w, S/w) :** Microsoft Excel, Fusion 360, Realterm, PyCharm

**Objectives of the project :** Experimental validation and Future research

**Major Learning Outcomes :** Working of Evaporators, Condensers, Thermal Storage. Application of Heat Transfer and Refrigeration Concepts in research of insulation material

**Brief Description of working environment, expectations from the**

**company :** Absolutely amazing work environment. The company being a start-up has a very carefree culture with no strict timings and dress code. Friendly employees always there for guidance. Since, its a very focused company, work can be very hectic at times.

**Academic courses relevant to the project :** Heat Transfer, Thermodynamics, Refrigeration and Air-Conditioning

### Name : Nachiket Sant (2015A4PS0274P)

**Student Write-up**

**Tool used (Development tools - H/w, S/w) :** Fusion 360, Ansys, Creo parametric

**Objectives of the project :** Development and prototyping of new version of their product Ecofrost

**Major Learning Outcomes :** Applications of concepts learnt in courses like Advanced mechanics of solids, Mechanical Vibrations, MDD etc. in design and analysis of product parts.

**Brief Description of working environment, expectations from the company :** The working environment is very pleasant and my coworkers were helpful in clearing any doubts regarding the project.

**Academic courses relevant to the project :** Advanced Mechanics of Solids, Machine design and drawing, Production Techniques, Heat Transfer, Mechanical Vibrations

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## *PS-II Station: Edelweiss financial services*

## Faculty

### Name : Dr. B V Prasad

## Student

## Name : Harshil Bhatt

**Student Write-up**

**Short Summary of work done during PS-II :** Inflation Forecast for the Wpi, credit Scorecard formulation for loans against property and a project on statistical arbitrage

**Tool used (Development tools - H/w, S/w) :** Excel, R

**Major Learning Outcomes :** Machine learning, basic finance, Mathematical modeling

**Brief Description of working environment, expectations from the company :** Good working environment, helpful and cooperative staff, good learning experience, proper work timings and ample leaves

**Academic courses relevant to the project :** Probability and statistics, statistical inference and applications

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# *PS-II Station: Edelweiss GI, Mumbai*

# Mentor

## Name:

Designation:

Comments:

# Faculty

## Name : B.V Prasad

Comments:

# Student

## Name : Anshuman (2015A8PS0387P)

### Student Write-up

**Short Summary of work done during PS-II :** Designed an algorithm based on Reinforcement learning technique, namely deep q-learning, which will automate portfolio management. This technique is used to train an agent in any stochastic environment to accomplish its target by maximising a self-defined reward function. In our project, portfolio re-balancing is the action and the state of capital market (based on various parameters) is the stochastic environment.

**Tool used (Development tools - H/w, S/w) :** Python, Jupyter notebook, tensorflow library, google finance APIs, matlab

**Objectives of the project :** Using Deep Q-Learning to automate portfolio management

**Major Learning Outcomes :** 1. Learned a futuristic technology namely deep q-learning. Google is ambitiously working on this algorithm for the last two years
2. Designing a customised environment in Python
3. Mapping time-series financial data to understand correlation of specific factors with stock return

**Details of Papers/patents :** 1. https://neuro.cs.ut.ee/demystifying-deep-reinforcement-learning/
2. http://cs229.stanford.edu/proj2016/report/JinElSaawy-PortfolioManagementusingReinforcementLearning-report.pdf
3. https://github.com/llSourcell/deep_q_learning
4. https://medium.com/emergent-future/simple-reinforcement-learning-with-tensorflow-part-0-q-learning-with-tables-and-neural-networks-d195264329d0

**Brief Description of working environment, expectations from the company :** Working environment was extremely uninspiring. No induction, initial 2 weeks were completely wasted, no clarity on the project or the team to work with, no technical mentorship. I had to myself approach top level executives to get introduced and ask for a project suitable to our credentials and company's needs. I would not recommend this division of Edelweiss at all.

**Academic courses relevant to the project :** Machine Learning, SAPM

## Name : Aditya Joshi (2014B5A40825P)

**Student Write-up**

**Short Summary of work done during PS-II :** I was involved with two projects, which were alloted upon discussion with the company officials.
The first project was in the domain of Social media analytics. We performed a PoC on using an individual health insurance policy holder's publicly available social media data to predict the propensity of suffering from a lifestyle disease in the near future. This information could then be used to mitigate risk and offer discount on premiums to policyholders.
The second project falls under the domain of application of ML in Portfolio management. We performed a PoC on using the state of the art AlphaGo algorithm (which has been trained to play computer games) to dynamically rebalance assets under investment in a portfolio.

**Tool used (Development tools - H/w, S/w) :** Matlab, a list of Python libraries like numpy, scipy, pandas, tensorflow, and environments such as Keras, Jupyter.

**Objectives of the project :** Social media analytics : Identifying risky policyholders which have high probability of making a claim in the near future. Identifying and dividing individual policyholders into different risk categories would then be used to enact differential pricing, leading to an increase in revenues as well as profits. ML in Portfolio management : Exploring the new tools of reinforcement learning to automate rebalancing of assets under investment in a portfolio.

**Major Learning Outcomes :** Execution of a data science project, from the creation of a data pipeline to final tangible results of analysis.
Learning to evaluate projects to be undertaken for exploration or implementation.

**Brief Description of working environment, expectations from the company :** Edelweiss GI is a new company, so there is a lot of ambiguity in roles. The company is still designing it's products, and hence the roles are not set in concrete. Work environment is formal.

**Academic courses relevant to the project :** Probability and Statistics, Mathematics 1, Mathematics 2, DRM, SAPM

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## *PS-II Station: Egnify Technologies*

## Faculty

### Name : Y.V.K Ravi Kumar

## Student

### Name : Sushruth Beeti (2015A2PS0513H)

**Student Write-up**

**Short Summary of work done during PS-II :** Developing a feature or requirement in a web app using MERN stack development and deployment.

**Tool used (Development tools - H/w, S/w) :** React.js, MongoDB, Node.js, Express.js

**Objectives of the project :** Developing a feature, making it pass all the testing(QA) quality assessment and deploying to production

**Major Learning Outcomes :** Collaborative learning experience, larger scope of how a startup works both from technical and business point of view, learning MERN stack development., also working with version control system like git, load testing api's with locust.

**Academic courses relevant to the project :** Data structures and Algorithms
Database Management System
Computer Networking

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# *PS-II Station: Ericson Global India Services, Bangalore*

## Faculty

### Name : Lucy Gudino

## Student

### Name : Vaishnavi B (2015A8PS0514G)

**Student Write-up**

**Short Summary of work done during PS-II :** Logging is an essential part of any service provided. Having an efficient log yet not missing out on a lot of information that makes debugging difficult, is essential. This project aims at developing a tool that provides a more coherent way of debugging issues through efficient logging. This is done by a two step process – creating a unique key for each debug statement and recording only essential parameters, which is stored in a buffer and flushed out whenever a capsule occurs and decoding debug statements from the key.

**Tool used (Development tools - H/w, S/w) :** TiGER, Eclipse

**Objectives of the project :** To make logging and debugging more efficient

**Major Learning Outcomes :** Advanced C++, Application services of MTAS, IMS architecture

**Academic courses relevant to the project :** Mobile Telecommunication Networks, Communication systems

### Name : Chinmay Agarwal (2015A3PS0271G)

**Student Write-up**

**Short Summary of work done during PS-II :** Spreadsheet Analytics Java Program Rest API created for calculating the efficient workdays of the employees at Ericsson. Debugging of an internal JavaFX Program.

**Tool used (Development tools - H/w, S/w) :** Java, JavaFX.

**Objectives of the project :** Improve internal efficiency

**Major Learning Outcomes :** Software Development

**Academic courses relevant to the project :** Object Oriented Programming

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## *PS-II Station: Ericsson Chennai*

## Faculty

### Name : Akshaya Ganesan

# Student

## Name : Durjai Sethi

**Student Write-up**

**Short Summary of work done during PS-II : 1**. Worked on fixing internal and external Trouble Reports, testing the verification core loops and automating the test cases on Robot Framework platform.
2. Worked on analysis of BSCS of R3 branch, and to implement the licensing structure for both clients and developers into R4 branch of BSCS.

**Tool used (Development tools - H/w, S/w) :** Eclipse, Robot Frameworks

**Objectives of the project :** Automation of test cases, fixing of Trouble Reports and porting BSCS versions

**Major Learning Outcomes :** Automation, testing, development

## Name : Dhanush K (2015A8PS0374P)

**Student Write-up**

**Short Summary of work done during PS-II :** Robot Framework Automation and Licensing of BSCS

**Tool used (Development tools - H/w, S/w) :** Robot Framework

**Objectives of the project :** To automate tests using Robot Framework. Also to implement a licensing provision for BSCS R3

**Major Learning Outcomes :** Robot Framework Automation

**Brief Description of working environment, expectations from the company :** The work environment is friendly and flexible. The employees are kind and supportive. There is no excessive work load and the work is easy to pick up.

## Name : Mohit Chugh (2015A3PS0189P)

**Student Write-up**

**Short Summary of work done during PS-II :** 1.Unit testing and automation for the backend files of the charging system of the organization.
2.Analysed the time to generate the heap dump when a certain amount of traffic is pumped onto the server.
3.Replacing the currently used messaging queuing system (Apache ActiveMQ) with a new one (Apache Artemis).

**Tool used (Development tools - H/w, S/w) :** Eclipse, JUnit, CodePro Analytix, Putty, HP Gen8 Virtual Machines

**Objectives of the project :** 1.To automate unit testing for the charging system. 2. Generate dummy traffic on the server and analyse the time to dump the logs on the heap when different amount of heaps are filled. 3. Replace the message queuing system to avoid crashes for large message queues.

**Major Learning Outcomes :** 1.Learned Unit Testing and Automation.
2.Message queuing systems and their implementation.

**Academic courses relevant to the project :** CS F213 - Object Oriented Programming

## Name : Pratyush Priyank (2015A3PS0188P)

### Student Write-up

**Tool used (Development tools - H/w, S/w) :** DES Algorithm, Shutdown Hook, Beautiful Soup

**Objectives of the project :** Developing a Search Utility for search Product Customization key IDs

**Major Learning Outcomes :** Learnt about ShutDown Hook, Beautiful Soup, which is a very efficient tool for web scraping, and DES algorithm.

**Brief Description of working environment, expectations from the company :** Nothing was planned for us. They are used to accommodating VIT interns, who intern there for 10 months, so it was presumed that nothing very significant could be done in just 5.5 months and hence, we were mostly neglected. The only intermittent tasks that were assigned, were mostly related to testing the codes already written by someone. DO NOT EXPECT ANY DEVELOPMENT PROJECT.

**Academic courses relevant to the project :** Object Oriented Programming

# *PS-II Station: ERICSSON GLOBAL PVT LTD GURGAON*

## Faculty

### Name : PROF. ASHISH NARANG

## Student

### Name : RISHABH SINGH (2015A3PS0308H)

**Student Write-up**

**Short Summary of work done during PS-II :** My main project involved the extraction of the dependencies of the company on the tools of other companies from the code that Ericsson is developing. The aim was to automate this lengthy process of finding the dependencies and initiating negotiations and reduce human effort in every possible scenario. The process involved making a Maven plugin for this process and directly uploading the results to the company's website to begin the negotiations for the api that have been used by the code of Ericsson and have been developed by other companies.
Also , for a competition in the company known as the Hackathon, we developed a recommender system to break the query entered by the user and suggest the best possible person in the company who can answer this query depending on the data present in the database of the tool which is entered during the time of registration, This code was also developed in Java.
I was also involved in the core team of back-end development in Ericsson which got me into back-end code testing using Junit framework. The process of this involved learning how to work with mockito and using mock objects to test the main framework of the code without disturbing the contents of the code. The main aim of the project was to crate test scenarios and check if the existing code can pass all the test scenarios before being deployed and aggregated to the available code of the company. The code was developed using Java.

**Tool used (Development tools - H/w, S/w) :** Java , Maven , Junits , Lucene , Mockito

**Objectives of the project :** Code Dependency Extraction and Code Testing

**Major Learning Outcomes :** Huge Improvement in coding skills , Understanding Junits and BlackBox testing and Architectural Development of a web tool recommender system

**Brief Description of working environment, expectations from the**

**company :** The working environment of Ericsson Gurugram is extremely pleasant and the interns and employee interaction is really good. The employees respect and help the interns whenever we required help and the managers are also extremely polite and work oriented. The project allotment is done on the basis of the intern's capability and area of expertise which I think is really good as the interns are given their project depending on factors such as which language they code in , the previous projects that they have done and their interests. Also , even the senior executives of the company are extremely helpful. The organisation of competitions such as the Hackathon encourages innovation and hard work in the company. Also events such as success outings of projects and team outings really help in interaction. The company provides and environment which encourages interns to learn and create tools for the company which can help the employees in the future worldwide.

**Academic courses relevant to the project :** Object Oriented Programming , Data Structures , Database Management Systems

## Name : Udyan Mahajan (2014B5A80876P)

### Student Write-up

**Short Summary of work done during PS-II :** Ericsson is currently working on a real-time biller called the Revenue Manager. The RM project comprises of multiple modules which work together to complete the query. The testing and automation team is responsible for testing the functioning of all the specific modules, as well as the working together of multiple modules in cohesion. My project, which is a sub project of the Automation team, is to automate the testing environment so as to install all the modules without requiring input from the user. This is done using Shell Scripting. The input is given in the form of a CSV file, which contains all the details required by the system to install the modules. The program goes through the file one by one, installing the modules in the order specified.

**Tool used (Development tools - H/w, S/w) :** Bash, Python

**Objectives of the project :** THE AUTOMATION OF SETUP FOR THE TESTING ENVIRONMENT

**Major Learning Outcomes :** Experience in Coding, Multi-script projects

**Brief Description of working environment, expectations from the company :** Working Environment is pretty intern-friendly. As long as the work is done and deadlines are met, there is not much stress. The timings are very flexible and the company employees are very helpful when it comes to your queries and problems.

## Name : Shreyas R (2015A3PS0162G)

**Student Write-up**

**Short Summary of work done during PS-II :** Ericsson employs an automation server which is used to automate part of the software development process and a code review server based on Git. Every night, test cases are run on the code that was committed during the day and the failures are reported the following day. The process of matching each test case failure with a specific commit that has caused it becomes tedious if there are many failures for a day. The project was to automate the downloading of each test case, and analyse the output log file comprehensively to determine which error has caused the test case failure. After completing the primary analysis, analysis jobs were triggered and analysed after they have finished.

**Tool used (Development tools - H/w, S/w) :** Python and corresponding libraries

**Objectives of the project :** To run the entire process of mapping commits to test case failures on the machine and time and effort taken to download and analyse is greatly reduced from doing it manually

**Major Learning Outcomes :** Usage of web scraping libraries
Better knowledge of Python
Communication technology development in a R&D company

**Brief Description of working environment, expectations from the company :** Working environment was very friendly. Team members were always ready to help and assist in any way possible. There were no strict timings to follow. The projects seem more CS oriented rather than Electronics based and are based on the team.

**Academic courses relevant to the project :** CS F111

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## *PS-II Station: Ernst & Young Gurgaon LLP*

## Faculty

### Name : Sandeep Kayastha

## Student

## Name : Jairaj Paruthy (2015A4PS0307P)

### Student Write-up

**Short Summary of work done during PS-II :** I got an opportunity to work with Ernst & Young LLP as a trainee in the Advisory sector under the PS-2 programme. I worked in Government Advisory service line under the Power and Utilities domain. The team I worked with actively engaged with both the government and private clients in the renewable energy sector. I got to work upon projects broadly pertaining to Solar rooftop and Electric mobility space. The projects comprised of tasks ranging from market assessment by means of primary and secondary searches to development of credentials and CVs for proposals. I was also involved in conducting a stakeholder discussion workshop for large scale adoption of Grid connected Rooftop Solar by SMEs. The work at E&Y gave me an exposure to the depth and the intricacies involved in consulting space starting from pitching for a proposal/tender to delivering the final report. The work though tedious at times is essential and elementary in the consulting domain and made me aware about the prerequisites of being a consultant. I would like to extend my thanks to the team for their constant support and help throughout the tenure. It was a wonderful experience working with the EY.

**Tool used (Development tools - H/w, S/w) :** MS Office, exclusively MS Excel and MS PowerPoint

**Objectives of the project :** Undertook several projects in Electric mobility and rooftop solar space which included development of knowledge database of current rooftop solar as well as Electric Mobility Scenario in India

**Major Learning Outcomes :** The projects gave me an opportunity to gain insights into the current energy scenario in the county as well as the growth potential in power and utilities division, primarily in renewable space. The work experience also helped to groom business writing and soft skills

**Brief Description of working environment, expectations from the company :** My PS-2 at Ernst and Young Gurgaon LLP, was my first stint in the consulting space and it really gave me something to look forward upon. It was a major transition from theoretical based knowledge to a real world scenario and helped me to get a different perspective overall. The work which began with a relatively dull phase of studying eventually turned into rigorous clientele work ranging from preparing credentials, formatting CVs, preparing invoices and culminating to the satisfactory delivery of reports, all the while maintaining a professional demeanor and adhering to the stringent guidelines.I expected the organisation to provide me with a platform to engage in difficult business problems and to understand first-hand how such problems are solved. This was an experience which was granted to during my tenure in the organisation. EY is a great place to gain corporate exposure and my time spent at the organisation has helped me gain a lot in terms of my overall

development and I thank the PS Division and EY India for this opportunity.

**Academic courses relevant to the project :** Solar thermal process engineering, Principles of Management

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# *PS-II Station: EY GDS, Banglore*

## Faculty

### Name : Sandeep Kayastha

## Student

### Name : Tharun reddy Mandadi (2014B4A20668H)

**Student Write-up**

**Short Summary of work done during PS-II :** As a fresher to finance, I started with studying about Derivatives and how they are valued in excel, I studied Black Scholes formula and its applications. I wrote python library for valuation of Swaptions and Caps&Floors. Later I studied on Interest rate models. Applications of stochastic volatility interest rate models, I built a library for SABR model, which is used in valuation of derivatives

**Tool used (Development tools - H/w, S/w) :** MATLAB, Python, VBA

**Objectives of the project :** The objective was to build a library for a stochastic volatility model to value derivatives.

**Major Learning Outcomes :** Finance knowledge, Stochastic Calculus, Programming, Application of pure maths.

**Brief Description of working environment, expectations from the company :** The colleagues here are very welcoming, being one of Big 4 companies, the working atmosphere is very professional. The learning opportunities are vast. EY is a very good place for a fresher to grow professionally. My mentors were very supportive and have given me quality projects. They expect interns to deliver for the company, what ever interns do here it should be a value addition for he company

**Academic courses relevant to the project :** All Maths courses and especially knowledge in Calculus and Statistics is important, C, Data Structures and Algorithms, Finance courses are very helpful. The work here is a combination of Maths, finance, Computing

## Name : Shivam Anand (2014B4A1804P)

**Student Write-up**

**Short Summary of work done during PS-II :** Risk Management. Quant Consultant. Financial Modelling.

Feel free to ask for specifics!

**Tool used (Development tools - H/w, S/w) :** Python, Excel

**Objectives of the project :** Interest Rate Modelling (Stochastic Calculus)

**Major Learning Outcomes :** Interest Rate Modelling, Stochastic Calculus, Market Risk, Risk Management

**Academic courses relevant to the project :** Derivatives & Risk Management + Mathematics CDC's (NumPDE, Measure & Integration)

## Name : Rishabh Saxena (2014B3A80721P)

**Student Write-up**

**Short Summary of work done during PS-II :** Worked on various cutting edge financial regulation techniques such as CECL and CCAR. Assigned a lot of training projects and training sessions by company. Worked on real life regulatory projects in first half of PS. In second half, worked extensively on financial models and vetting customers based on financial scores, etc. Also contributed to the firm with internal training modules designed by me.

**Tool used (Development tools - H/w, S/w) :** Excel, Word, PowerPoint, SAS, R

**Objectives of the project :** Client work for financial modeling

**Major Learning Outcomes :** Financial model techniques and regulatory standards for banking

**Academic courses relevant to the project :** Econometrics, Derivatives and Risk Management, Applied Econometrics, Object Oriented Programming, C Programming.

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# *PS-II Station: EY Gurgaon (Advisory Services)*

## Faculty

### Name : Mr Sandeep Kayastha

## Student

### Name : Vibhu Goyal (2015A4PS0385G)

**Student Write-up**

**Short Summary of work done during PS-II :** I worked on Multiple Consulting projects falling within the categories of Solar rooftop and Electric Vehicles in India.The Project involved conducting market research to understand the current situation and the scope these 2 sectors in India. I studied past trends seen in both the sectors and the policies which the government plans to introduce to tackle challenges in adopting EVs and solar rooftop.Policies of other prominent countries in these sectors was also analysed properly to understand the kind of market conditions and financial incentives which may be needed in India to promote these newly upcoming opportunities.

**Tool used (Development tools - H/w, S/w) :** MS Office

**Objectives of the project :** I mainly worked with the company in already ongoing projects and help them in it while learning from them side by side.

**Major Learning Outcomes :** a.) I got a good idea of Electric Vehicles and Solar Rooftop Conditions in India.
b.) I learnt what all government takes into consideration before framing the Policies.
c.) Understood the skill of CV building and Presentation.

**Brief Description of working environment, expectations from the company :** The Office environment is really friendly and almost everyone in the EY team is always ready to help or clear doubts. The team usually follows office timings

and doesn't force you to stay late unless the work to be done is very urgent. You can choose to ask for work which you would like to do in addition to what you are already working on.

**Academic courses relevant to the project :** Principles Of Management, Production Planning and Control

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## *PS-II Station: Fidelity Investments, Bangalore*

## Faculty

### Name : Mr Vishwanathan Hariharan

## Student

### Name : Sargun Nagpal

**Student Write-up**

**Short Summary of work done during PS-II :** My work was based on prediction of the prices of top 100 cryptocurrencies by market capitalization and was divided into 4 parts:

1. First was collecting data, extracting features out of it, developing a recurrent neural network architecture for prediction and then prediction of next hour price.
2. Second was connecting and dumping the results to a MySQL database.
3. Next was running a batch job to automate the above tasks.
4. Last was to design a web application for users to view the predicted prices, accuracy as well as some graphs for analysis.

**Tool used (Development tools - H/w, S/w) :** Python (Numpy, Pandas, Keras, TensorFlow, SQLAlchemy, Django), Angular, MySQL Workbench.

**Objectives of the project :** Prediction of Cryptocurrency prices

**Major Learning Outcomes :** Strong coding ability in Python, Deep learning, Machine Learning, Cryptocurrencies specific domain knowledge, Blockchain

**Brief Description of working environment, expectations from the**

**company :** The company is so decent as to give you first week accommodation and flight travel reimbursement as part of the first month stipend.
Work timings were not strict. More stress was given on timely completion of work, rather than how much time was spent in office.
The best part was the company provided transport both for login and logout and a very systematic system and safety for the same.

**Academic courses relevant to the project :** Machine Learning, Neural Networks and Fuzzy Logic, Data Mining

## Name : Vaishnavi Bhusari (2015A3PA0361H)

### Student Write-up

**Short Summary of work done during PS-II :** My project was based on Data Science and Machine Learning. It was Cyber Security Threat Hunting. The main aim of this project was predictive analysis and global threat hunting in order to identify the possible potential threats to the organization's network. It involves gathering of information from various sources present within the Fidelity network, threats from outside world, threats to individual users, and the subsequent prescriptive measures in order to protect the organization.

**Tool used (Development tools - H/w, S/w) :** Software: R programming, MYSQL

**Objectives of the project :** The major objective of this project is to device a platform which would consists of information from all the sources mentioned and predict the intensity parameters of the future possible threats.

**Major Learning Outcomes :** Machine Learning, Data Science Techniques.

**Brief Description of working environment, expectations from the company :** The working environment of the company is extremely favorable. They give sufficient amount of time to learn new programming languages and techniques, and also to understand the essence of project. One of the major goals of the company is to drive their project using Artificial Intelligence and Machine Learning, in order to achieve efficiency and optimization. The organization expects the students to understand the depth of the project and be punctual in completing the work assigned to them.

**Academic courses relevant to the project :** Machine Learning (BITS F464), Foundations of Data Science (CS F320), Data Mining (CS F415)

# *PS-II Station: Freshworks Inc., Chennai*

## Faculty

### Name : Akshaya Ganesan

## Student

### Name : Bathrinath C (2015A1PS0739H)

**Student Write-up**

**Short Summary of work done during PS-II :** Helping the Marketplace of freshworks grow in app numbers and creating a proper structure to keep track of partners and apps submitted by the partners and doing various campaigns to reachout to partners through market research and bring in more new partners.

**Tool used (Development tools - H/w, S/w) :** Freshsales, Excel, beautifulSoup(python)

**Objectives of the project :** Help in growth of marketplace

**Major Learning Outcomes :** Organisational skills, deep insight of SaaS industry, Data mining, GTM / Partnerships

**Brief Description of working environment, expectations from the company :** Flat hierarchy, Flexible timings, No dress code, hard working and optimistic colleagues

**Academic courses relevant to the project :** Data mining

### Name : Amulya Choudhary (2015A2PS0850P)

**Student Write-up**

**Short Summary of work done during PS-II :** I worked as a Business Development intern at Freshworks Markteplace. My work included strategising, estimating and analyzing the different aspects of partner on boarding as a part of GTM(Go-to-market) strategy.

**Tool used (Development tools - H/w, S/w) :** Python, Web Scraper,

ParseHub, Freshdesk, Freshsales.

**Objectives of the project :** To reach 550 apps through ISV and SI partners in Freshworks Marketplace

**Major Learning Outcomes :** Professional Work Ethic, Time Management, Task Prioritizing, Data Mining, Strong Estimation and analytical reporting skills.

**Brief Description of working environment, expectations from the company :** Great work culture similar to that of startups in Silicon Valley. One can expect a PPO from this company. Flexible timings, Casual dress code, Free food throughout the day, Young energetic colleagues who make it easier for you to quickly learn and stay motivated.

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## *PS-II Station: FTD India Pvt Ltd*

## Faculty

### Name : Dr. Y V K Ravi Kumar

## Student

### Name : P V N S Viswanatha Kasyap (2015AAPS0206H)

**Student Write-up**

**Short Summary of work done during PS-II :** Built a virtual workflow builder and visualiser as part of FTD's Order Management System. The application is based on ReactJS and uses GoJS and other libraries to create a JSON format workflow from a visual flowchart or vice versa. This application was then integrated with a Conductor server API to store and retrieve the created workflows.

**Tool used (Development tools - H/w, S/w) :** ReactJS, GoJS, Redux, Netflix Conductor, NodeJS

**Objectives of the project :** To build a virtual workflow builder

**Major Learning Outcomes :** Front end web development

**Brief Description of working environment, expectations from the company :** Very good working environment. Everyone is very supportive and always guided me whenever required. The company has a very nice work-life balance and the work never got too hectic.

**Academic courses relevant to the project :** Computer Programming (CS F111)

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## *PS-II Station: General Electric, Bangalore (JFWTC)*

## Faculty

### Name : Dr. Srinivas Kota

## Student

### Name : Soham Gurjar (2015A4PS0228G)

**Student Write-up**

**Short Summary of work done during PS-II :** My main project involved understanding and modelling combined cycles (gas and steam turbines) in an in-house software at General Electric. I also worked on two mini-projects involving Python and Java programming. The python based project involved understanding of concepts of machine learning which was a new skill I had to learn during the course of PS apart from the usual mechanical stuff. Also, the Java project was related to design automation and introduced me to a totally different domain.

**Tool used (Development tools - H/w, S/w) :** In-house simulation software, Java, Python

**Objectives of the project :** Combined Cycle Modelling (Simulations)

**Major Learning Outcomes :** In depth knowledge of combined cycles (gas turbines, heat recovery steam generators and steam turbines) through simulation assignments, introduction to concepts of machine learning and basics of Java programming

**Brief Description of working environment, expectations from the company :** The working environment is the BEST you can find in any of the core

mechanical industries. The people are super helpful and will make sure that you learn things the right way by the end of your internship. Especially the manager Dr. Muralikrishna is very considerate and will make sure that you get projects in your desired domain and make the most out of this internship.

**Academic courses relevant to the project :** Applied Thermodynamics, Heat Transfer, CAD (basics of simulation software), Programming Basics

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## *PS-II Station: Genpact, Bangalore*

## Faculty

### Name : Shekhar Rajagopalan

## Student

### Name : Devesh Narula (2015A8PS0491P)

**Student Write-up**

**Short Summary of work done during PS-II :** The aim of the first project was to evaluate a data science platform XYZ* by building a customer churn model for the client's platform using platform data from 2015-2018. Data understanding, Exploratory Data Analytics (EDA), Data cleansing, Feature engineering and Modelling steps were performed. The aim of the second project was to develop graph analytics techniques using advanced graph theory algorithms to support and execute Anti-Money laundering (AML) operations. Transactional dataset of account holders of a major bank was used to flag fraudulent/money laundering transactions using graph analytics.

**Tool used (Development tools - H/w, S/w) :** Machine Learning, Graph theory, Graph Algorithms, Graph DBMS, Python

**Objectives of the project :** • Exploring Graph theory, Graph analytics techniques and its applications for community, influencer identification, and for influencer identification , and for supporting Anti Money Laundering operations. • Building machine learning models to meet the requirements of the client • Evaluating and shortlisting data science platforms to be used by the organization

**Major Learning Outcomes :** • Very valuable insights on churn modelling and

business side of the client
• Detailed understanding of data preprocessing and processing steps along with their implementation
• Anti-money laundering and its crucial role in an organization
• Getting equipped and skilled in python and other analytics tools/platforms

**Brief Description of working environment, expectations from the company :** The managers allotted for the PS-2 from Genpact are senior data scientists and are hence very experienced. They are very helpful and working under them will surely help you learn a lot. The only thing you need to show is your interest to learn new things. You can take multiple projects which will contribute immensely to your resume and will definitely help you apply for similar roles off-campus/on-campus. The projects are research driven based on upcoming technology in data science hence there's a lot of demand for such roles. Overall the work environment is very rewarding and professional, given you are ready to put in effort to learn and work.

**Academic courses relevant to the project :** Machine learning, Financial Management, Graph Theory

## Name : Divij Sinha (2015A3PS0236G)

**Student Write-up**

**Short Summary of work done during PS-II :** Researched into Reinforcement Learning for the company's needs and developed a product for the same

**Tool used (Development tools - H/w, S/w) :** Python

**Objectives of the project :** New Tool development

**Major Learning Outcomes :** Machine Learning, Data Science, Project handling

**Brief Description of working environment, expectations from the company :** Company expects deadlines to be met, no excessive pressure. Positive work environment.

**Academic courses relevant to the project :** Machine Learning

## Name : Arpit gautam (2015ABPS0639H)

**Student Write-up**

**Short Summary of work done during PS-II :** Cleansing the data, Analysing the

data and doing RCA(s).

**Tool used (Development tools - H/w, S/w) :** Excel and Tableau.

**Objectives of the project :** Data analytics.

**Major Learning Outcomes :** Understanding the data improved. Learnt new tool.

**Brief Description of working environment, expectations from the company :**Employees are nice, no such pressure was being put on us regarding the work. Help and guidance were provided on regular intervals.

**Academic courses relevant to the project :** Lean and Supply chain.

## Name : Aishwarya Karunakar (2014B4A30554H )

**Student Write-up**

**Short Summary of work done during PS-II :** Part of Data science team at Genpact. Worked on deploying deep learning models for use cases in Computer Vision applications.

**Tool used (Development tools - H/w, S/w) :** Python

**Objectives of the project :** Build deep learning models for CV applications

**Major Learning Outcomes :** Deep Learning, Computer vision

**Brief Description of working environment, expectations from the company :** Working environment is stable with lots of opportunities to learn different aspects of data science with a variety of use cases to work on.

**Academic courses relevant to the project :** Machine learning, statistics, Digital image processing, Optimization

## Name : Nishant Yadav (2015A8PS0527G)

**Student Write-up**

**Short Summary of work done during PS-II :** I was working on speech analytics (emotion detection specifically) and back-end development for an existing speech analysis pipeline (which in real time tries to capture the sentiment and emotion of the speaker) developed by Genpact. I had to write an algorithm which could perform

emotion classification (among happy, sad, neutral and angry emotions) on the various audio inputs given. One of the particular use case of the project is in call centers (to analyze the customer emotions to enhance customer satisfaction).

**Tool used (Development tools - H/w, S/w) :** Python, Flask

**Objectives of the project :** To write an algorithm for emotion detection and to make a REST API for the pipeline.

**Major Learning Outcomes :** Python and it's use to implement various machine learning approaches such as Neural networks, Logistic regression, Linear regression, KNN-classifier, Support vector machines. Apart from this the use of Flask (Web-micro-framework in Python) for back-end development.

**Brief Description of working environment, expectations from the company :** Genpact has very cooperative and supportive employees and a very healthy work environment for interns. Regular team meetings are conducted to discuss progress reports of various team members. Company allows interns who are new to their respective fields of work ample time to learn, fit-in and adjust with the company procedures and ways of going about things. There are enough opportunities to learn and acquire new skills. Helpful mentors allotted to interns (depending on their project) and negligible work pressure adds to the productivity.

**Academic courses relevant to the project :** Neural Networks an fuzzy logic.

## Name : Aditi (2015B4TS0924P)

**Student Write-up**

**Short Summary of work done during PS-II :** I made a chat bot

**Tool used (Development tools - H/w, S/w) :** NodeJs, Python

**Objectives of the project :** Chat Bot Development

**Major Learning Outcomes :** Learned NodeJS, Python and machine learning. Used NLP, text mining, intent classification and entity extraction to make a chat bot

**Brief Description of working environment, expectations from the company :** Work environment is decent, managers and mentors are really supportive. But the stipend offered by the company is really low compared to the work offered by them. Otherwise it's a really good experience work wise.

**Academic courses relevant to the project :** Machine Learning

## Name : Chand Sethi (2014B1A10912G)

**Student Write-up**

**Short Summary of work done during PS-II :** Project 1: Migration of Forecasting code from R to Python and improving accuracy and speed of the model. Forecasting was done with Auto Arima and Neural Networks.
Project 2: Improving run-time of non-linear optimization. Done by replacing in-built Scipy minimization with third-party optimizers.

**Tool used (Development tools - H/w, S/w) :** Anaconda/Python, RStudio

**Objectives of the project :** Project 1: Migrate forecasting code from R to Python and improve accuracy and speed. Project 2: Improve run time of non-linear optimization.

**Major Learning Outcomes :** R is better at statistical analysis and very specific packages are readily available but Python being a general purpose language has ecosystems built around it, which makes it a good candidate for data science applications.

**Brief Description of working environment, expectations from the company :** Being a corporate company, there are a lot of delays expected during the set-up and troubleshooting but the work timings are flexible and the working environment is non-hectic.

## Name : Kaustubh Dusad (2015A1PS0619G)

**Student Write-up**

**Short Summary of work done during PS-II :** Learnt R programming, statistics, hive Hadoop etc. Built a UI(user interface) in Rstudio using shiny package to extract and map sales data and generate automated reports for clients using some UNIX codes

**Tool used (Development tools - H/w, S/w) :** RStusio, Hive, puTTy, Excel, PowerPoint, filezilla

**Objectives of the project :** Building a UI to let user provide classification of sales data and generate automated reports for the same....thus reducing the TAT(turnaround time) and manual work on the process which can lead to errors

**Major Learning Outcomes :** Learnt R programming...widely used in data

analytics. Also learnt about the amount of data companies deal with and got a first hand experience for the same. Also learnt about softwares like puTTy, FileZilla etc.

**Brief Description of working environment, expectations from the company :** Working environment is chill. Not much work load. No real adherent working hours(depends upon the team...but mostly 6-7 hrs). Employees are very humble and polite. Setup process takes a lot of time though. Good projects and good opportunities to learn about the analytics sector.

**Academic courses relevant to the project :** C programming, Statistics

## Name : Manprit Singh (2015ABPS0866P)

**Student Write-up**

**Short Summary of work done during PS-II :** Reporting and Analysis of key performance indicators (KPIs) in Transportation Operations. Root Cause Analysis of underperforming metrics. Building and standardizing logic for all metrics. Forecasting Year To Go numbers using Year To Date numbers.

**Tool used (Development tools - H/w, S/w) :** Excel

**Objectives of the project :** Consistent Weekly Reporting and Analysis of Transportation SLAs

**Major Learning Outcomes :** Data preparation, standardization and reporting. Quality checks. Advanced excel. Basic Lean Training. Basic VBA and Python (minute - self study)

**Brief Description of working environment, expectations from the company :** The working environment was quite decent with good managers and leaders. We were 3 interns amongst the quality team for the client. Our work wasn't optimum, in a way we were underutilised. The timings are quite flexible so you can leave early with permission as soon as your work is done. Overall, decent work with a decent atmosphere. Low pay grade.

**Academic courses relevant to the project :** Supply Chain Management Lean Manufacturing

## Name : Tania Nandi (2015A5PS0932P)

**Student Write-up**

**Short Summary of work done during PS-II :** I have developed 2 tools as a

Proof of Concept. Both had a Forecasting component using ARIMAX model. I was asked to write a white paper on one of the projects. Both of the projects was under the Healthcare and Lifesciences domain.

**Tool used (Development tools - H/w, S/w) :** R Studio and R shiny

**Objectives of the project :** to develop tools in r studio environment as it is open source and a powerful language.

**Major Learning Outcomes :** Coding and analytics in R. Application/Tool development

**Details of Papers/patents :** White paper on Star Measure and Adherence Forecasting tool (project 1). to be published in the Genpact Internal environment. Technical as well as business paper highlighting the methodology, logic used to develop the tool, types of dataset used to test the tool and finally the scope of application across various sectors of Healthcare.

**Brief Description of working environment, expectations from the company :** the working environment is very flexible. it helps you develop and learn things at your own pace. helpful colleagues who are ever ready to share their knowledge and good managers to guide you through the projects.

**Academic courses relevant to the project :** statistics, C programming (only for understanding basics of coding)

## Name : Shivam Chaubey (2015D2TS0999P)

**Student Write-up**

**Short Summary of work done during PS-II :** During this internship period I was involved in work revolving around Data analytics, Retails, marketing, supply chain, CPG. I got an opportunity to understand the working principles of this area and be a part of the process. As i was part of two teams that were handling two different clients for Genpact. My project was concerned with "Consumer targeting and market segmentation Strategies ".

**Tool used (Development tools - H/w, S/w) :** Microsoft Word, Excel, CAMEO (consumer segmentation system), Phython.

**Objectives of the project :** Study of the existing Consumer targeting and segmentation methods. Identifying the limitations in them and coming up with new methods that counter those limitations.

**Major Learning Outcomes :** Types of Segmentation methods used in current

world of retails marketing. Different types and appropriate scenarios in which these methods are used. Limitations of each of the methods.

**Brief Description of working environment, expectations from the company :** The working environment was every professional and friendly. Everybody in the office was welcoming and was willing to help and guide with an supportive and positive attitude.

**Academic courses relevant to the project :** POM (Principles of Management), POE (Principles of Economics), C programming.

## Name : Ashish Gupta (2015A2PS0816P)

### Student Write-up

**Short Summary of work done during PS-II :** a comprehensive methodology to forecasting methods and to implement them in R using various R packages and different models to be put to use for forecasting such as Holtwinters which comprises of exponential and double exponential smoothening parameters and ARIMA models. Forecasting is a common statistical task in business, where it helps to inform decisions about the scheduling of production, transportation and personnel, and provides a guide to long-term strategic planning. An organization needs to develop a forecasting system that involves several approaches to predicting uncertain events. Such forecasting systems require the development of expertise in identifying forecasting problems, applying a range of forecasting methods, selecting appropriate methods for each problem, and evaluating and refining forecasting methods over time. It is also important to have strong organizational support for the use of formal forecasting methods if they are to be used successfully. This report also focuses on various packages for UI visual development in R such as R shiny which is the package for the application development in R Shiny is an R package that makes it easy to build interactive web apps straight from R. Standalone apps can be hosted on a webpage and dashboards can be built in a nutshell Shiny combines the computational power of R with the interactivity of the modern web. Shiny apps can also be extended with CSS themes, html widgets, and JavaScript actions and ggplot2 which is a package for the graphical visualization of time series data and its various trends and seasonality.

**Tool used (Development tools - H/w, S/w) :** R

**Objectives of the project :** Developing a forecasting Tool for a client

**Major Learning Outcomes :** got an extensive knowledge in R and big data analytics

**Brief Description of working environment, expectations from the company :** Genpact has provided me

with an excellent environment to learn and develop my skills. I have been provided with an exceptional
project and all the aid and support I need. However, the company took a large amount of time to assign
me the project. Once the project was assigned, I was given weekly targets to achieve. A team of experts
would advise me on weekly meetings and assign me tasks to accomplish by the next meeting. I was
given free reign on how I accomplished the tasks. All the team members were available for advice as
needed.

**Academic courses relevant to the project :** Probability and Statistics

## Name : Akanksha Goyal (2015A5PS0928P)

**Student Write-up**

**Short Summary of work done during PS-II :** In the Healthcare and Life Sciences Department, Genpact provides Analytics and Research offerings to the client by aiding in secondary search. These services vary from literature and patent searches, AUP requests, white paper requests, to competitive intelligence searches. These services help the client in further discovery and development of new drugs, patent filings and regulatory approvals which helps in decision making for mergers, acquisitions and collaborative opportunities.

**Tool used (Development tools - H/w, S/w) :** Microsoft Office Tools

**Objectives of the project :** Seconday Research for a Pharmaceutical Company

**Major Learning Outcomes :** Interning at Genpact helped me gain experience in client dealing and negotiations. I got equipped with database management in secondary research specific to the client's business needs. It gave me an opportunity to handle an international client and hence has helped me develop my communication skills tremendously.

**Academic courses relevant to the project :** Pharmacoeconomics, Biochemistry, Pharmacology, Molecular Biology

## Name : Tarush Gupta (2015A2PS0643P)

**Student Write-up**

**Short Summary of work done during PS-II :** The principal part of my project involved us learning the various services provided by the company to their clients

and automate them using transformation techniques. Therefore as part of this assignment I designed a self learning neural network which would forecast sales for a major global manufacturer and thus try to estimate the optimum inventory supply for the manufacturer to distribute among retailers.

**Tool used (Development tools - H/w, S/w) :** Python

**Objectives of the project :** For this process I received point of sale data from the company which I analysed to determine causal trends like seasonality and ad promotion impact. The data was aggregated weekly and fed as input to determine a forecast independent of trends and causal factors. The trends and causality was then inputed as a bias node to the network to modify specific weights pertaining to specific months where the trend was valid to give us a final market to date forecast which factored retail market condition.

**Major Learning Outcomes :** This work opportunity with Genpact has been a great learning experience in an industry in which I previously had very little experience. I have learned the inner workings of a data services firm and the various different tasks performed by the numerous departments here.

**Brief Description of working environment, expectations from the company :** The experience here has been greatly beneficial to my academic development allowing me to gain crucial exposure in an industry with limitless applications to global markets of different types. I have learned the various insights which can be gained by analyzing different types of data for different indicators crucial to the success of that business.

**Academic courses relevant to the project :** Machine Learning

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## *PS-II Station: GEP INC, MUMBAI*

## Faculty

**Name : ANKUR PACHAURI**

## Student

**Name : Sanka Anish (2012A7PS0040G)**

**Student Write-up**

**Tool used (Development tools - H/w, S/w) :** Neo4j Graph Database, Elastic Search, Pandas

**Objectives of the project :** Deduplication of supplier data

**Major Learning Outcomes :** Machine Learning, Python, Graph Theory, Graph Databases

**Details of Papers/patents :** The project will be filed for patent.

**Brief Description of working environment, expectations from the company :** Extremely supportive and led by a visionary.

**Academic courses relevant to the project :** Machine Learning, Graph Theory

## Name : Ayush Sharma (2015A3PS0240G)

**Student Write-up**

**Short Summary of work done during PS-II :** The project that I worked on was a chain of several engines including a computer vision component (optical character recognition engine) and an NLP engine which essentially encompasses a pipeline of text data transformations.

**Tool used (Development tools - H/w, S/w) :** Tesseract OCR, SpaCy — Python, Julia.

**Objectives of the project :** Goal of the project was to extract information from contracts that have non selectable text, process and bring out insights from the content

**Major Learning Outcomes :** Knowledge about Deep Learning, Data Mining, Natural Language Processing, Computer Vision, Metaprogramming.

**Brief Description of working environment, expectations from the company :** I was a part of Data Science Team at GEP Mumbai — which has members from various parts of the world — US, Spain, IIT Bombay, IIT Jodhpur, etc to name some. Work environment is pretty great — we worked directly under Senior Director of Data Sciences and were treated like a responsible employee because of which all of learned a lot. Environment is pretty informal and honest. It's really OK to know nothing about data science and join this team because there's a healthy knowledge sharing environment already in place within the team. Company expects

someone with a will to learn and deliver

**Academic courses relevant to the project :** Data Science team is small — around 8 people, with 15 projects distributed among them — from Big data to natural language processing, OCR, deep learning, chatbots to what not. Courses that are taught in campus are too much theory oriented in comparison. So it's better to explore some practical data science content online rather than relying on too much theory. In theory there's no difference between practice and theory, but in practice there is.

## Name : Alanckrit Jain (2015A8PS0327P)

### Student Write-up

**Short Summary of work done during PS-II :** I worked on two projects, both related to Machine Learning. One was based on short text classification and using of different modelling techniques to predict results on numerous parameters of clients' data. The other was based around identifying and removing similar duplicates of names in Data. Basic skills of Python were enough to start off with and necessary softwares and libraries were picked up along the way, as and when required.

**Tool used (Development tools - H/w, S/w) :** Microsoft Azure, Pandas, Elasticsearch, SQL

**Objectives of the project :** To develop an AI based Spends Classification Engine

**Major Learning Outcomes :** Learned to use elastic search and handle big data through it. Refined skills if python along with learning numerous modelling techniques and their usage.

**Details of Papers/patents :** A patent on Deduplication engine to be published soon

**Brief Description of working environment, expectations from the company :** The best and most professional work culture you'll find. A brilliant team to work with, providing enough space to innovate and be creative as well as getting an experience of working in a corporate.

**Academic courses relevant to the project :** DSA, DM, ML, Statistics

# *PS-II Station: GGK Technologies, Hyderabad*

## Faculty

### Name : Mr. Chennupati Rakesh Prasanna

## Student

### Name : Anook Immidisetty (2014B4A30761H)

**Student Write-up**

**Short Summary of work done during PS-II :** Web automation Test Suite. Identify some test scenarios, automate them and generate reports for the success or failure of the functionalities of the web service portal. And conclude about the working of the Web service portal.

**Tool used (Development tools - H/w, S/w) :** S/w: Selenium. Programming Language: Java

**Objectives of the project :** QA Testing. Test the web service portal of the company

**Major Learning Outcomes :** basic OOP concepts, like inheritance, encapsulation, abstraction, etc. Got acquainted with basic java programming language, Selenium automation tool.

**Brief Description of working environment, expectations from the company :** ultimately, communication with the manager mattered a lot to understand the proper expectations in the project work. Should not hesitate at all to ask our queries at any point during the PS 2 program. Company expects us to learn the skill and apply properly. If not able to cope up, it was very important to communicate and clarify the expectations of theirs from the beginning. Mainly, hard work mattered.

**Academic courses relevant to the project :** mainly Object Oriented Programming.

### Name : Mudit Gattani

**Student Write-up**

**Short Summary of work done during PS-II :** Creating a data preparation tool via wxPython which parses large size files, pushes it into Database(HBase) and provides an option for the user to do suitable operation(cleansing, editing etc.).

**Tool used (Development tools - H/w, S/w) :** WxPython, HBase

**Objectives of the project :** Building data preparation tool

**Major Learning Outcomes :** Python, SQL, MongoDB

**Brief Description of working environment, expectations from the company :** Company suitable for students who are not from Computer Science and want to enter in IT domain. Company is in expanding phase.

**Academic courses relevant to the project :** Objective Oriented Programming

## Name : Kaushik Mour (150855)

**Student Write-up**

**Short Summary of work done during PS-II :** For the first 2.5 months I was given training on MongoDB and told to learn Python, Python GUI. I am working on developing a data cleansing and preparation tool.

**Tool used (Development tools - H/w, S/w) :** Python, SQL, Python GUI

**Major Learning Outcomes :** Python, SQL

**Brief Description of working environment, expectations from the company :** The projects were not completely finalized by the company. They still had ambiguity as to exactly what they wanted. It did provide you time to learn topics at your own pace but someone who is not interested in working in IT field will have trouble coping here. Not all the projects were fruitful. Some of them were just given to keep the student occupied.

## Name : Harika Trikutam

**Student Write-up**

**Short Summary of work done during PS-II :** Web development and automation testing

**Tool used (Development tools - H/w, S/w) :** S/w- Ruby on Rails, Selenium

**Objectives of the project :** To complete the tasks given to me such that my work doesn't interrupt others' working in my team

**Major Learning Outcomes :** I learnt how to create and modify an application in Ruby on rails

**Academic courses relevant to the project :** Java, Cryptography

## Name : Katyayan aanand (2014B1A80724G)

**Student Write-up**

**Short Summary of work done during PS-II :** Development and Selenium Automation testing

**Tool used (Development tools - H/w, S/w) :** Ruby on rails, HTML, CSS, JAVA

**Objectives of the project :** Live project

**Major Learning Outcomes :** Learnt Development and automation testing

**Academic courses relevant to the project :** CP

## Name : AISHWARY JOSHI (2014B1A40633H)

**Student Write-up**

**Short Summary of work done during PS-II :** The duration was Practice school hovered over two technical oriented and one
business oriented concepts. Firstly, Data Analytics, where data from a renowned food chain was used to predict sales using previous trends spread annually and chalking out the key time period where sales were maximum. Following work was in the field of Business development where wireframes, mock-ups were created using the Functional requirements as per the client needs. The last section of training comprised of Structured Query Language, used in Database Management systems.

**Tool used (Development tools - H/w, S/w) :** Python Jupyter, SQL, Powerpoint

**Objectives of the project :** POC, Live project, Training

**Major Learning Outcomes :** Python Script, Data Analytics, Business development

## Name : Jyoti Vishnoi (2015A7PS0013P)

**Student Write-up**

**Short Summary of work done during PS-II :** MY project was mainly on web development. I was a part of a team of 20 members and the objective of the application was to help hospital staff in keeping track of patient's health and show the risk factor(if any for his/her health issue). My contribution was in Angular application(front end framework).

**Tool used (Development tools - H/w, S/w) :** visual studio, TFS, Azure.

**Objectives of the project :** analysis of patient's health

**Major Learning Outcomes :** Angular, Agile methodology

## Name : Aniket Agrawal (2014B2A40133P)

**Student Write-up**

**Short Summary of work done during PS-II :** Web services Automated Testing

**Tool used (Development tools - H/w, S/w) :** S/w - Selenium, Java

**Objectives of the project :** Development of Automated Testing Framework

**Major Learning Outcomes :** Basic Programming

**Brief Description of working environment, expectations from the company :** Don't keep any expectation from this company, if you are lucky you'll be allotted a project otherwise you'll have to spend 6 months 8.5 hours a day doing nothing. On the other hand this gives you lot of time to study for placements.

## Name : Debasmita Singha (2014A7PS0001P)

**Student Write-up**

**Short Summary of work done during PS-II :** User Experience research and visual design for different clients (Pair Up, Medforce, Lego)

**Tool used (Development tools - H/w, S/w) : Photoshop**, Axure, Adobe XD, Sketch

**Objectives of the project :** To make the app or website more user friendly

**Major Learning Outcomes :** Learned that your users are the ones that can make or break your company and it's important that every thing you create should be centred around them

**Brief Description of working environment, expectations from the company :** Working environment is good, it can be improved. They have a strict timing of compulsory 8.5 hours everyday which is not necessary

**Academic courses relevant to the project :** Performance design

## Name : Akshat Mishra (2014B1A20562P)

**Student Write-up**

**Short Summary of work done during PS-II :** Worked as a Business analyst on a healthcare project and worked on a POC on Restaurant Email marketing by building a recommendar systems using ML algos

**Tool used (Development tools - H/w, S/w) :** SQL, Python, Machine learning, C++, VBA.

**Objectives of the project :** Business analysis and Email marketing

**Major Learning Outcomes :** Business Development, Data science, Data analytics

**Brief Description of working environment, expectations from the company :** GGK Technologies , Hyderabad was allotted to students who wanted to have a first hand experience on how an IT company works like. This company gave all of us the exposure as most of us were from Non CS background. Proper time was given for training and subsequently we were allotted to different projects and and if anyone wanted to shift from one project to another one, they were allowed to do so. Basically, it was overall a good company if you are starting and want to start your career in IT industry.
Working environment was a bit hectic, they wanted us to work us more as they were paying more in just an internship. Overall from learning prospective, a nice company situated in uppal, gachibowli and kokapet offices spread around in Hyderabad

**Academic courses relevant to the project :** Machine learning, C programming,

## Name : R.Nirmal Sai Kuldeep

**Student Write-up**

**Short Summary of work done during PS-II :** Worked as a full stack Developer

**Tool used (Development tools - H/w, S/w) :** Java, AngularJS, Html

**Objectives of the project :** Our Project is about a web Application For Hospital Management

**Major Learning Outcomes :** Got Experience of Working in Office

**Academic courses relevant to the project :** OOPS

## Name : Tanveer Singh Hora (2015AAPS0253H)

**Student Write-up**

**Short Summary of work done during PS-II :** Ethereum blockchain based project which included smart contract code writing, UI/UX design and POC. Also worked with Hyperledger blockchain.

**Tool used (Development tools - H/w, S/w) :** Truffle framework, Ganache, Solidity, Angular, Bootstrap, Hyperledger Composer

**Objectives of the project :** Implementing smart contract, creating website platformand POC for client project Sportist

**Major Learning Outcomes :** Blockchain and its applications, UI/UX design

**Academic courses relevant to the project :** OOPS, Cryptography

## Name : Mohit Parashar (2015A2PS0540H)

**Student Write-up**

**Short Summary of work done during PS-II :** Worked on an internal project of making a question answer interface for the company like Stack Overflow using ReactJS and Redux.

**Tool used (Development tools - H/w, S/w) :** ReactJS, Redux

**Objectives of the project :** Was to make a company specific question answer platform

**Major Learning Outcomes :** Application of front end languages like java script, React java script, react-redux etc.

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## *PS-II Station: GOLDMAN SACHS*

## Faculty

### Name : Shekhar Rajagopalan

## Student

### Name : Prabhat (2015A1PS0772)

**Student Write-up**

**Short Summary of work done during PS-II :** Played the role of a Project Manager/Business Analyst. Instead of working on one main project, I had the opportunity to work on several different projects in different domains. The work also involved data blending.

**Tool used (Development tools - H/w, S/w) :** Alteryx, Tableau, Excel

**Objectives of the project :** Trade Harmonization Across Europe

**Major Learning Outcomes :** Project Management Skills, Corporate Culture

**Brief Description of working environment, expectations from the company :** Working environment is good. Working hours may extend upto 10-11 hours per day.

**Academic courses relevant to the project :** Financial Management

### Name : Arihant Ranka (2015A1PS0653P)

**Student Write-up**

**Short Summary of work done during PS-II :** Robotic Process Automation and Business Intelligence

**Tool used (Development tools - H/w, S/w) :** Automation Anywhere

**Objectives of the project :** Bot Development

**Major Learning Outcomes :** BUSINESS analyst tools

## Name : Aakash Aggrawal (2015A1PS0770P)

**Student Write-up**

**Short Summary of work done during PS-II :** Worked for independent review of Equity derivative structured trades.

**Tool used (Development tools - H/w, S/w) :** Excel, GS internal softwares

**Objectives of the project :** Reduce operational risk

**Major Learning Outcomes :** Derivatives

**Brief Description of working environment, expectations from the company :** Team environment was excellent.

## Name : Chitra (2015B3TS0967P)

**Student Write-up**

**Short Summary of work done during PS-II :** It seems only last week I was collecting my ID from Goldman Sachs and now PS-2 has come to an end. These past 5 months have flown by and I will not forget the lessons I learnt here. I interned in the Operations Division of the firm, in the Securitized Products Services team. In the beginning, I was unsure about how to carry myself in a corporate environment, that too in a corporate giant such as Goldman Sachs. The first few weeks I spent observing carefully my team, how they carry themselves and commit to their work. It didn't take as long as I expected to blend into the corporate environment. The Goldman experience helped me understand how the corporate world looks and works like.
It helped me apply my technical knowledge to practical scenarios, transitioning from learning in college to application in the firm. This was my first internship where my

work had an important role to play in the day-to-day performance of the team. The learning curve for the first few weeks was very steep and I was trained on the day to day function of the team. I had to make sure that all the legal documents needed for a trade to happen are in on time and they have been approved by the reviewing teams. I also had to ensure that all the trades are executed on time according to different deadlines of different markets and correctly. In addition I had to make journal entries for different invoices. Then I started working on my project in addition to day-to-day functions. That helped me learn about how the trader commission account is maintained and how we maintain a journal of different transactions. There were no special skills required to the job except for a very basic know-how of Excel. However, it is pretty helpful to do a few finance courses as it just improves the understanding of what the team is doing and how it relates to the industry as a whole.

**Tool used (Development tools - H/w, S/w) :** Excel, Visual Basic for Applications, SQL

**Objectives of the project :** To find and understand the breaks in trader commission account, caused by incorrect timing or amount of debit/ credit and create an automated tracker that identifies the breaks, reconciles all the reports and help resolve that break which will save a lot of time of team which can be utilized for other critical tasks. It aims to improve efficiency and save time.

**Major Learning Outcomes :** I gained a significant amount of knowledge regarding the international market and trading world from my team.
The project gave an insight of how the trader commission account works and how the settlements are done and how the data flows from different systems. It also gave me an in-depth knowledge of how books and records are maintained, how the breaks are captured and resolved and how an automated tracker is created.
I also learnt about data warehousing, data visualisation and analytical reporting tools through Data School sessions conducted by Goldman Sachs. My knowledge and interest in the financial sector has risen along with the development of soft-skills that are essential in the modern office space. I also learnt how to manage my time and plan ahead to meet deadlines.

**Brief Description of working environment, expectations from the company :** I have observed how my team covers for others when someone is on leave, which reinforces the importance of teamwork in the success of any organization. The essentialism displayed by my team when it comes to communication as well as handling issues is surely something which I have imbibed during the course of my internship. Also, the humility displayed by the Vice Presidents and Group Leaders has left a deep impact on me. I look up to these people and strive to achieve excellence in every walk of life. A rise in patience, determination and the ability to work hard are the key takeaways from this internship. I also learnt the value of cultivating professional relationships. In today's world it is not just enough to do exemplary work but networking is also required to excel as a professional. In all, it has been an enriching experience and I am thankful to PS-2 for giving me the opportunity to work with Goldman Sachs.

**Academic courses relevant to the project :** Fundamentals of Finance and Accounting, Derivatives and Risk Management, Financial Management, Financial Engineering

## Name : Shubham Ratna Ostwal (2015A2PS0801P)

**Student Write-up**

**Short Summary of work done during PS-II :** Trader reviews- The work was to analyze and eliminate the operational risk involved with different trades by correctly capturing it in internal systems against the legal binding document.

**Tool used (Development tools - H/w, S/w) :** Alteryx, Tableau, MS-excel, Outlook

**Objectives of the project :** Analysis and Elimination of Operational Risk

**Major Learning Outcomes :** Alteryx, Tableau, Derivatives, Risk Analysis

**Brief Description of working environment, expectations from the company :** Goldman Sachs has a very healthy working environment. Basic knowledge of MS-office comes handy. The students are properly trained according to the needs of the particular team and start to work on different products in parallel.

**Academic courses relevant to the project :** Derivatives and Risk Management

## Name : M Mahitha (2015A8PS0431P)

**Student Write-up**

**Short Summary of work done during PS-II :** The team I had to intern in was the probably one of the most finance inclined teams in operations. We had to review trades to ensure that there aren't any mistakes in them as it could cost the firm quite much.

**Tool used (Development tools - H/w, S/w) :** Firm specific software, knowledge in excel is beneficial

**Objectives of the project :** To ensure that operational risk associated with the trades are minimised

**Major Learning Outcomes :** Professional conduct, deeper knowledge of derivatives.

**Brief Description of working environment, expectations from the company :** Very professional, there's room for an intern to learn a lot. Being mindful about things is what they expect from us.

**Academic courses relevant to the project :** DRM is sufficient

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## *PS-II Station: Goodera, Gurgaon*

## Faculty

### Name : Saleem Baegwadi

## Student

### Name : Rayapureddi Mohit Anand (2015A2PS0752P)

**Student Write-up**

**Short Summary of work done during PS-II :** I work as a product management intern in the volunteer section of the Goodera. I handled the finance part of donations, helped in product testing, created analytics dashboard for volunteering events and miscellaneous other assignments. My work also included preparing ppts about the product, this included features, roles in the product, workflow of various processes, etc. Product managers and sales team to pitch clients in India and abroad used these. I had a chance to collaborate and work with various teams including developers, designers, marketing, sales, consultants, sourcing , etc . As a product intern this was a part and parcel of my wok.

**Tool used (Development tools - H/w, S/w) :** SQL, excel, metabase, company specific software.

**Objectives of the project :** product testing, Donations management, etc

**Major Learning Outcomes :** multi tasking, SQL, basics of python, corporate communication, etc.

**Brief Description of working environment, expectations from the company :** Our section is at a stage where the growth is rapid and the scope is immense in and outside India. It was a great opportunity to work in a section which

was at the early stage of development. The people were really great and offered me support whenever needed.

## Name : Kriti Khandelwal (2014B1A10510P)

### Student Write-up

**Short Summary of work done during PS-II :** The work involved managing and evaluating strategies to carry out CSR initiatives by the corporate clients. For doing so, I had to interact with partner NGOs, collect data, analyse it and then produce it in a manner desired by the client on the dashboard. I had to manage accounts and data for client-centric projects. The company carries out various exercises like Impact Assessment studies in which I had to provide my assistance. I also carried out designing for dashboards and provide logic for the same, hence, acting as a link between the technical team and the clients.

**Tool used (Development tools - H/w, S/w) :** MS Excel, MS Word, MS Powerpoint

**Objectives of the project :** Key Account Management for Corporate clients

**Major Learning Outcomes :** I have gained in-depth knowledge about different kinds of sectors and associated strengths and gaps. I have realized the importance of presenting data in an appropriate manner, efficient time management, proper documentation and presentation delivery to the corporates. One important skill that I have learnt is "Less is More".

**Brief Description of working environment, expectations from the company :** The work environment is quite friendly. The team is well bonded with a mix of experienced and young members. The company does not follow a hierarchy system and has a peer system which enabled us to work directly under the senior members and also interact with clients.

**Academic courses relevant to the project :** Human resource development, Current Affairs

## Name : Atish Kumar Sinha (2014B2A30958G)

### Student Write-up

**Short Summary of work done during PS-II :** I was basically involved with development of dashboards for various clients for
and their various CSR projects.

**Tool used (Development tools - H/w, S/w) :** HTML,CSS,JAVASCRIPT,

NODE, REACT

**Objectives of the project :** To learn Web development and build dashboards

**Major Learning Outcomes :** Getting in depth knowledge of HTML, CSS and JavaScript, Learning about MongoDB and how to write its queries.

**Brief Description of working environment, expectations from the company :** The working environment is pretty good. There is some times a lot of pressure (generally when you are near to the deadlines and have few deliverable at your end which are not finished. (This may be due to the work being overloaded)). Apart from this everything is pretty good.

## Name : AMAN KUMAR GOSWAMI (2015A8PS0473G)

**Student Write-up**

**Short Summary of work done during PS-II :** Work will be mostly related to building digital dashboards, both back-end and front-end. Apart from that I was also assigned API Integration for which I had to write few Python scripts.
In this PS station, you will be expected to deliver work on time. They will treat you as full time employees and not interns. Each day a minimum of 9 hours of work is compulsory.

**Tool used (Development tools - H/w, S/w) :** HTML, CSS, JavaScript, React, MongoDB, Python

**Objectives of the project :** Building of Digital Dashboards and API Integration

**Major Learning Outcomes :** Got a good grasp of HTML, CSS, JavaScript, React, MongoDB, Python etc.

**Brief Description of working environment, expectations from the company :** The working environment of the company is good, if not great. Sometimes it gets extremely hectic and the work pressure will be tremendous.

## Name : Sanskriti Shrivastava (2015A3PS0184G)

**Student Write-up**

**Short Summary of work done during PS-II :** basic work is to develop dashboards using web development ....frontend and backend(if given).The work will be repetitive .Don't come under the influence of work description in provided by compnay. work is pure web d.

**Tool used (Development tools - H/w, S/w) :** HTML, CSS, js, react

**Objectives of the project :** develop dashboards for various clients. For e.g. make a card to show how many women got employed in an NGO in a year/month/quarter/school/village/block etc.

**Major Learning Outcomes :** web development and mongo DB query writing skills.

**Brief Description of working environment, expectations from the company :** company expects work of 9 hours from every intern and timely delivery of tasks.

## Name : Shubham Tripathi (2015A2PS0711P)

**Student Write-up**

**Short Summary of work done during PS-II :** The project work involved understanding of Memorandum of Understanding
signed between the two clients, Creation of LFA, Design of intelligent dashboards, Creation of Linking Sheets for the said dashboards to make them dynamic, Analysis of data uploaded, and Project Progress Report preparation for effective communication with the client.

**Tool used (Development tools - H/w, S/w) :** Goodera Enterprise, MS Office

**Objectives of the project :** Key Account Management in CSR Consulting

**Major Learning Outcomes :** Development of professional communication skills, Knowledge about Company's Act , Fluency in using MS Office, Basic analytical Skills, Key Account Management.

**Brief Description of working environment, expectations from the company :** The working environment in the organisation is awesome. People here are very helpful and supportive. Relevant discussions regarding work are always round the corner and the best part is you won't be feeling left out at any point of time.

**Academic courses relevant to the project :** Principle of Economics, Technical Report Writing

# *PS-II Station: Grasim Industries Ltd. (Nagda)*

## Faculty

### Name : Prof. Samir Kale

## Student

### Name : Sanchit Saxena (2015A1PS0634G)

**Student Write-up**

**Short Summary of work done during PS-II :** We ( team of 2 members) were alloted 'viscose' department in the industry. After gaining knowledge on the working of the processes involved in the viscose department , we carried material balance around a system to evaluate certain parameters. Our project also included energy balance across two systems and TR load calculation. Our major projects were to design a Heat Exchanger across a system to achieve desirable temperature (design project), to recommend methods to reduce variations in make-up of AlkCell mat (research project). During the course, we were given side projects as well including calculation of pneumatic line size for transportation of fluid, flash calculation etc.

**Tool used (Development tools - H/w, S/w) :** Microsoft Excel spreadsheet

**Objectives of the project : -**To design a heat exchanger around a system, considering the various existing restrictions. - To recommend methods to reduce variations in the make-up of AlkCell Mat

**Major Learning Outcomes :** Scale-up operations and designing of process equipment

**Brief Description of working environment, expectations from the company :** Your experience at Grasim Industries Ltd. , Nagda depends on the level of enthusiasm shown by you. The mentors allotted to students here are professional and highly skilled and they are more than willing to share their knowledge with students, given they show interest and engage in healthy discussions with them. Do let them know the type of project you want to do and they will allot you projects accordingly.

**Academic courses relevant to the project :** Heat Transfer, CPC, Fluid Dynamics, PDP-II

## Name : Rudra Singh Rathore (2015A1PS0562G)

**Student Write-up**

**Short Summary of work done during PS-II :** We designed a Plate heat exchanger which can replace the currently installed shell and tube heat exchanger to achieve a lower lye temperature of 40 degrees Celsius at which higher swelling and dissolution of the pulp used in the process takes place to get a higher quality of viscose fibre. We also did a project to analyze the process at twin roll press and provided recommendations to reduce the variations in the % alkalinity and % cellulose content of the Alkali-Cellulose mat formed at twin roll press.

**Tool used (Development tools - H/w, S/w) :** Microsoft Excel

**Objectives of the project :** Enhancing the process efficiency in Viscose department

**Major Learning Outcomes :** Working experience on industrial scale and practical applications of chemical engineering

**Academic courses relevant to the project :** Heat Transfer, Thermodynamics, Fluid mechanics, Process design principles

## Name : Ravi Teja V S (2015A1PS0544H)

**Student Write-up**

**Short Summary of work done during PS-II :** Controller performance analysis and monitoring

**Tool used (Development tools - H/w, S/w) :** Matlab and Simulink

**Objectives of the project :** To have a first hand report on a controller with all the vital information for fault detection

**Major Learning Outcomes :** Real industrial application exposure along with improvement in the skills of MATLAB and Simulink

**Academic courses relevant to the project :** Process Design and Control, Modelling and Simulation

## Name : L SAI SUHAS REDDY (2014B5A10878P)

**Student Write-up**

**Tool used (Development tools - H/w, S/w) :** Excel

**Objectives of the project :** Increase the salt whiteness

**Major Learning Outcomes :** Sodium sulphate production and market cost and usage

**Academic courses relevant to the project :** Thermodynamics , heat transfer

## Name : Yadul Sethi (2015A1PS0522P)

**Student Write-up**

**Short Summary of work done during PS-II :** 1.) Fault detection in Control valve using statistical tools and index like spectral analysis, non-linearity test, saturation index etc.
2.) Modelling of Pulping Process using physical and empirical methods.

**Tool used (Development tools - H/w, S/w) :** MATLAB , Python, Advanced Excel

**Objectives of the project :** Application of data analytics tools in chemical engineering

**Major Learning Outcomes :** Application of data analytics tools in chemical engineering**.**

**Brief Description of working environment, expectations from the company :** Don't expect any other thing apart from the work.

**Academic courses relevant to the project :** Modelling and simulation, Process dynamics and control

## Name : Nagendra Babu (2014A1PS0830G)

**Student Write-up**

**Objectives of the project :** Enhance the efficiency of the spinning department

**Major Learning Outcomes :** An experience of the industrial exposure.

**Academic courses relevant to the project :** Process Engineering

# *PS-II Station: Groww*

## Faculty

### Name : Raja Vadhana P

## Student

### Name : Sugam Singla (2015A4PS0339P)

**Student Write-up**

**Short Summary of work done during PS-II :** I worked on lot of projects. I designed referral program with the incentive system and nudges. I was working under the CXO's directly on many projects. I learnt about product thinking, building fast and how you ship products in scrum framework.
Initially, I learnt basics of data analytics and using MySQL, ProgreSQL, GA, Excel, Firebase and some other third party services.
I was also handling a new product while beta testing along with CEO for around 3 months. This involved crunching and understanding a lot of data and making sense out of it. I was collaborating with design team, developers, content and data team.

**Tool used (Development tools - H/w, S/w) :** MySQL, ProgreSQL, Google Analytics, Excel, Firebase, Webengage, Metabase

**Objectives of the project :** Many objectives as specified already

**Major Learning Outcomes :** All in all, it was great learning experience for me with everyday learning something new about how to make great products and obsessing over the customer.
Learnt about product management and product lifecycles. How to collaborate in small teams and ship products faster.
I was given ample of ownership on some upcoming projects and since the team is very experienced, it was an amazing way to spend six months.

**Brief Description of working environment, expectations from the company :** The company is great to work in every sense of working. There are

literally no rules and regulations and you've complete freedom of putting across your ideas. Everyone is very friendly and they have few BITSians too.
We have roughly 2 outings during my time here and it was fun (as you would expect in a startup).

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# *PS-II Station: HAPPAY (VA Tech Ventures Pvt. Ltd.), Bangalore*

## Faculty

### Name : Ms. Lucy J. Gudino

## Student

### Name : Raunak Ritesh (2015A7PS0160H)

**Student Write-up**

**Short Summary of work done during PS-II :** The project consisted of 2 parts, the first at building an Invoice Parser to extract important attributes like GST, Total Amount, Date, Merchant etc. from an Invoice and classify the bills into segments to improve the company's existing AI-powered Enterprise Edition. The second part of the project is to build a dashboard, integrate the frontend and backend, and verify the parsed data and make necessary changes.

**Tool used (Development tools - H/w, S/w) :** Google Cloud Vision, Django, Python, IBM's Watson Studio, Docker, Git, Postgres

**Objectives of the project :** Build a Micro-Service (Invoice Parser) to extract various attributes like GST, Amount, Merchant etc. for clients to fast-track their expense creation.

**Major Learning Outcomes :** Brainstormed on product designs, implemented the project from scratch, wrote the parser, and created the backend support of a CMS to verify and make necessary changes to the parsed data. Worked on RESTful APIs, Django, Docker, Git and Postgres.

**Brief Description of working environment, expectations from the company :** Happay as a workplace is really good. Projects will be assigned after a

month of training and segregation into groups. They have their own web app - Happay Expense Management App for Companies. Like Sap, ERP systems type, so students will be directly working on the app. There are various components in the app like Accounting (Pandas related), Travel (just like MakeMyTrip) etc, so in general it is backend work, writing API's, improving existing features or, coming up with new features and so on.

Students can work on multiple roles side by side like backend + frontend, or product management. Their codebase is on Django + Postgres. Almost everything that students learn in software development is here (Servers, celery etc). There are enough options to work from home and take leaves. Office time is 10:30 to 6:30.

**Academic courses relevant to the project :** Machine Learning (A mini project can be assigned on OCR)

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# *PS-II Station: HCL Technologies Ltd., Pune*

## Faculty

### Name : Sonika Chandrakant Rathi

## Student

### Name : Shivam Gusain (2015A8PS0293P)

**Student Write-up**

**Short Summary of work done during PS-II :** I worked on a software called CAMWorks with the team which has been involved in its development for quite some time. CAMWorks is a powerful tool which acts as plugin to SolidWorks and has incredible importance in Manufactoring Industry. I worked on it under my mentor who decided which partivular issues should be allotted to me in ascending order of difficulty as the bar for entrance into this particular field is set quite high. This is due to high number of dependencies and libraries involved in the process of development and knowledge of the software itself and what it does is not something a CS student would be aware of.

**Tool used (Development tools - H/w, S/w) :** Microsoft Visual Studio, Jira, Tortoise SVN

**Objectives of the project :** To Make Manufacturing process easier

**Major Learning Outcomes :** Learned software development and teamwork

**Brief Description of working environment, expectations from the company :** Working environment is great and colleagues were incredibly helpful and supportive.

**Academic courses relevant to the project :** OOP, OS, DSA

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## *PS-II Station: HCL Technologies, Bangalore*:

## Faculty

### Name : Vimal S P

## Student

### Name : Karan Attri (2015A3PS0129G)

**Student Write-up**

**Short Summary of work done during PS-II :** The assignments given required the knowledge of HTML5,CSS3, Javascript, React JS,Jest and Canvas. The final project was to be done using React JS. But I had to learn HTML5, CSS3, JavaScript and Canvas before starting React JS. Assignments were given regularly based on these topics to help me in better understanding of the topics. The common components were delivered using React JS.

**Tool used (Development tools - H/w, S/w) :** HTML,CSS,JavaScript,React JS

**Objectives of the project :** To deliver user interface common components using React JS

**Major Learning Outcomes :** User Interface web development

**Brief Description of working environment, expectations from the company :** The working environment depends totally on the team. I was fortunate to be in a team that supported and guided me well throughout the internship. They

were very patient during the learning process and always very helpful.

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# *PS-II Station: Healthcare Technology Innovation Center, Chennai*

## Faculty

### Name : P. R. Deepa

## Student

### Name : Smriti Muralishankar (2015AAPS0972H)

**Student Write-up**

**Short Summary of work done during PS-II :** I have learned how to design a User Interface using Qt Creator, a software used to build User Interfaces. I have also learned about DICOM and how to implement it across different devices. Another thing I have learned is how to use GitHub and Bitbucket as a means to share and develop code. Lastly, I have learned about the Software Development Life Cycle (SDLC), and have observed and participated in carrying out each step of the process in real time.
The User Interface I have designed is now being used for demonstrations to clients who have given requirements for the Bronchoscope. DICOM is being used to share medical information between equipment. My roles in the SDLC have also contributed to the final stages of testing and debugging the system software of the bronchoscope.

**Tool used (Development tools - H/w, S/w) :** Bronchoscope, Qt Creator, Linux, DICOM Viewer, DICOM library

**Objectives of the project :** The main aim is to develop parts of the system software of the Bronchoscope. The objectives of this project include: 1. Implementing DICOM in the Bronchoscope and a connected PC for file and data sharing 2. Designing the User Interface using Qt Creator 3. Integration of interface and physical components 4. Testing and fixing bugs in the scope's software

**Major Learning Outcomes :** DICOM, UI Design using Qt Creator, Bitbucket,

GitHub, SDLC

**Brief Description of working environment, expectations from the company :** HTIC has a transparent and open environment, where everyone's opinion is considered. It is also training and development focused, as HTIC really cares about training interns, and deploys the proper personnel for the task. They are considerate and try to give holistic exposure to the different sectors of work being done. There is strong team spirit in the workplace, as most, if not all projects are done by large teams. People are always willing to lend a helping hand.

**Academic courses relevant to the project :** EEE F348 FPGA Based System Design Laboratory
EEE F435 Digital Image Processing

## Name : GSKP Srikar

**Student Write-up**

**Short Summary of work done during PS-II :** Image Segmentation

**Tool used (Development tools - H/w, S/w) :** Python, Matlab, Ilastik, Tensorflow, numpy, pandas

**Objectives of the project :** Image Segmentation

**Major Learning Outcomes :** Deep Learning, Python Programming, Machine Learning

**Brief Description of working environment, expectations from the company :** Timings : 10AM-7PM | Timings depends on the team you are working in.
Work is result oriented. Stress free since many IIT students are there.
Since, the accommodation is provided in IIT Madras Campus itself, you can work late-night along with few Project Associates/MSc students.Hence, timings are flexible (depends on team).
Expectations from Company: Take-up initiatives. Be good at programming (Python in my team). Strong basics in the subject. Be PRESENT. Don't expect to be spoon fed.
Pros to PS Student:
1. If shown good performance in PS, you a get a chance to continue here after B.E. and do an MSc in IIT Madras with Prof recommendation (The company is headed by an IIT Madras Professor.
2. Since research work is going on in HTIC, you might get to publish a paper if lucky.
Cons:
1. Accom @ IIT Madras Hostel: DO NOT expect to be as good as BITS hostel. You need to pay for IIT hostel. HTIC just gives permission to stay in IIT)
2. Very poor stipend(10k).

Contact me for more details

**Academic courses relevant to the project :** Artificial Intelligence, Machine Learning

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# *PS-II Station: HealthCubed India Pvt. Ltd., Bangalore*

## Faculty

### Name : Dr. P.R.Deepa

## Student

### Name : Sneha Singh (2015A5PS0874H)

**Student Write-up**

**Short Summary of work done during PS-II :** HealthCube is an integrated, tablet-based portable instrument which is capable of running several POC diagnostic tests and help in faster clinical decision. It incorporates a range of urine and finger prick based rapid diagnostic tests along with diagnostic algorithms and applications for patient registration and medical records. It is paired with smartphone- and cloud-based applications for patient registration, machine-learning based contextual diagnostic algorithms, medical records, payment, and referrals.
Worked done can be classified as:
1. Integration- This included paneling, adding new features to HealthCube
2. In-house Validation- This includes the precision and accuracy studies done on diagnostic tests.
3. Troubleshooting- It included brainstorming for the issues being faced by us on field.
4. Quality Protocols- Working on IQC(Incoming Quality Checks) etc

**Tool used (Development tools - H/w, S/w) :** Excel, Data Analysis and Interpretation, Data Handling, Scientific Report Writing

**Objectives of the project :** REAGENT INTEGRATION -Adding Specification to HealthCube Device

**Major Learning Outcomes :** Got a hand on
Microsoft Excel, Data Analysis an Interpretation, Report Writing, Quality Standards

for Medical Products which include ISO 13548, ISO 9000 etc. , also learnt to file Root Cause Analysis (RCA), CAPPA etc

**Academic courses relevant to the project :** Biochemistry, Technical Report Writing, Probability and Statistics

### Name : Mrunal Bhattad (2015A5PS0950P)

**Student Write-up**

**Short Summary of work done during PS-II :** Research work has been done. A brief literature survey has been done to understand the basic principle and requirements of the new tests that have been incorporated within our tenure. Also, to resolve all the issues faced on the field, troubleshooting has been done for every complaint received. From the quality and regulatory perspective, documentation has been done in form of templates, lists, forms and records including reports. Eg. CAPA form, supplier evaluation list, FMEA records. Actual field exposure was experienced during clinical trials.

**Tool used (Development tools - H/w, S/w) :** MS-Excel, google spreadsheets and docs.

**Objectives of the project :** HealthCube is the medical diagnostic device supporting 25 tests with the aim of creating solutions at Point of Care for healthcare. Our vision is to move the society from reacting to illness to managing wellness. Our objective is to develop new assays/tests so as to expand the portfolio of tests on our device and to make the device interface user friendly.

**Major Learning Outcomes :** Excel, data analysis and statistics, documentation of records.

**Academic courses relevant to the project :** Quality assurance and regulatory affairs, Biochemistry.

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## *PS-II Station: Here Maps*

## Faculty

### Name : Dr. Ankur Pachauri

# Student

## Name : Samarth Bhalerao (2015A8PS0433P)

**Student Write-up**

**Short Summary of work done during PS-II :** Worked on graph databases to handle complex spatial queries and also created a data flow pipeline to updtae the data stored in real time using Kafka queues. Also created a NodeJs application to make the complete setup user friendly by creating API endpoints for different purposes

**Tool used (Development tools - H/w, S/w) :** Neo4j, Java, Node js

**Objectives of the project :** Execute complex spatial queries and update data stored in database in real time.

**Major Learning Outcomes :** Java, Node js, exposure to Cloud platforms

**Academic courses relevant to the project :** OOP, DBMS,DSA

## Name : Gautham Muppalla (2014B2AA0781H)

**Student Write-up**

**Short Summary of work done during PS-II :** The project gives a core insight of the way the company's main tool works and gave me an opportunity to provide a new functionality.

**Tool used (Development tools - H/w, S/w) :** Eclipse, ELK Stack.

**Objectives of the project :** Quality maintenance by providing a two-stage functionality for map-editing and capturing the changes.

**Major Learning Outcomes :** Java Programming, ELK Stack

**Brief Description of working environment, expectations from the company :** Good exposure to programming is needed, Java being the basic language. Having exposure to Machine Learning is also welcome as there are number of projects related to this field.

**Academic courses relevant to the project :** JAVA, DBMS, ML

## Name : Aditya Agarwal

**Student Write-up**

**Short Summary of work done during PS-II :** Lane detection using aerial imagery and dash cam imagery. I worked in the lanes team in Nesco office. My first problem statement was to build a black box which inputs an aerial image and outputs geo-referenced lane lines on it. My second problem statement was to detect lanes on dash-cam images.

**Tool used (Development tools - H/w, S/w) :** PyCharm , AWS , MapBoxStudio

**Objectives of the project :** Lane Detection

**Major Learning Outcomes :** Real world application of Neural Networks , Using TensorFlow, AWS services like EC2, EBS, s3

**Brief Description of working environment, expectations from the company :** They have an open door work environment. Best part about the company is being to able to solve a new problem everyday and hence I learnt a lot even when I had zero experience in working on deep learning.

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# *PS-II Station: Here Technologies*

## Faculty

### Name : Dr. Ankur Pachauri

## Student

### Name : Dhruval Rana (2014B1A30222P)

**Student Write-up**

**Short Summary of work done during PS-II :** I was required to develop a parking sign classification model using deep learning and introduce parallelization using Multiprocessing library in Python for optimizing the output time and memory. A month into the internship, I pivoted to text recognition strategies and basic NLP to make sense of parking sign data. By the end of the internship, I was optimizing the

DL and NLP models and using basic classifiers to cluster data points which would be combined with the models for verification, completing the pipeline.

**Tool used (Development tools - H/w, S/w) :** Python, AWS, Jupyter

**Objectives of the project :** Creating an end to end pipeline for making sense of parking signs.

**Major Learning Outcomes :** Practical application of deep learning model, Knowledge of hyper parameter tuning, Parallelization techniques, basic NLP, AWS familiarity

**Brief Description of working environment, expectations from the company :** The working environment is very relaxed and you wont find yourself stressed irrespective of whether you find your work interesting or not. Work hours are flexible, the only expectation is that you think scientifically about solving the problem assigned to you and pace yourself well with the rest of your teammates so that there are no backlogs. There's a huge focus on exploring novel methods to harness useful information out of the data available and if you are lucky you might find very exciting work too. For the unfortunate ones, there's a PS-4 and TT table.

**Academic courses relevant to the project :** Machine learning, Digital Image Processing, Neural Networks and Fuzzy Logic

## Name : Vatsal Bhanderi (2015A7PS0008G)

### Student Write-up

**Short Summary of work done during PS-II :** The main idea of the app was to take the user's GPS location, i.e. latitude and longitude coordinates, using the location services from the user's device, and showcase the nearby Places of interests around the user. The data is wrapped around with Augmented Reality, to make the app more appealing and attractive.

**Tool used (Development tools - H/w, S/w) :** Unity, C#, Vuforia

**Objectives of the project :** Build an app which can show the user the Places of Interests nearby them.

**Major Learning Outcomes :** Unity, Augmented Reality

**Brief Description of working environment, expectations from the company :** The working environment is very relaxed and you wont find yourself stressed irrespective of whether you find your work interesting or not. Work hours are flexible, the only expectation is that you think scientifically about solving the problem

assigned to you and pace yourself well with the rest of your teammates so that there are no backlogs. There's a huge focus on exploring novel methods to harness useful information out of the data available and if you are lucky you might find very exciting work too. For the unfortunate ones, there's a PS-4 and TT table.

### Name : Lohith Karlapudi

**Student Write-up**

**Short Summary of work done during PS-II :** Pattern recognition in Human Behavior to eliminate any kind bias shown by a QA towards a user.

**Tool used (Development tools - H/w, S/w) :** Python, Excel.

**Objectives of the project :** To eliminate any kind bias shown by a QA towards a user.

**Major Learning Outcomes :** Machine Learning on an industrial level. Python and SciKit learn Libraries.

**Brief Description of working environment, expectations from the company :** A really good company. Not too much pressure on completing the project rather they focus on trying out something new and also encourage learning.

**Academic courses relevant to the project :** NNFL, ML , Data Mining.

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## *PS-II Station: Hero MotoCorp, Neemarana*

## Faculty

### Name : MK Hamirwasia

## Student

### Name : Harshit Khandelwal (2015A4PS0164G)

**Student Write-up**

**Short Summary of work done during PS-II :** For my Direct Area project, Productivity improvement through waste elimination in Engine Assembly Scooter Line, I had to do work study of the Engine Assembly process, make standard formats based on waste elimination methodology and improve productivity by either work redistribution or by work reduction. Apart from that I also made variable volume setup and implemented them on assembly line. I also made setups for multi model production on a single production line.

For my Indirect Area Project, I redesigned the layout for Waste Management Yard. The major constraints being lack of space for adding new machines and facilities. Apart from that the new design should also decrease material and operator movement & optimize operator efficiency.

**Tool used (Development tools - H/w, S/w) :** Standard formats for Waste Elimination Methodology, Handheld video camera for making process videos and measuring tape for measurements

**Objectives of the project :** Direct Area Project: Improve productivity of Engine Assembly Line to reach company target: Indirect Area Project: Space Optimization

**Major Learning Outcomes :** I can now do independent Work Study of an assembly line, make setups for assembly line depending on the demand, have knowledge of waste generated during manufacturing process & how to treat those waste in a practical & economical manner.

**Brief Description of working environment, expectations from the company :** Learning and Result driven environment where all the senior members are helpful and eager to share their knowledge of the area they are managing. Similarly, efforts are expected from the students to be punctual and efficient in their projects.

**Academic courses relevant to the project :** Production Planning and Control

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## *PS-II Station: HINDALCO INNOVATION CENTRE*

## Faculty

### Name : Prof. Pavan Kumar

## Student

## Name : Mohit Chandel

**Student Write-up**

**Short Summary of work done during PS-II :** Analysis of aluminum rolling data and development of tools related to it.

**Tool used (Development tools - H/w, S/w) :** R Studio.

**Objectives of the project :** To develop tools to analyze aluminum rolling data using Rnprogramiing language

**Major Learning Outcomes :** Learnt R programming
Learnt statistical analysis
Learnt graphical analysis

**Brief Description of working environment, expectations from the company :** Good working environment. Everyone is helpful and nice.

**Academic courses relevant to the project :** Material Science, Metal Working and Machining, Computer Programming

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# *PS-II Station: Hindustan Unilever Research and Development Centre*

## Faculty

### Name : Samir kale

## Student

### Name : Belide Sai chandu (2015A1PS0700H)

**Student Write-up**

**Short Summary of work done during PS-II :** We have worked on developing a

preliminary model for fluidised bed dryer which can help in predicting the drying kinetics based on the drying conditions of the fluidised bed dryer.We have estimated the parameters in model by doing different set of experiments with varying drying conditions and model predictions were done and compared with experimental work.

**Tool used (Development tools - H/w, S/w) :** MATLAB for Model predictions

**Objectives of the project :** Finding the effect of drying conditions on rate of drying and then optimising the design or operation of dryer through model

**Major Learning Outcomes :** Modelling work,Model development, what kind of challenges and how to solve those challenges**.**

**Brief Description of working environment, expectations from the company :** For me, my manager has given freedom on what kind of model to use and also what experiments to do for parameters estimation in model. They company expects dedication, smart work ,sincerity in putting right kind of efforts towards the work and punctuality.

**Academic courses relevant to the project :** Drying, mass transfer, heat transfer,chemical process calculations.

## Name : Priyanka Prajapat

### Student Write-up

**Short Summary of work done during PS-II :** In Photodynamic Therapy, the absorption of light by a chromophore generates cytotoxic species such as reactive singlet oxygen, leading to irreversible destruction of the treated tissue. The measurement of the singlet oxygen quantum yield ($\varphi\Delta$) is an important determinant used to evaluate the efficiency of new photodynamic therapy agents developed in the laboratory, to screen potential photosensitizers in aqueous media.
The majority of the existing $\varphi\Delta$ values found in literature for various photosensitizers are documented with the sensitizers in organic solvents though values in aqueous media are more valuable for PDT applications. Determination of accurate and precise $\varphi\Delta$ values in aqueous solution is a much more difficult problem than in organic media.
There are many methods for the measurement of Singlet Oxygen quantum yield measurement but most of them are applicable for measurement only in organic solvents. And those methods which are applicable for measurement in aqueous media require the use of expensive instrumentation like IR luminescence. Hence a method for quantum yield determination which is approachable with feasible laboratory instruments is attempted to be discovered.

**Tool used (Development tools - H/w, S/w) :** UV Vis Spectrometer, Spectrofluorometer

**Objectives of the project :** Quantum yield Determination of photosensitisers in aqueous media

**Major Learning Outcomes :** Kind of Attitude required to carry out research work.

**Brief Description of working environment, expectations from the company :** Working environment is very good, but how you will proceed in your work completely depends on your guide. People are very kind and always ready to help to the extent possible.

**Academic courses relevant to the project :** Kinetics and Reactor Design, Physics, Chemistry

## Name : Satyaki Roy (2015A1PS517P)

**Student Write-up**

**Short Summary of work done during PS-II :** Project was on the investigation of the behavior of foam generated by different surfactant mix and its interaction with oil was studied. Various experiments were done to understand the difference in behavior of foam in presence of oil.

**Tool used (Development tools - H/w, S/w) :** Foam Shaker, Film apparatus, Turbidity meter, Force Tensiometer, Excel.

**Objectives of the project :** Studying difference in foam behavior in presence of oil, and explaining the phenomena

**Major Learning Outcomes :** Knowledge of Surfactants, Research Experience

**Brief Description of working environment, expectations from the company :** In an organization, one would expect team interactions. That was not the case here, the project felt more like an academic project. Mostly people are helpful and very knowledgeable, but since work was to be done mostly alone, didn't feel like organizational work.

## Name : Harshit Kumar Sinha (2014B2A10888G)

**Student Write-up**

**Short Summary of work done during PS-II :** Aim of my project was to study the effect of different salts on foam volume and foam stability. Binary surfactant mixture consisting SLES (1EO) and NaLAS were studied in the presence of different sodium

and magnesium salts. All measurements were done at two different pH to understand the effect of pH on foamability and foam stability. Film thinning was studied using spectrophotometer and light source setup.

**Tool used (Development tools - H/w, S/w) :** Automated foam shaker, Force tensiometer, Spectrophotometer.

**Objectives of the project :** understanding the effect of counter ions and co-ions on the drainage and stability of liquid films.

**Major Learning Outcomes :** Learning about different surfactants and analyzing different surfactant system.

**Academic courses relevant to the project :** Physical Chemistry IV, Chemical Experimentation II.

## Name : Rakshith Chandra M S (2014B2A10791G)

**Student Write-up**

**Short Summary of work done during PS-II :** Modelling indoor air quality: my work included simulating models for transport of contaminants from ambient to an indoor space through doors, windows, cracks and effective removal of these particles using air purifiers.

**Tool used (Development tools - H/w, S/w) :** CONTAM 3.0

**Objectives of the project :** To prepare concentration profile and effects of concentration sinks.

**Major Learning Outcomes :** Learnt about CONTAM, Particulate matter and their transport through advection and diffusion. Effective removal using forced settling methods

**Details of Papers/patents :** CONTAM- nist usa

**Brief Description of working environment, expectations from the company :** Working environment is good. All the experiments can be planned accordingly without any hurry. There is not much workload as it is a research centre.

**Academic courses relevant to the project :** Transport Phenomena and mass transfer

## Name : D L Sahithi (2014B2A10816H)

**Student Write-up**

**Short Summary of work done during PS-II :** Chain length of surfactant molecule versus surface tension analysis of Quaternary Ammonium Compounds (QACs) was carried out. The challenge was to separate the pure product from the reaction mixture to measure the pure surfactant's effect on surface tension of water. Different characterization methods and separation methods were employed to confirm the purity of the final product after successfully separating the product. An attempt to model the same has been initiated.

**Tool used (Development tools - H/w, S/w) :** Spectral analysis tools such as UV-vis and IR spectrometer, Surface tensiometer.

**Objectives of the project :** Synthesis of quaternary ammonium silyl (QAS) salts and analysis of their effect on surface tension of water.

**Major Learning Outcomes :** Chemical synthesis optimization, choosing appropriate characterization methods, problem-solving approach.

**Brief Description of working environment, expectations from the company :** It has a great scope of learning in terms of both technical skills and soft skills. More often than not, scientists are open to new ideas from students. It would be a good place to start if you are genuinely interested in research.

**Academic courses relevant to the project :** Organic Chemistry, Instrumental Methods of Analysis, Material Science.

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## *PS-II Station: Hourglass Research*

## Faculty

### Name : Mr. Pavan Kumar Potdar

## Student

### Name : Chetan Swaroop Tiwari (2014B3A80579G)

**Student Write-up**

**Short Summary of work done during PS-II :** Worked on categorization of patents in excel, prepared patent digests, evidence of use reports, prior-art search reports and also performed technology landscape analysis.

**Tool used (Development tools - H/w, S/w) :** Excel, Powerpoint, Word, Orbit Inteliigence, Google Patents

**Objectives of the project :** Patent Analytics

**Major Learning Outcomes :** Advance Excel

**Brief Description of working environment, expectations from the company :** The working environment is great at Hourglass. You can approach anyone for whatever problems or issues you are facing and they will simply help you out. For most of the time I worked under 3 senior members of Hourglass and it was a great experience working with them. At Hourglass people had fun as well apart from working for hours. Overall, it was a great learning there and a great experience as well.

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## *PS-II Station: HSBC EDPI*

## Faculty

### Name : Prof. Krishnamurthy Bindumahavan

## Student

### Name : Karan Daswani (2014B3A10652P)

**Student Write-up**

**Short Summary of work done during PS-II :** Analytical thinking was a key requirement for the projects. Machine learning techniques were used to full fill the business requirements.

**Tool used (Development tools - H/w, S/w) :** Python, SQL, Excel

**Objectives of the project :** Full filling the business requirements.

**Major Learning Outcomes :** SQL

**Brief Description of working environment, expectations from the company :** Descent working culture

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# *PS-II Station: HSBC Global Analytics Center, Bangalore*

## Faculty

### Name : Krishnamurthy Bindumadhavan

## Student

### Name : Shubham Garg (2013B3A40748P)

**Student Write-up**

**Short Summary of work done during PS-II :** I worked in the credit risk model monitoring team which is a part Wholesale Credit Risk Model Development Team. The team deals with regular monitoring of AIRB models for credit risk. The end user of the model monitoring report is the model owner, who is responsible for the performance of model. My project dealt with automation of model monitoring process using software tools. The first step in the project was to finalize the metrics that would be reported in the model monitoring report. This step required multiple discussion with various stakeholders (model owner, policy team, input data providers). After completing the first step, the conclusion was to report a specific small set of metrics, and allowing user to toss and turn the data according to their requirements. Tableau was figured out to be the most suitable tool for this kind of self service dashboard. The last step was to implement the requirements in tableau and receive feedback from higher management.

**Tool used (Development tools - H/w, S/w) :** SAS, Python, R, Excel, Tableau

**Objectives of the project :** Validation of Credit Risk Models for Wholesale Portfolio of HSBC

**Major Learning Outcomes :** Good understanding of Advanced Internal Risk Based Credit Risk Models

**Brief Description of working environment, expectations from the company :** HSBC has reputation of being one of the most employee friendly banks in the world. In my short stint at HSBC, I participated in multiple sports events (badminton and cricket) and joined couple of committees related to cultural activities. My experience with the organization has been nothing short of spectacular.

**Academic courses relevant to the project :** Financial Risk Analytics & Management, Fundamentals of Finance

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# *PS-II Station: IBM Bangalore*

## Faculty

### Name : Pradeep Kumar K

## Student

### Name : Govind Bhambhani (2015A7PS0053H)

**Student Write-up**

**Short Summary of work done during PS-II :** Practical : Rest API , Testing , back-end , SSL Certificate Extraction.
Theory : Dev Ops , Cassandra , SOAP , Oauth2 , SAML , Spark , Hadoop , ETL , 7-8 certification courses offered by IBM

**Tool used (Development tools - H/w, S/w) :** Java , Linux Bash

**Objectives of the project :** Project 1 : write REST APIs and automation in JAVA , Project 2 : Risk Assessment for X.509 certificates

**Major Learning Outcomes :** Learnt and understood various software development technologies and software

**Academic courses relevant to the project :** Object Oriented Programing , Database Systems , Software engineering , Operating Systems

# *PS-II Station: IBM India Software Group , Pune*

## Faculty

### Name : Ms Sonika Chandrakant Rathi

## Student

### Name : KADAM SOHAM DNYANESHWAR (2015A7PS0067G)

**Student Write-up**

**Short Summary of work done during PS-II :** Developed a new API service for securing cryptographic keys. It was team project. We developed everything from scratch and deployed it into IBM cloud. I worked as developer, designer and tester of this project.

**Tool used (Development tools - H/w, S/w) :** Java, JavaScript, Typescript, Python, YAML, Kubernetes, Docker, Linux shell

**Objectives of the project :** Management and security of cryptographic keys

**Major Learning Outcomes :** Cryptography and Cyber Security

**Brief Description of working environment, expectations from the company :** Work environment is good. People are nice here. No specific dress code. Time flexibility. No PPO is offered as they take only one year interns as employee.

**Academic courses relevant to the project :** Cryptography, DBMS, Software Engg., Computer Networks, DSA

### Name : Mihir Kelekar (2015A7PS0110G)

**Student Write-up**

**Short Summary of work done during PS-II :** Worked in the Technical Support Team of IBM QRadar - IBM's product in the field of Network Security. Learned a LOT about Linux, Networks, Network Security etc.

**Tool used (Development tools - H/w, S/w) :** Linux, VSphere (Virtual Machines)

**Objectives of the project :** To provide remote technical support whenever customers face any issues

**Major Learning Outcomes :** This internship gave me quite a lot of experience regarding releasing and maintaining a product. I got a lot of insight on client expectations and issues due to direct client interactions. Most important of all, I learned about how the job of managing and monitoring Network and Information Security for large organisations is made easier due to products like QRadar in the market.

**Brief Description of working environment, expectations from the company :** Work environment was very flexible and open. I had a really friendly and supportive team who educated me a lot. Everybody was approachable and cleared all my doubts readily.

**Academic courses relevant to the project :** Computer Networks, Network Programming, Internetworking Technology, CP

## Name : Saransh Agarwal (2015A7PS0155H)

**Student Write-up**

**Short Summary of work done during PS-II :** My work was to provide support to the QRadar SIEM Solution by IBM. We had to resolve issues customers were facing with their deployments and their doubts.

**Tool used (Development tools - H/w, S/w) :** Linux,

**Objectives of the project :** Support for QRadar software

**Major Learning Outcomes :** Linux, Network Security

**Brief Description of working environment, expectations from the company :** The working environment is very friendly and relaxed with a lot of extra activities involved.

**Academic courses relevant to the project :** Network Security, OS

# *PS-II Station: IBM INDIA Software Labs, Bangalore*

## Faculty

### Name : K.Pradheep Kumar

## Student

### Name : Saima Rashid (2015A7PS0004P)

**Student Write-up**

**Short Summary of work done during PS-II :** Firstly, I familiarised myself with the organisation and its diverse range of products and offerings. I was initially put in the "Watson Explainability" squad during which I got hands on with Watson Studio which is an integrated environment designed to make it easy to develop, train, manage models and deploy AI-powered applications. Moving on I was asked to learn on different tools and frameworks like RESTful APIs, GitHub, IBM Cloud and Apache Spark.
With this understanding of tool and getting a hang of data governance space, I was given an assignment to understand ZooKeeper and write a utility that could be used to synchronise resource access across multiple process instances in one of the micro-service of data governance. After doing that, I was assigned the task to look into Apache Kafka clusters and Streams and write various APIs such as Producer, Consumer and Stream.

**Tool used (Development tools - H/w, S/w) :** GIT, Gradle, Liberty, Zookeeper, Kafka, Cloudant, IBM Cloud

**Objectives of the project :** Primary objective was to get hands on experience on various tools and frameworks in order to understand how things in the industry work. Apart from that, the work was to create and improve the existing synchronising and locking mechanisms currently available.

**Major Learning Outcomes :** I got to know the working of various frameworks like Spark, GIT, Kafka, ZooKeeper. I had the experience of implementing the theoretical knowledge gained during college.

**Brief Description of working environment, expectations from the company :** IBM is a great place to work in. It provides a great work- life balance. Apart from being a good and friendly environment, IBM ensures over-all development of the employees. Not only did I get to work on diverse domains ranging from AI to Data Governance, my mentor ensured that I was involved in all the activities- be it

meeting with the top leadership or team outings. It was a great experience.

**Academic courses relevant to the project :** OOP

## Name : Devesh Dhole (2015A7PS0102G)

### Student Write-up

**Short Summary of work done during PS-II :** I was involved in majorly 2 tasks using Apache Kafka. First task was to write an event sourcing logic. The current logic used a java based queue which was creating a bottleneck for sourcing these events. I modified the queue to Kafka based which made it much faster. The second task was to create a service which basically pushes and pulls data from Kafka Cluster in various formats. The second task was based on Business Process, Services and adapters.

**Tool used (Development tools - H/w, S/w) :** Apache Kafka,Apache Zookeeper,XML,BPML,Xpath,Services,Adapter,Business Process

**Objectives of the project :** 1. Optimizing the event sourcing logic. 2. Developing a Kafka Service.

**Major Learning Outcomes :** Apache Kafka,XML,BPML,Services,Adapters.

**Details of Papers/patents : "**Kafka Integration for event processing in B2B Integrator":
https://www.ibm.com/developerworks/community/forums/html/topic?id=9518c4ba-6bd0-44d9-873f-ce3dfc78bf37&ps=25

**Brief Description of working environment, expectations from the company :** The team I was alloted was Development team for B2B Sterling Integrator. The working environment was not very good. The average age of the team was very high so I couldn't socialize with the team much. The learning pace was very slow.
Not because I was not willing but because the team members were not enthusiastic. If you do not ask for work you will never get work. Even when you are asking for work they will not be that passionate about the task. But this completely depends on the team. Overall my experience was way below my expectations because I couldn't learn much even when I wanted to.

**Academic courses relevant to the project :** OOP, DBMS


## *PS-II Station: IBM ISL Bangalore*

### Faculty

**Name : K Pradheep Kumar**

### Student

**Name : Ashwin Jain (2015A7PS0098G)**

**Student Write-up**

**Tool used (Development tools - H/w, S/w) :** Eclipse, git, postman, gradle

**Objectives of the project :** Suggest Automation rules given the data rules.

**Academic courses relevant to the project :** DSA, OOP, DBMS

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## *PS-II Station: IBM Software Group, Bangalore*

### Faculty

**Name : Pradheep Kumar**

### Student

**Name : Neil Wilson (2015A7PS0074P)**

**Student Write-up**

**Short Summary of work done during PS-II :** I worked with the security squad of IBM private cloud offering, ICP. I was tasked with writing test suites to automate the testing and evaluation of various aspects of ICP related to login, authorisation, authentication.The project requires an in depth understanding of the working of ICP

to build robust test cases covering all possible scenarios.
I also worked on another project which involved developing a model for the classifications of X.509 certificates into risky and non risky. Since X.509 certificates are used widely to validate identity, it is important that these certificates can be trusted. The aim of this project is to propose a framework to assess the risk associated with these certificates using certain trust criteria and characteristics and classify them into 3 categories: high risk, medium risk and low risk. This project requires a deep understanding of certificate management and machine learning algorithms.

**Tool used (Development tools - H/w, S/w) :** Docker, Kubernetes, Helm, Jasmine, Gulp, Java, Weka

**Objectives of the project :** Security Test Automation & Risk Assessment of X.509 Certificates

**Major Learning Outcomes :** Learned a lot about how enterprise level code is written, the production pipeline followed while building a software. I also got to learn a lot about cloud computing, how technologies like Docker and Kubernetes are used and how powerful they can be.

**Academic courses relevant to the project :** Machine Learning, Data Mining, Cloud Computing

## Name : Puli (2015A7PS0089P)

### Student Write-up

**Short Summary of work done during PS-II :** I was taken into the team which was working on a whole new project called "AI Open Scale". AI OpenScale allows businesses to operate and automate AI at scale – irrespective of how the AI was built and where it runs. This service provides enterprises visibility into how AI is built, used, and performs thus proving to be a major breakthrough in the field of Machine Learning by serving as the solution for the issues of "explainability, bias detection, and remediation". I was initially assigned the work of verification of some of the features and regression testing to get comfortable with the already existing code and features. The work included testing whether a variety of datasets comprised of varied data types, were biased or unbiased using the data bias calculation service, testing a variety of models such as SVM, Tensorflow, Keras on top of Tensorflow built using frameworks such as Scikit-Learn, using the model the model bias calculation service. Then I was assigned to work on implementing logging across all the functions using a custom logger which had to store additional information apart from logging the errors/warnings. I was assigned the task of improving the service's performance by making use of a local cache. Later, I worked on implementing RESTful API for communication across the sub-services. I extended the functionality of our service to datasets with float, mixed attributes and the calculation of the distribution of continuous data in buckets which was later used for the detection of the source of the

bias. Using Docker based on grpc for communication across the sub-services.

**Tool used (Development tools - H/w, S/w) :** Pandas for working with CSV files(datasets).
Scikit- Learning library for the development of models used for testing.
Advanced Rest Client and Postman for the building of APIs
IBMs Watson Machine Learning Tool

**Objectives of the project :** The main objective of the project as a whole was to provides enterprises visibility into how AI is built, used, and performs thus building trust on AI. The objective of the part of the project which I was working on was to detect if a model is biased and detect the source of bias.

**Major Learning Outcomes :** This internship has helped me in gaining a lot of knowledge about Machine Learning, Data analytics and API development. IT also helped me gain insight into the way things work at a corporate workplace.

**Brief Description of working environment, expectations from the company :** The team was stationed at Hyderabad and I was allotted the Bangalore workplace as my PS station. Initially it was difficult to work remotely and it took a comparatively higher amount of time for me to settle down and adjust. As a result I could not interact much with my team as well. I shifted to Hyderabad for 3-4 weeks to pick up the momentum. Do not expect any kind of incentive from the company such as travel, food etc., No social life.

**Academic courses relevant to the project :** Data Structures and Algorithms

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## *PS-II Station: IDeaS - A SAS Company*

## Faculty

### Name : Sonika C Rathi

## Student

### Name : Aditya Bharat Iyer (2015AAPS0204H)

**Student Write-up**

**Short Summary of work done during PS-II :** We were given almost 1 month of training on Java based web application development, in which basics were taught through a sample project of a picnic details management application.
My first project was a Car parking management application, where I used Spring Boot and JPA in developing the application, along with SQL for database management.
Next project I worked on was in the team working on G3, IDeaS' live product.
Along with this, I worked on creating automated workflows using Microsoft Flow for the HR team.

**Tool used (Development tools - H/w, S/w) :** Java 8, Spring Boot, Hibernate, MySQL, Spring Security, Javascript, CSS, Bootstrap 4, HTML, Maven framework

**Objectives of the project :** Multiple projects, as described in the summary

**Major Learning Outcomes :** Using concepts of OOPS, DSA and DBMS in software development, and working in a team. Agile practices in developing software. Test Driven Development.

**Brief Description of working environment, expectations from the company :** Very friendly people, helpful colleagues, mentors and managers. Lots to learn. Company took us to Goa :P

**Academic courses relevant to the project :** OOP, DSA, DBMS

## Name : Vishal Mishra (2014B2A10616P)

**Student Write-up**

**Short Summary of work done during PS-II :** Developed Alexa Application

**Tool used (Development tools - H/w, S/w) :** AWS, Alexa developer portal, maven, core java, jsp, spring framework, mysql, mongodb,

**Objectives of the project :** The project aims at answring general queries of the company's employees

**Major Learning Outcomes :** overall software development product

**Brief Description of working environment, expectations from the company :** working environment is good, everyone is very helpful but you have to be responsible and be motivated about the work given to you :)

**Academic courses relevant to the project :** Object oriented programming, java

## Name : Vishal Mishra

**Student Write-up**

**Short Summary of work done during PS-II :** I worked on Alexa application which aims at solving general queries for employees of the company

**Tool used (Development tools - H/w, S/w) :** AWS maven java Eclipse spring mongodb sql jsp servelets

**Major Learning Outcomes :** Overall web application development

**Brief Description of working environment, expectations from the company :** Working environment is good mentors are helpful and you get work on cool stuff

**Academic courses relevant to the project :** Oop and general coding

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# *PS-II Station: IMImobile, Connect Product Development*

## Faculty

### Name : Y V K Ravi Kumar

## Student

### Name : Vineeth Naroju (2015A7PS0121P)

**Student Write-up**

**Short Summary of work done during PS-II : Using** IMIconnect platform to facilitate IMIchat agent communication with an android application.

**Tool used (Development tools - H/w, S/w) :** IMIconnect platfrom, IMIchat

platform, Postman.

**Objectives of the project :** Proof of Concept

### Name : Angad Lamba (2014B3A70689P)

**Student Write-up**

**Short Summary of work done during PS-II :** Digital Humans: Idea is to build a video version of chatbot that customer can interact with and is
more engaging. This will give chatbot a personality and the ability to show emotions at a visual level.
This will be made in unity and requires making complex graph of animations with transitions.

**Tool used (Development tools - H/w, S/w) :** Unity, Blender, Oculus Rift, Oculus Go, IMIbot.api

**Objectives of the project :** Digital Humans: Idea is to build a video version of chatbot that customer can interact with and is more engaging. This will give chatbot a personality and the ability to show emotions at a visual level. This will be made in unity and requires making complex graph of animations with transitions.

**Major Learning Outcomes :** I learned Unity, C#, as well as learned in great depth about Virtual Reality and how make applications in different VR devices like Oculus Rift. I learned about State Machines and Animations and product development.

**Brief Description of working environment, expectations from the company :** Working Environment is very good. People are nice and helping. Office timings are very flexible.

**Academic courses relevant to the project :** College doesn't offer any courses related to this project.

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## *PS-II Station: Infinera*

## Faculty

### Name : Dr. Satya Sudhakar Yedlapalli

# Student

## Name : Ritu Saini (2015A8PS0463H)

### Student Write-up

**Short Summary of work done during PS-II :** Characterization and tuning of high speed data path - SERDES interfaces for various OTN/GbE protocols on MXP400. The objective was achieved using analog and digital equalizers like CTLE, DFE, FDFE etc., based on channel impulse response and eye distribution for various PRBS patterns up to PRBS31. The Transmit FIR settings on ClariPhy links were optimized for better performance. Project involved automating the data capture of various performance/characterizing metrics using scripts based on Python.

**Tool used (Development tools - H/w, S/w) :** Python, JMP, Diag

**Objectives of the project :** Channel Characterization and tuning of High Speed SerDes Links on the MUXPONDER 400

**Major Learning Outcomes :** Coding

**Brief Description of working environment, expectations from the company :** Work environment is nice. Timings are flexible.

**Academic courses relevant to the project :** Communication System

## Name : Nikita Mandapati (2015AAPS0251H)

### Student Write-up

**Short Summary of work done during PS-II :** Developed Python scripts to automate the tuning of serializer-deserializer blocks on Infinera's Muxponder400. The performance of the product was analyzed and optimum parameters were deduced to get minimal errors for high speed PRBS traffic.

**Tool used (Development tools - H/w, S/w) :** Python

**Objectives of the project :** Channel characterization and tuning of high speed SerDes links

**Major Learning Outcomes :** Importance of equalization and signal processing for error free communication at high speeds

**Brief Description of working environment, expectations from the company :** The work environment was highly conducive and the seniors and mentor were very supportive in making us comfortable with the project.

**Academic courses relevant to the project :** Communication Systems

### Name : Shelly Kothari (2015A3PS0246G)

**Student Write-up**

**Tool used (Development tools - H/w, S/w) :** Hardware - Quartus, DVE , VCS

**Objectives of the project :** Cost effective solution of 100gig tester

**Major Learning Outcomes :** Learned about FPGAs, tools etc

**Academic courses relevant to the project :** Digital design

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## *PS-II Station: Inmobi*

## Faculty

### Name : Annapoorna Gopal

## Student

### Name : Gaurav Sharma

**Student Write-up**

**Short Summary of work done during PS-II :** I was working with the Re-marketing team of InMobi. My work mainly revolves around setting up campaigns for advertisers on different DSPs (Demand Side Platforms). Post that, monitoring the campaign, how much each advertiser is spending, are we meeting the demands or not, how much revenue or profit we are making by running those campaigns, if we are incurring loss then how to optimize those campaigns by targeting better users -

these were the parts of my job. For analysis purpose, we use Microsoft Excel. For different teams, the jobs types and experience is different.

**Tool used (Development tools - H/w, S/w) :** Microsoft Excel, Different Advertising DSPs (Demand Side Platforms)

**Objectives of the project :** To drive revenue for Inmobi by targeting dormant app users as per client's needs.

**Major Learning Outcomes :** Learned about how an industry function in general. Learned about how an Advertising industry function in particular. Learned how to use Microsoft Excel at an advanced level and to use Advertising DSPs.

**Brief Description of working environment, expectations from the company :** Working environment at Inmobi is awesome. The people are really good and helpful here. The food is awesome - breakfast, lunch, snacks and dinner is served in a day. Apart from that, there is a breakout area at every floor where you can get coffee, tea etc. along with some lite snacks. There is a dedicated play area (Also there's a PS4 there). There is a lot more than this. A worth PS-II experience here.

**Academic courses relevant to the project :** No academic courses required as such. You will learn everything here.

## Name : Shreshtha Dhankar (2015A1PS0706P)

### Student Write-up

**Short Summary of work done during PS-II :** Following were my responsibilities as a Product Management intern under the Marketing Cloud of InMobi :-
1. User research and market analysis to form GTM strategies for ConnectX
2. Data cleanup and pre-processing using MS Excel
3. 0-1 coordination for campaign execution
4. Coordinating with various teams across InMobi
5. Tracking the business performance and KPIs
6. Outbound sales leads generation for ConnectX and devising prospective mailing campaign

**Tool used (Development tools - H/w, S/w) :** MS Excel, MS Word

**Objectives of the project :** Enhancing Operational Efficiency

**Major Learning Outcomes :** 1.First hand experience of working with Product Managers and Product Marketing team
2. Go to Market Strategies and product road-mapping
3. Global understanding of how Marketing Research business works

4. Understanding of competitive landscape and gamut

**Academic courses relevant to the project :** Principle of Management

## Name : A Anantharaman (2014B5A40565P)

**Student Write-up**

**Short Summary of work done during PS-II :** Excel Work, Tracker Monitoring, Ad tech and marketing

**Tool used (Development tools - H/w, S/w) :** Excel, Google Sheets, IAP

**Objectives of the project :** To learn about Advertising Cloud and Marketing

**Major Learning Outcomes :** How the ad tech and corporate worlds work

**Academic courses relevant to the project :** PAVA, SCM, PPC

## Name : Anchit Ahuja (2014B3A40581G)

**Student Write-up**

**Short Summary of work done during PS-II :** Worked in Sales team for the first three months. Work included onboarding clients on Inmobi's platform, raising invoices/billables etc. client management basically. Then shifted to delivery team where I managed accounts of various clients to ensure their objectives are met.

**Tool used (Development tools - H/w, S/w) :** MS Excel

**Objectives of the project :** Business Development

**Major Learning Outcomes :** MS Excel skills, Presentation skills, Management skills including time management, how to set priorities, negotiation & sales skills.

**Brief Description of working environment, expectations from the company :** Very chilled out working environment. No strict work timings. You can work at your own pace. Take frequent breaks/ leaves etc. No one questions.

## Name : Aditi Maheshwari (2015A7PS0086G)

**Student Write-up**

**Short Summary of work done during PS-II :** I have worked with Wadogo Demand where I integrated several new advertisers on our platform and WadogoX where I incorporated various new features for improving the UX of the product and also increase its scalability.

**Tool used (Development tools - H/w, S/w) :** Languages - Java, Nodejs. Framework - Spring boot

**Objectives of the project :** Wadogo Engineering, is an integral part of Mobile Advertising domain, the base functionality of InMobi. The team is assigned with some regular prime jobs and on-demand development & upgradation related jobs. Among the team's prime jobs API Integration (includes JAVA,JSON), Dockerizing & Scheduling Cron Jobs (includes Dockerization and JAVA), Development of Dashboards (includes front-end & Backend Web Development). The Utilities are reducing human involvement and revenue increment.

**Major Learning Outcomes :** I have briefly learnt and worked on the following:
Advanced Java
API calls - POST, GET requests
Psql queries (insert, update, delete, joins, etc), DB Connections
Methods, packages, maven dependencies, loggers
Different layers - Service, Dao, connection, IAP API's, Hikari, Redis, Jedis, RSA-256 encryption
NodeJS and Javascript
Jumpbox, machine and dockerizations and deployment of code in production.
Spring Framework

**Brief Description of working environment, expectations from the company :** Work culture and environment was great. Got no complains.

**Academic courses relevant to the project :** OOP

## Name : Jayendra Agrawal (2015A5PS0933P)

### Student Write-up

**Short Summary of work done during PS-II :** All interns were registered into different teams so everyone gets a little different work. Most of my work involved statistical analysis of daily transactions to find patterns to maximise the revenue and minimise the cost, ie. to polish the supply demand pipeline. Along with this a lot of analytical work also involves the feedback for new updates and rollouts
that keep happening which must be seamlessly integrated with supply and demand partners to ensure continuous smooth functioning of the company.

**Tool used (Development tools - H/w, S/w) :** In-house tools, excel, access, PostgreSQL

**Objectives of the project :** Seamlessly integrate new rollouts and identify patterns in supply-demand landscape

**Major Learning Outcomes :** Data Management, extraction, processing, mining and Analaytics

**Brief Description of working environment, expectations from the company :** Great working environment, flexible working hours and incredibly helpful colleagues.

**Academic courses relevant to the project :** Supply Chain Management

## Name : Kreeti Jha (2014B2A10888P)

**Student Write-up**

**Tool used (Development tools - H/w, S/w) :** MS Excel, MS PowerPoint and Inbuilt company tools

**Objectives of the project :** Reduce fraud installs using MTTI analysis and supply analysis

**Major Learning Outcomes :** Digital campaign optimization

## Name : Navaneethakrishnan Unnikrishnan (2015A4PS0269P)

**Student Write-up**

**Short Summary of work done during PS-II :** I worked in the Central Market Intelligence team - an in-house consulting team that caters to specific business issues of various teams within the organisation that have different functions in the ad tech ecosystem.

**Tool used (Development tools - H/w, S/w) :** Softwrae used : MS Excel, MS Powerpoint as well as third-party data tool such as AppAnnie, PrioriData and Mobbo.

**Objectives of the project :** The project could range from an industry study for teams entering a new market/ new venture, or it could be a competitior analysis in a particular field for a team that is already established. We could suggest the course of action based on the market situation.

**Major Learning Outcomes :** I have learnt to deal with huge amounts of data, by analysing them and then making them into concise readable forms. Market research

reports demand one to have a coherent flow in thought, and this flow translates in everyday thinking too. Moreover, this internship presented me with opportunities to work with some of the top managers of the India office, and this has vastly improved my confidence in effective communication.

**Brief Description of working environment, expectations from the company :** The work culture breaks all conventional notions one has about the typical corporate workplace. My mentor, my manager and my teammates were extremely supportive for all projects. Its a great learning opportunity, considering that adtech as an industry is still in a nascent phase in our country.

**Academic courses relevant to the project :** Market Research (though this course focuses more on primary research, the work I did involved more of secondary research).

## Name : Dheeraj Gupta (2015A4PS0367P)

### Student Write-up

**Short Summary of work done during PS-II :** As part of the India Sales team at InMobi, I was the direct line of communication between the clients and the product & delivery teams. I handled the operational work for the campaigns that contributed approx. INR 10 crores revenue in 6 months by end to end client servicing and coordinating with delivery team for campaign optimization. I streamlined the sales process to by creating a Brand tracker which was one stop solution for all the information needed for booked numbers. To maintain relationship with old clients and hunt new clients, I conceptualized the campaign solutions for the clients by producing supporting decks.

**Tool used (Development tools - H/w, S/w) :** MS Excel, MS Powerpoint, Salesforce, InMobi internal tools

**Objectives of the project :** There was no project as such. I did the same work as done by assistant sales manager.

**Major Learning Outcomes :** Professional know-how, Time Management, Sales

**Brief Description of working environment, expectations from the company :** Employees are pretty chilled out and you will be never forced to work. There is no restriction on in and out timing but it varies between different teams.

If you are looking for more client facing or consulting role then InMobi is not the right place for you. Teams are allotted randomly and it only depends on your luck whether you will get a team with good work. There are teams where you just have to do operational work and you will hate the corporate life. PPOs are dependent on teams and some teams do not offer PPOs to undergrads. So, it all depends on your luck

whether you will get the team where chances of PPO are high.

On the brighter side, food and beverages are free. There is a play area where you could enjoy whenever you get bored. They have PS4 there with FIFA18. You can work from home if you do not feel like going to office.

**Academic courses relevant to the project :** Advanced MS Excel and MS PowerPoint

## Name : Siddhant Narula (2014B4A80810P)

**Student Write-up**

**Short Summary of work done during PS-II :** Strategy and Operations for APAC:
1. Extensive work on reporting across all Markets and building Demand side views for the Leadership Team (GM Level).
2. Building strategies for Pilot Runs of various new verticals introduced in AU during my time at the company.
3. Creating Statistical Models to automate Supply analysis and creating a scoring system for supply partners.
4. Building a detailed business view for every vertical in the company by market.

**Tool used (Development tools - H/w, S/w) :** MS Excel + Google Sheets, Company Proprietary Tools, Tableau, Google Studio

**Objectives of the project :** To create useful dashboards and business view (APAC) for the company and build on strategies for the Australia Market

**Major Learning Outcomes :** 1. Understanding of the AdTech Industry through and through
2. Corporate Communication
3. Insight into how the Strategy team of an organisation functions

**Brief Description of working environment, expectations from the company :** Great Workplace, Amazing People to work with, Extremely positive environment with people ready to help and even interns are given responsibilities (something that rarely happens in companies)

**Academic courses relevant to the project :** Operations Research, Probability and Statistics

## Name : Arkapriya Paul (2014B1A70717G)

**Student Write-up**

**Tool used (Development tools - H/w, S/w) :** Tableau, MS Excel, Mobbo, PrioriData

**Objectives of the project :** Market intelligence is responsible for gathering external –focused information according to the ask by any team in InMobi

**Major Learning Outcomes :** Working in cross-team efforts, Secondary research

**Academic courses relevant to the project :** Market Research

## Name : Afrid Sheikh (2015A4PS0139G)

**Student Write-up**

**Short Summary of work done during PS-II :** *Handled On-Network advertising demand for Japan and Korea regions, along with campaign delivery pacing.
*Conducted daily optimization of campaigns, along with Margin management.
*Regularly generated and analyze profitability reports, in order to maximize profitability across campaigns.

**Tool used (Development tools - H/w, S/w) : Excel**, Powerpoint, Internal InMobi reporting tools.

**Objectives of the project :** Management of advertising campaigns in the Affiliate Market

**Major Learning Outcomes :** *Understanding of the affiliate market and digital advertising market in general.
*Improvement in my business and finance acumen due to the amount of accountability and responsibility given to interns here.
*Sharpened analytics and Excel skills, as a result of extensive use of these tools.
*Improved general decision making skills, communication and client management skills due to heavy involvement in the day to day working of the department

**Brief Description of working environment, expectations from the company :** Anyone looking for a fresh start in the non core field, with little to no non-core experience can definitely put this station at the top of their list. Interns here are given a huge amount of responsibility and accountability, right from day 2 here, post - briefing. The work culture and the peers here make the work seems stress-less.

## Name : Sambhav Jain (2014B1A30230P)

**Student Write-up**

**Tool used (Development tools - H/w, S/w) :** Springboot framework in Java

**Objectives of the project :** To develop the backend API

**Brief Description of working environment, expectations from the company :** Work culture is great. You have full freedom how you want to proceed ahead with your work and also you are given ownerships.

**Academic courses relevant to the project :** Object Oriented Programming, DBMS

## Name : Harshad Bade (2015A1PS0615G)

**Student Write-up**

**Short Summary of work done during PS-II : Helped** analyze and scale up accounts for the Supply Sales Team, suggested action items for scaling up revenue, co-ordinated with the demand teams of different regions to drive campaigns to get maximum revenue output.

**Tool used (Development tools - H/w, S/w) :** Microsoft Excel, R Studio, Python, Salesforce, Tableau

**Objectives of the project :** Help Account Managers keep track and scale porfolio of accounts

**Major Learning Outcomes :** Understanding of ad-tech industry, internal working of an organization, data handling on Microsoft Excel.

**Brief Description of working environment, expectations from the company :** The work environment gives a lot of freedom to utilise responsibly, different events every 2-3 weeks to keep the employees happy and cheerful.

## Name : Asad Husain (2015A4PS0393P)

**Student Write-up**

**Short Summary of work done during PS-II :** I worked in the client servicing team for Indian subcontinent. My job included data analytics and client servicing.

**Tool used (Development tools - H/w, S/w) :** MS Excel, Salesforce, Cosmos

and other in house software

**Objectives of the project :** To make sure the ad campaigns exhaust their budget while running on the given targeting given by the client, to fulfil client requirements, make presentation and submit bi-weekly reports.

**Major Learning Outcomes :** Professional Etiquettes, data analytics, industry insights

**Brief Description of working environment, expectations from the company :** InMobi is chilled out in general. You can opt for InMobi after you have been placed. There is PS4, foosball table, cricket net, TT table, gym, library, and other things to pass time at office. Food is great and refreshments are present 24x7 and everything is free to use. But it highly depends on the team where you are drafted. My team kept me busy from 10:30-11AM till 7-8PM. However there were some who worked for only 2 hours a day. Expectations vary team from team. Chances for getting a PPO are on the higher side as per my experience.

**Academic courses relevant to the project :** Technical report writing

## Name : Yash Agarwal

**Student Write-up**

**Short Summary of work done during PS-II :** Management of campaigns running on the Inmobi affiliate marketing network (Wadogo) originating from India and Southeast Asia. Daily optimisations and operations, fraud reduction and budget delivery. Handled revenues of $100k daily.

**Tool used (Development tools - H/w, S/w) :** MS excel

**Objectives of the project :** Budget delivery for IN/SEA campaigns

**Major Learning Outcomes :** Digital advertising industry experience with a deep knowledge of the affiliate industry

**Brief Description of working environment, expectations from the company :** Excellent working environment with an extremely friendly team. The company is extremely flexible and handles employees very well. One of the best places to work.

## Name : Nikhilesh Bebarta (2014A4B40571H)

**Student Write-up**

**Tool used (Development tools - H/w, S/w) :** Excel

**Objectives of the project :** Account Optimisation

**Major Learning Outcomes :** Familiar with numbers and what they say in a cluster
Understood how to deal with different kinds clients at work
Work-Life balance
Reaching a break-even in profit margin in Performance business

**Academic courses relevant to the project :** Linear Optimization, Prob Stats, EPS

## Name : Sharvari Kshirsagar (2013B3A40498G)

### Student Write-up

**Short Summary of work done during PS-II :** In Wadogo, my work primarily focuses on handling supply side partnership with various direct publishers, indirect publishers, agencies etc. It involves handling a diverse set of supply partners across the globe, and providing them with appropriate campaigns, ensuring the maximum revenue burn with quality traffic and profit margin. For providing quality traffic at the required scale, I optimize the publisher traffic, using daily reports through different analytical tools.

**Tool used (Development tools - H/w, S/w) :** M.S. Excel, JIRA, Internal Tools, Appsflyer

**Objectives of the project :** Hunting for new supply partners, and maximizing the revenue and margins for existing supply partners for Inmobi's third party affiliate marketing channel (Wadogo)

**Major Learning Outcomes :** Inmobi has given me an amazing opportunity to learn and grow, dealing with clients across the globe. Working with different teams has helped me evolve as a team player and inculcated people management skills in me. Currently, the role I am working at, in the Wadogo team, allows me to get a hands-on exposure on how the affiliate network business functions. The kind of exposure that I have got at different verticals such as one-on-one client interaction, data analysis, negotiation skills, people skills has truly been a very enriching experience.

The team has assigned me great responsibilities. Being present with new varied challenges on a daily basis stimulates my learning experience. It aids in expanding my knowledge base and improving my decision making and leadership skills. market. I have also improved my data analysis skills and MS Excel skills. Furthermore, I have gained hands-on experience with several platforms like Has Offers, IAP, Cosmos,

JIRA etc. This internship has been a highly enriching and fulfilling learning experience.

**Brief Description of working environment, expectations from the company :** Amazing environment, great colleagues and seniors. Everyone is very eager to help. An extremely collaborative learning experience.

**Academic courses relevant to the project :** Majorly requires M.S. Excel

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## *PS-II Station: Intel*

## Faculty

### Name : Dr Swapna Kulkarni

## Student

### Name : Shubham Pandey (2014B3A3PS0562G)

**Student Write-up**

**Short Summary of work done during PS-II :** SPEF parasitics correlation between StarRC and ICC2.

**Tool used (Development tools - H/w, S/w) :** StarRC, ICC2

**Objectives of the project :** Obtaining correlation for RC parasitics between StarRC and ICC2

**Major Learning Outcomes :** RC extraction, signal integrity, crosstalk analysis

**Academic courses relevant to the project :** ADVD

### Name : Aakash Shah (2015A8PS0392P)

**Student Write-up**

**Short Summary of work done during PS-II :** Physical VLSI Design

**Tool used (Development tools - H/w, S/w) :** IC Compiler 2, Tcl, Perl etc.

**Objectives of the project :** To generate a porting flow for future technologies.

**Major Learning Outcomes :** Physical Verification, Structural Design, Tcl Scripting, STA etc.

**Academic courses relevant to the project :** ADVD, Digital Design

## Name : Kautilya Phani (2015A3PS0365H)

**Student Write-up**

**Short Summary of work done during PS-II :** I got lucky enough to be part of a live project and worked on it along with my team. I learnt verilog, perl, tcl languages in the process. I got my hands on real tools like Design Compiler, ICC2 shell and other intel specific tools. I performed tasks like optimization of runtime, rectify setup and hold time violations, clean design rule check and layout vs schematic errors using different types of new techniques. I learnt the graphic user interface tool and observed the placement of the cells and their gates, via, pin, ports etc. I learnt the solution approach for the problem in a vlsi industry.

**Tool used (Development tools - H/w, S/w) :** Design Compiler, ICC2

**Objectives of the project :** Design convergence of ASIC

**Major Learning Outcomes :** Worked and delivered database on real time project

**Brief Description of working environment, expectations from the company :** Work environment in Intel has been great. All employees were supportive and helpful. I got all the required support from the company.

**Academic courses relevant to the project :** ADVD, Digital Electronics, Micro electronics circuits

## Name : Deep Vankani (2014B4A30637G)

**Student Write-up**

**Short Summary of work done during PS-II :** Static timing analysis and scripting. Perl and tcl scripting to automate the tasks in the flows carried out for the design block. Getting acquainted with PrimeTime - a tool used for STA. Fixing the

timing violations.

**Tool used (Development tools - H/w, S/w) :** PrimeTime, perl, tcl

**Objectives of the project :** Automating some tasks in the design flow

**Major Learning Outcomes :** Static Timing Analysis and scripting

**Academic courses relevant to the project :** Digital Design, ADVD

## Name : K Akshay Kumar (2014B1A30699H)

**Student Write-up**

**Short Summary of work done during PS-II :** I have worked on verification of RTL design. My work involved using different tools to verify the design. I worked to check whether the design is clean with respect to working of power elements such as isolation cells and level shifter cells. I have also written scripts to perform quick checks on the signal dumps from a test to detect isolation clamp violations.

**Tool used (Development tools - H/w, S/w) :** VC LP, Verdi, Tcl, UPF, Perl

**Objectives of the project :** To detect power bugs present in the design using power aware verification methodology.

**Major Learning Outcomes :** I learnt how to work in a corporate environment The project helped me in understanding the work flow in the company: how it moves through different stages, what are the different challenges faced in each stage and how to approach them.

**Brief Description of working environment, expectations from the company :** The amount and quality of work and the expectations majorly depend on the manager allotted. There is plenty to learn and we are free to learn and work at our own pace. The employees are extremely approachable and helpful. It is a very good place to work in.

**Academic courses relevant to the project :** ADVD, Computer Architecture

## Name : Shrey Shah (2015A3PS0018P)

**Student Write-up**

**Short Summary of work done during PS-II :** I joined Intel as undergraduate technical intern in the Layout Verification team. Being in one of the backend design

team, I got to learn the basics of the backend process in the chip design of VLSI. My team focusing on layout verification, I have learnt a great deal about how and why verification is necessary. I also got to learn about how to resolve errors on various layers required during the chip packaging. Apart from learning about the partition verification, I learnt about the importance of scripting during the whole process of chip design and also had the opportunity to contribute in the development of scripts and also use them to develop tools. The major tasks in which I was involved were Script development and Tool development. Scripts and tools were developed to speed-up various tasks that include but are not restricted to resolving the errors in the layout of the chip. Multiple scripts have been written for resolving errors and thus speeding up the entire process of verification. Tools that have been developed are to be used in different aspects during various tasks such as reviewing errors, extracting certain data, performing various checks etc. Apart from scripting, I also got to work on a real project in the verification stage. I thank PSD and Intel for giving me this great opportunity to have a practical experience in the industry.

**Tool used (Development tools - H/w, S/w) :** ICC, ICC2

**Objectives of the project :** To develop scripts and tools to improve the execution and run-time of layout verification

**Major Learning Outcomes :** Physical Verfication Process, Basics of Chip Design, Scripting Languages.

**Brief Description of working environment, expectations from the company :** Intel had a great work environment for us interns. I was treated as one of the employee. We had to go through the same process that any joinee has to go through. We were taught about various aspects of working at Intel. The team was very friendly. Everyone was very helpful and approachable at any moment. In terms of work allotted, we were given similar tasks as of the regular employees, thus allowing us to have proper exposure to the work in the industry Overall my experience was great at Intel.

## Name : Rishabh Mathur (2015A8PS0315P)

### Student Write-up

**Short Summary of work done during PS-II :** We worked on finding performance improvement opportunities for server machines, based on the Intel's Xeon processors' architecture and features. These were aimed at improving performance for data centers, and we tried to find solutions that work without workload specification, and tried to optimize performance and resource utilization or reduce power consumption of the system.

**Tool used (Development tools - H/w, S/w) :** Bash scripting, Linux, C and Python programming, Jupyter Notebook (python analysis software)

**Objectives of the project :** Exploring Performance Optimization Opportunities for Data Centers

**Major Learning Outcomes :** Concepts of Computer Architecture, Operating systems, Data Centers, networking and optimizing resource allocation

**Brief Description of working environment, expectations from the company :** Good and healthy working environment, good location and office. Manager and team mates were very supportive of us interns and trusted us with work that we were given. Resources and help were available to us when we required them, and we were treated like full time employees with both privileges and responsibilities.

**Academic courses relevant to the project :** Computer Architecture

## Name : Sparsh Bhogavilli (2015A8PS458H)

**Student Write-up**

**Short Summary of work done during PS-II :** Scripts to calculate % area utilized by metal layers.
Shadow runs (redoing the task already done, so that you learn how to do it) of floorplanning.

**Tool used (Development tools - H/w, S/w) :** ICC2

**Objectives of the project :** To enhance the quality of metal density calculations

**Major Learning Outcomes :** Floorplanning

**Brief Description of working environment, expectations from the company :** Pretty chill. No in time restrictions. Can Work from home. Free drinks & coffee throughout the day.

**Academic courses relevant to the project :** ADVD (very small part of project is relevant, rest is new)

## Name : Shreeya Nasa (2015A8PS0437P)

**Student Write-up**

**Short Summary of work done during PS-II :** The idea of my main project is to design a tool/script which helps in reducing the number of hold time violations,

without introducing any significant number of setup violations.
The existing tool in use blindly keeps on adding buffers in path whenever it encounters a hold violation.
The intent behind developing this script is to smartly decide what techniques can be brought into use and to remove as many violations as possible, without adding any buffers in the path (since it leads to more congestion and routing issues).

**Tool used (Development tools - H/w, S/w) :** Unix, PrimeTime

**Objectives of the project :** To design a tool/script which helps in reducing the number of hold time violations, without introducing any significant number of setup violations.

**Major Learning Outcomes :** Perl, TCL, STA, ASIC Design Flow

**Brief Description of working environment, expectations from the company :** An overall positive atmosphere to work in.

## Name : Smruthi Balaji (2014B2A80783H)

**Student Write-up**

**Short Summary of work done during PS-II :** Work is done in the field of formal verification. A novel method of solving performance related issues using formal methods of verification are being tried.

**Brief Description of working environment, expectations from the company :** Manager and team are great. They are understanding and helpful.

## Name : Vrunda Tol (2014B2A30308P)

**Student Write-up**

**Short Summary of work done during PS-II :** The initial part of the internship was familiarization with the VLSI Design Flow and the tools used in the industry: Design Compiler, IC Compiler, and Primetime. Minor tasks to write Perl/Tcl scripts to overcome logical errors in the design's timing analysis were given. The project involved analyzing the correlation in hold slacks between ICC-2 and Primetime. I learned the details of Parametric On-Chip Variation modeling, which was used to generate timing reports in both the reports. In the process of investigating for the reasons because of which the slacks differ in ICC-2 and Primetime, I learned about the inputs which are applied in both the tools, the POCV LVF, and distance-derate data, and also about the different timing applications options/variables that control the flow. One of the major reasons for the difference in slacks is that the SPEF

(Standard Parasitic Extraction Format) file taken in Primetime is from another tool StarRC. After correcting other settings that lead to the difference in delay and getting a tighter correlation in SPEF, the internal hold fixes need to be introduced in ICC-2 in the next phase of the project. This analysis needs to be done for multiple corners and modes.

**Tool used (Development tools - H/w, S/w) :** Tools: IC Compiler, Primetime, Design Compiler.
Scripting Languages: Perl, Tcl

**Objectives of the project :** To optimize ICC-2 in order to get a tight correlation between ICC-2 and Primetime

**Major Learning Outcomes :** Familiarization with the tools used for design and timing verification and the process of VLSI Design Flow.

**Brief Description of working environment, expectations from the company :** The working environment is good. The employees and managers are willing to help in the whole team. They are busy with their work, so the interns have to follow up persistently. There is not much pressure from the company. The work can be done at one's own pace. Interactions with manager and mentor regarding the project are the best part for learning.

**Academic courses relevant to the project :** ADVD

## Name : Megha Mendu (2014B1A30639H)

### Student Write-up

**Short Summary of work done during PS-II :** Writing scripts to automate the generation of DFT structures on a floorplan using ICC2 database. Was also trained and involved in floorplan execution of live projects at Intel.

**Tool used (Development tools - H/w, S/w) :** Perl, TCL, ICC2

**Objectives of the project :** To reduce the manual effort and automate the DFT structures generation

**Major Learning Outcomes :** Got an industrial exposure to back-end VLSI design and have learnt scripting languages like Perl, TCL

**Brief Description of working environment, expectations from the company :** Intel has very good working culture and a good training schedule programmed to get an over all idea about all the steps involved in VLSI designing

# *PS-II Station: Investopad*

## Faculty

### Name : Ritu Arora

## Student

### Name : Mayank Goel (2014B4A30768P)

**Student Write-up**

**Short Summary of work done during PS-II :** Data integration with Salesforce, report of promising startups in Blockchain and bit to facilitate admins handle multiple WhatsApp groups

**Tool used (Development tools - H/w, S/w) :** Vue.js, MySql, Selenium, python

**Objectives of the project :** Increase work effeciency

**Major Learning Outcomes :** Automation, data processing

**Brief Description of working environment, expectations from the company :** Nice working environment, no pressure of work.

**Academic courses relevant to the project :** Startups courses

# *PS-II Station: J P Morgan Services Pvt. Ltd.*

## Faculty

### Name : B. V. Prasad

# Student

## Name : Akansha Dodeja (2014B3A40453G)

**Student Write-up**

**Short Summary of work done during PS-II :** Working in Credit Risk team, my work involved analyzing the investments in municipal bonds held by Chief Investment Office and Treasury at J. P. Morgan. The credit analysis includes but is not limited to financial statement analysis, business analysis, industry analysis and peer comparison.

**Tool used (Development tools - H/w, S/w) :** MS Excel

**Objectives of the project :** CREDIT RATING AND ANALYSIS OF MUNICIPAL BONDS

**Major Learning Outcomes :** Financial statement analysis, Business analysis, Industry analysis, Peer comparison analysis and Working of Municipal bonds in the United States

**Academic courses relevant to the project :** Fundamentals of Finance and Accounting

## Name : Shubham Aggarwal (2015A3PS0226P)

**Student Write-up**

**Short Summary of work done during PS-II :** Built a system to extract relevant information from a corpus of data and display it in graphical form.

**Tool used (Development tools - H/w, S/w) :** Python, intellij etc.

**Objectives of the project :** To extract important information from a corpus of data

**Major Learning Outcomes :** Learned how to practically apply neural networks.

**Brief Description of working environment, expectations from the company :** Really helpful people and a great learning experience.

**Academic courses relevant to the project :** OOP, NNFL

## Name : Nihal V P (2015A3PS0246P)

### Student Write-up

**Short Summary of work done during PS-II :** My work was to build an Android application that helps an employee to easily do many day to day activities like booking a meeting room,locating someone and exploring the office.I was working on the part that helps an employee to search for some other employee and locate him.My initial work also included building some poc applications for different mapping providers so as to select one of these to be used in the web, Android and iOS applications.After the selection all the components would integrate this mapping provider in their service.

**Tool used (Development tools - H/w, S/w) :** Android Studio,Bitbucket,Intelli J, Android Development

**Objectives of the project :** Create an application called My workplace that helps an employee to easily do many day to day activities like booking a meeting room,locating someone and exploring the office.

**Major Learning Outcomes :** I was able to learn how to build an Android application

**Brief Description of working environment, expectations from the company :** Very supportive and helpful colleagues

**Academic courses relevant to the project :** OOP

## Name : Shubham Rathi (2015A3PS0333H)

### Student Write-up

**Short Summary of work done during PS-II :** Source and interpret company and industry information from a variety of data sources, including company reports, the Internet, online databases and J.P.Morgan proprietary content with an aim to forming views on the industry, key trends and individual companies. Summarize and synthesize news
updates/research reports on priority clients, weekly industry report for Industry bankers and updates for ongoing Equity mandates, for both internal and external use. Financial analysis: Analysis and interpretation of financial statements including preparing trading and transaction comparables and benchmarking for companies in the sector/ products covered. Extract information from the company accounts, databases and other sources, using accounting knowledge and judgment. Pitching material preparation: Work with associates and
analysts in Mumbai and across regional locations to prepare marketing materials for

clients including target companies profiles, pricing and market information, market and industry landscapes, financial analysis & benchmarking etc. Industry or Product coverage : Work with analysts and associates at Mumbai to develop and apply industry/geographic market fundamentals (e.g. impact of economic/market conditions, terminology, competitive landscape, risks, trends) for the firm's clients across the globe.

**Tool used (Development tools - H/w, S/w) :** Bloomberg, Factset, MS office suite (Pitchpro+ included)

**Objectives of the project :** Making pitchbooks and researching data for front end bankers as they require

**Major Learning Outcomes :** In-depth knowledge of industry/sector the student is allotted. Significant insight about investment banking industry.

**Brief Description of working environment, expectations from the company :** Working environment is relaxed but professional behavior is expected. Clarity in basics of each course is appreciated.

**Academic courses relevant to the project :** FoFA, FM, DRM, BAV and SAPM

### Name : Lokesh Gandham (2015A7PS0143P)

**Student Write-up**

**Short Summary of work done during PS-II :** Implemented apis for pushing load balancer configuration onto F5 load balancer.

**Tool used (Development tools - H/w, S/w) :** Python, Django, Celery

**Objectives of the project :** Automation

**Major Learning Outcomes :** Writing efficient code, interpersonal skills

**Academic courses relevant to the project :** Computer Networks

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## *PS-II Station: Jarvis Consulting*

## Faculty

## Name : Ashish Narang

# Student

## Name : Nikhil Singh (2015A8PS0445P)

**Student Write-up**

**Tool used (Development tools - H/w, S/w) :** RubyOnRails, HeidiSQL

**Objectives of the project :** Project revolved mainly around product development, developing the product from scratch from make my wireframe to launching it.

**Major Learning Outcomes :** Product Management, Fluency with RubyOnRails, Communication skills

**Academic courses relevant to the project :** OOP

## Name : Rajaram Arun (2014B1AB0054P)

**Student Write-up**

**Short Summary of work done during PS-II :** Website design for easing of fuzzy match on two overlapping datasets, Quality control of the datasets generated through different fuzzymatching and elastic search results, development of html page layouts for data presentation in the required format.

**Tool used (Development tools - H/w, S/w) :** Python, html

**Objectives of the project :** Improve the quality of the datasets obtained through different sources, cleaning and standardisation including quality control.

**Major Learning Outcomes :** Latest technologies used in the data analytics industry, work culture

**Brief Description of working environment, expectations from the company :** Friendly work environment, mostly data handling using python, excel and other data analytics tools.

## Name : Nitin mankani (2014B5A10881P)

**Student Write-up**

**Short Summary of work done during PS-II :** Started working with data team and we focused ourselves on text data, Our work was to collect the data from various websites (web scraping), this is one set of data and clean another set of data which was given to us and map these two sets of data. Mostly the work involved python and to be specific dataframes, dictionaries, list, and a little bit of image processing.

**Tool used (Development tools - H/w, S/w) :** Python, Excel

**Objectives of the project :** To clean, map and present the data in a specific format given to us

**Major Learning Outcomes :** Applications of data frames, dictionaries, list and how to work with them in general.

**Brief Description of working environment, expectations from the company :** Working environment is not suitable for an intern, There is no proper hierarchy in the firm which makes it a lot difficult to communicate with my superiors , even with my mentors. Lack of professionalism is there.

**Academic courses relevant to the project :** A basic knowledge in python , EXCEL will help

## Name : Umang Garg (2014B1A1029P)

**Student Write-up**

**Short Summary of work done during PS-II :** Data Analytics of text data using tools and techniques of Python, Sql and Excel.

**Tool used (Development tools - H/w, S/w) :** Python, Sql, Jupyter Notebook,Excel,R

**Objectives of the project :** Data cleaning, Standardizaton and Analysis of Text data

**Major Learning Outcomes :** Using Python and excel for data analysis of text based data.

**Brief Description of working environment, expectations from the company :** Worked with highly motivated people for 6 days a week to achieve the results of the project.

**Academic courses relevant to the project :** Computer Programming, Data Structures and Algorithms, Machine Learning

## Name : AKASH SHARMA (2015A4PS0408P)

**Student Write-up**

**Short Summary of work done during PS-II :** Implemented an index backed by Data Analytics as well as an automated framework and a classification model that extracts, cleans and analyses unstructured demographics data for 9.5+ lakhs booths of India using set of attributes collated from multiple sources. This automated model will act as micro-targeting strategy for grass root outreach program to the potential voters for Indian General elections 2019

**Tool used (Development tools - H/w, S/w) :** Python, MS-Excel, PostgreSQL, HTML

**Objectives of the project :** Data cleaning, extraction and mapping using Python and PostgreSQL

**Major Learning Outcomes :** Practical application of data analytics using Python and MS-Excel, Handling data operations with PostgreSQL and automating PDF generation using Python and HTML

**Academic courses relevant to the project :** Data Analytics

## Name : Saurabh Borse (2015A4PS0397P)

**Student Write-up**

**Short Summary of work done during PS-II :** Web development using RubyOnRails.

**Tool used (Development tools - H/w, S/w) :** RubyMine, SQL, VBA.

**Objectives of the project :** Developing Web Application for Client.

**Major Learning Outcomes :** Learnt Web Devolopment.

**Brief Description of working environment, expectations from the company :** Our project involved a team of developing product.

**Academic courses relevant to the project :** OOP, DSA, WebD.

Name : Lavkush Upadhyay (2015A5PS0947P)

**Student Write-up**

**Short Summary of work done during PS-II :** Mapping, standardization and cleaning of data and providing client data in structured format.

**Tool used (Development tools - H/w, S/w) :** R, Python, Excel, PostgreySQL

**Objectives of the project :** To provide client data in a well structured format for further analysis.

**Major Learning Outcomes :** Text analysis of data

**Brief Description of working environment, expectations from the company :** Jarvis Technology is a Political consulting firm which helps client in providing tech support during election campaign phase. I am the part of the data team where our work is based on text analytics. Company soon will be going to degitilise election campaign phase.

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# *PS-II Station: JDA Hyderabad*

## Faculty

### Name : Radhika Bulla

## Student

### Name : Mohammad Rizvi (2014B3A10937H)

**Student Write-up**

**Short Summary of work done during PS-II :** Developing a end to end ecosystem test automation suite for a SAAS application.

**Tool used (Development tools - H/w, S/w) :** JavaScript Selenium Webdriver Protractor

**Objectives of the project :** Automating UI tests of application before production push

**Major Learning Outcomes :** Automating Testing

## Name : Abhishek Singh (2014B2A20150P)

**Student Write-up**

**Short Summary of work done during PS-II :** Projects on web development.

**Tool used (Development tools - H/w, S/w) :** PHP, JavaScript and Ajax without any framework

**Objectives of the project :** to make portal for the clients of company all around the world

**Major Learning Outcomes :** Php, javascrip and the use of Ajax in web development

## Name : Rudrakh Panigrahi (2015A3PS0289P)

**Student Write-up**

**Short Summary of work done during PS-II :** Work was primarily based on the Software Development Life Cycle (SDLC) of a product. As an intern, it will be expected to automate manual checks and help in performing daily builds as requested by the team. There were some workshops/trainings on version control and application security.

**Tool used (Development tools - H/w, S/w) :** Most of the internship required python scripting/ bash scripting skills. Sometimes I was given some CI/CD tools to learn about, but the most important skill that was used is python.

**Objectives of the project :** Development and maintenance of a Continuous Integration/Deployment pipeline

**Major Learning Outcomes :** SDLC, DevOps, CI/CD development, Application Security

**Brief Description of working environment, expectations from the company :** The working environment was good. There was ample of free time to hone new skills. But don't expect data science/research oriented projects here. Most

of the projects assigned here were DevOps app support/QA automation.

**Academic courses relevant to the project :** CP, OOPs

## Name : Shaleen Mundra (2015A3PS0804P)

**Student Write-up**

**Short Summary of work done during PS-II :** Project on automation and web development. We automated a whole application as a part of QA role. We learnt about JS, Protractor, Selenium Webdriver, and automation in general.

**Tool used (Development tools - H/w, S/w) :** Protractor, Selenium, JS

**Objectives of the project :** Automation

**Major Learning Outcomes :** javaScript, automation

**Brief Description of working environment, expectations from the company :** Work environment is very chilled out and there is no pressure on students. this review may vary from team to team though. My team was one of the best and I was satisfied with work and feedback given to me. There was proper guidance and smooth workflow though at many time we were free and were encouraged to pursue our own projects.

**Academic courses relevant to the project :** C programming, OOP, DSA

## Name : Siddharth Kumar Shukla

**Student Write-up**

**Short Summary of work done during PS-II :** Worked on automation of manual testing. I automated the testcases which were earlier done manually. It required a deep knowledge of Selenium webdriver. Also, I worked on improving the existing framework.

**Tool used (Development tools - H/w, S/w) :** Selenium web driver
Java, Html, CSS, JavaScript

**Objectives of the project :** To automate the test cases which were earlier done manually

**Major Learning Outcomes :** Learnt Selenium, Improved efficiency of few Algorithms, Improved the existing framework

**Brief Description of working environment, expectations from the company :** There was a lot of work in the team I was allotted to. In few of the teams, interns were assigned no work while in others; they were assigned to much work. So, it all depends which team you get allotted to.

**Academic courses relevant to the project :** Object Oriented Programming
Supply Chain Management

## Name : SANJO SHAJU (2015ABPS0730H)

**Student Write-up**

**Short Summary of work done during PS-II :** Created a desktop application that is used to create dashboards for the data from JDA Space planning software. Automated a process for getting data from excel files to SQL Servers, which had many constraints that had to be followed. Manipulation of data received from client using python

**Tool used (Development tools - H/w, S/w):** Electron JS, Node JS, SQL Server, Oracle database, TOAD, IBM Cognos

**Objectives of the project :** To make the data analysis clearer and more intuitive

**Major Learning Outcomes :** Web development and data analytics

**Brief Description of working environment, expectations from the company :** Work life balance was great

## Name : Rohan Agarwal (2014A5PS0792P)

**Student Write-up**

**Short Summary of work done during PS-II :** My project was development of cloud portal which would help the company to handle day to day tasks easily and efficiently. Backend part was made in python, Django and django REST Framework and frontend was made in reactJS

**Tool used (Development tools - H/w, S/w) :** Postman, RDP , Putty, AWS EC2

**Objectives of the project :** The objective of this project was to learn the new technologies

**Major Learning Outcomes :** Python, Django, ReractjS and Django REST Frameowrk

**Brief Description of working environment, expectations from the company :** The working environment of the company is casual and there are very less projects related to development except in product development department of the company

**Academic courses relevant to the project :** OOP , SCM, Web development course

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## *PS-II Station: JDA Software Private Limited, Bangalore*

## Mentor

### Name: Nishant Kumar

**Designation:** Project Manager, Global Delivery

**Comments:** Students are committed to work with good programming acumen. They picked up technologies like .NET and SQL server on their own and came up with solution possibilities. Time discipline and self - driven approach need to be sharpened.

## Faculty

### Name : Vineet Garg

## Student

### Name : Rachana Kavva (2015A7PS0006P)

**Student Write-up**

**Short Summary of work done during PS-II :** Worked on company's existing mule application which was basically developed on Anypoint Studio using java, xml and json languages. Performed testing, fixed bugs, implemented some other features

and documented implemented features and published to Anypoint Exchange.

**Tool used (Development tools - H/w, S/w) :** Mulesoft's Anypoint platform and Postman

**Objectives of the project :** To publish the project to Anypoint Exchange

**Major Learning Outcomes :** Learnt about mulesoft, postman, xml and json style sheet languages and web services.

**Brief Description of working environment, expectations from the company :** Project given was decent and timings are flexible

## Name : AKHIL SAI ARAJA (2015A2PS0609H)

**Student Write-up**

**Short Summary of work done during PS-II :** Designing a dashboard for the team so that all the customer and employee data can be accessed on a single site.

**Tool used (Development tools - H/w, S/w) :** Oracle SQL developer, Visual studio 2017

**Objectives of the project :** Designing a dashboard for the team so that all the customer and employee data can be accessed on a single site.

**Major Learning Outcomes :** ASP.NET , bootstrap, HTML5, css and js.
Django framework and python
Oracle SQL developer and mySQL

**Academic courses relevant to the project :** Object Oriented Programming

## Name : Rahul Saini (2014D2PS0972P)

**Student Write-up**

**Short Summary of work done during PS-II :** I worked on the Channel prioritisation and came up with solution to automate the process of setting the priority of each location by the system itself.. In JDA Fulfillment Product, customers had to manually set the priority of the place where the demand is to satisfied by the system which in large SKU( Stock Keeping Unit) becomes very hectic and unproductive to manually set priority for each location in the SKU. After Automation of Channel Prioritisation the system will automatically set the priority of the location based on the stock available, previous order history, type of demand etc. This project was specific

requirement of one of the customer of JDA who wanted that in case of constrained supply there most important customers receive supply first.

**Tool used (Development tools - H/w, S/w) :** Toad for Oracle to create MySQL scripts.

**Objectives of the project :** To Automate the Channel Prioritization process and to delete the obsolete data present on the JDA Fulfillment Product. Also, in case of limited supply the most important customers receive supply first.

**Major Learning Outcomes :** 1- Learned about the Fulfillment process.
2- Learned how to use the JDA Fulfillment Product.
3- Learned how to deal with customer issues related with JDA fulfillment Product.
4- Worked on the Channel prioritisation and came up with solution to automate the process of setting the priority of each location by the system itself.
5- While Automation of channel prioritisation it will also delete the obsolete data.
6- Learned SQL( Structured Query Language) and how to manage Database.
7- Learned how to use the software Toad for Oracle.
8- Learned about the Presentation making and presenting skill.

**Academic courses relevant to the project :** Supply Chain Management, MMCD( Mass Media and Content Design).

## Name : Buddhavarapu spandana (2013B2A20826P)

**Student Write-up**

**Short Summary of work done during PS-II :** Created a website to automate processes for workforce management retail division

**Tool used (Development tools - H/w, S/w) :** Bootstrap, JavaScript, PHP, sql

**Objectives of the project :** To automate processes in wfmr division

**Major Learning Outcomes :** Learning to build a website from scratch

**Brief Description of working environment, expectations from the company :** Working environment is very good, no restrictions, free lunch, freedom to improvise

**Academic courses relevant to the project :** Programming in C

## Name : Pratibha Kumari (2015B4TS0978P)

**Student Write-up**

**Short Summary of work done during PS-II :** Tested and Modified the software Factory Planner and helped team in making the successful release of FP cumulative patch 2018.1.0.1

**Tool used (Development tools - H/w, S/w) :** IntelliJ, Jira, VisualStudio Code

**Objectives of the project :** To test and modify the software FPUI(Factory Planner User Interface) using Adobe AIR

**Major Learning Outcomes :** ActionScript, Java, and Angular 4.

**Brief Description of working environment, expectations from the company :** Co-operative and helpful co-workers , good work environment

**Academic courses relevant to the project :** OOP, OS and Optimization

## Name : Vishal Ojha (2015A4PS0432P)

**Student Write-up**

**Tool used (Development tools - H/w, S/w) :** PHP, HTML, CSS, JavaScript

**Objectives of the project :** Web Development

**Major Learning Outcomes :** PHP, HTML, CSS, JavaScript

## Name : Haroon Khan (2015A1PS0675P)

**Student Write-up**

**Short Summary of work done during PS-II :** Supported the cloud automation team with various skills both present before hand and learnt over the course of the PS. It included writing scripts to help create various portals that would be used by JDA clients as well as employees. Also occasionally building entire portals from ground up.

**Tool used (Development tools - H/w, S/w) :** JavaScript, PHP, Ajax, Bootstrap, HTML/CSS, Python, C#, Visual Studio

**Objectives of the project :** No fixed objective due to the diversity of work provided

**Major Learning Outcomes :** Better understanding of design patterns, new languages learnt that are largely used for web development, balancing time and work to meet deadlines.

### Name : Swaroop Goli (2015A5PS0861H)

**Student Write-up**

**Short Summary of work done during PS-II :** Worked on the demonstration of an IoT device which is used for the ware house security check-in, which includes demonstration of blinking of an LED and displaying a message on an LCD.

**Tool used (Development tools - H/w, S/w) :** Raspberry Pi, Python

**Objectives of the project :** To make the IoT device work, especially for the Ware house security check-in.

**Major Learning Outcomes :** working of Raspberry Pi, coding in Python, making an LED to blink, displaying a message on an LCD.

**Brief Description of working environment, expectations from the company :** More than a corporate environment, this is more likely to be a friendly environment and though there aren't any strict timings for to be followed, but one needs to deliver expected results and meet all the deadlines irrespective of how much time one works in the office.

**Academic courses relevant to the project :** C, OOPs, working of an arduino or RPi (specifically), Basic knowledge about circuits and connections.

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## *PS-II Station: John F Welch Technology Center, Bangalore*

## Faculty

### Name : Mr Srinivas Kota

## Student

## Name : M.Vijay Vikas (2015A4PS0324H)

**Student Write-up**

**Short Summary of work done during PS-II :** It is generally an automation project based on Java programming.I have to develop a steam turbine design automation tool and also test the functionality to assure quality.

**Tool used (Development tools - H/w, S/w) :** In house Tools,MS Office Tools

**Objectives of the project :** Developing and testing of an In-house steam turbine design automation tool

**Major Learning Outcomes :** Core concepts,Basics of Java, Business aspects,Work life balance

**Brief Description of working environment, expectations from the company :** Very encouraging environment.Company expects to deliver outputs in time.The work isn't too hectic though.Very comfortable to work in the company and lucky to be in nice time and excellent Manager.The work allotted to me made me to contribute many things for the welfare of the project.

**Academic courses relevant to the project :** Power Plant Engineering,Prime Movers and Fluid Machines

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# *PS-II Station: JP Morgan Chase & Co.*

## Faculty

### Name : YVK Ravi Kumar

## Student

### Name : Aakruti Jain (2015A8PS0442H)

**Student Write-up**

**Short Summary of work done during PS-II :** The work was based on software development mainly. We got to learn and understand complete cycle from brainstorming, developing to deploying the application.

**Tool used (Development tools - H/w, S/w) :** SpringBoot framework, JavaScript, AngularJS, React, JQuery, ElasticSearch, Pitest, SQL

**Objectives of the project :** Develop an application to manage the content (articles) and provide intelligent search for the users

**Major Learning Outcomes :** Got technical and functional understanding of how things work in practical scenario

## Name : Uday Sankar Y (2015AAPS0236H)

### Student Write-up

**Short Summary of work done during PS-II :** My role in the company is to analyze, report on the operation errors the teams commit across the 14 locations in Asia-Pacific. Further work in co-ordination with Ops managers for the implementation of preventive actions to avoid similar errors in the future which helps for a smoother client experience. The whole process is done on the basis of financial rules and regulations of each economy. Emphasis is given on Compliance requirements and Risk mitigation throughout the whole process with privacy as the key. Another project is on the monthly analysis on the FX statistics across APAC countries and report to senior management. I am also responsible for making out inferences on the transaction data on a daily basis and suggest trends on which kind of transactions are facing issues while processing, by looking at various factors to the senior management.My role in the company is to analyze, report on the operation errors the teams commit across the 14 locations in Asia-Pacific. Further work in co-ordination with Ops managers for the implementation of preventive actions to avoid similar errors in the future, which helps for a smoother client experience. The whole process is done on the basis of financial rules and regulations of each economy. Emphasis is given on Compliance requirements and Risk mitigation throughout the whole process with privacy as the key. Another project is on the monthly analysis on the FX statistics across APAC countries and report to senior management. I am also responsible for making out inferences on the transaction data on a daily basis and suggest trends on which kind of transactions are facing issues while processing by looking at various factors, to the senior management.

**Tool used (Development tools - H/w, S/w) :** Excel, Visual Basic for Applications, PowerPoint, Tableau, Company internal software

**Objectives of the project:** 1. Monitor all the operations errors being committed.
2. Monitor/Analyze all the production incidents being committed.

3. Analyze the Foreign Exchange statistics.
4. Client Monitoring.
5. Queue monitoring of Korea transaction queue.

**Major Learning Outcomes:** 1. Communication is a key learning as I talk to people from 14 locations across Asia-Pacific, each having their own accents. Also, it involves me communicating with everyone in the corporate ladder from team members till managing Directors across various spheres of life, location and age.

2. Detailed understanding of financial processes end to end i.e. how a transaction goes from the client to its completion. I am now well versed with the terminology used in my LOB. I am well equipped with the legal and professional knowledge that is required when dealing with sensitive and critical data which has to be kept in accordance with client privacy.

3. I am exposed to the senior management almost on a daily basis which has helped me learn and develop the best corporate and professional experience through this internship. This has helped me approach a problem with a different perspective and to take up an initiative to solve one. This has been a great opportunity to work at such a prestigious organization and learn from the very corporate elite.

**Brief Description of working environment, expectations from the company :** The working environment is very professional as expected from the largest commercial bank in America. In the same way they make sure the interns are well educated on the processed before diving into the projects.

**Academic courses relevant to the project :** Principles of Economics, Fundamentals of Finance and Accounting, Technical Report Writing

## Name : Parth Dhingra (2015ABPS0872P)

**Student Write-up**

**Tool used (Development tools - H/w, S/w) :** Tableau, Excel, PowerPoint

**Objectives of the project :** Gauging Efficiency of BOT Throughput across various business functions in Client Account Services and creating an efficient framework for BOT issues resolution

**Major Learning Outcomes :** 1- I got the detailed understanding of a financial institution with end to end process
of how an account is opened, maintained and closed. I also got the legal and professional knowledge that is required when dealing with sensitive and critical data which has to be kept in accordance with client privacy.
2- I learnt strategic BOT data analysis based on No. of In Scope requests processed, failed, FTE saves, UPT delivered per business function.

3- During my internship, I got exposed to business dynamics, partnered with Ops and Tech teams to prioritize and resolve BOT issues and created synergy between teams.
4- I was able to learn and develop the corporate and professional behavior as I talked with the senior management quite often on a one-to-one basis.

**Academic courses relevant to the project :** Professional Ethics

## Name : Ganisha Bhawsar (2014B3A80800G )

**Student Write-up**

**Tool used (Development tools - H/w, S/w) :** Tableau, Excel VBA, Reflection Workspace, PowerPoint,

**Objectives of the project :** Improve Operational Activities in Cash operations

**Major Learning Outcomes :** Corporate Reporting and analysis

**Brief Description of working environment, expectations from the company :** A great internship program, focused towards full development of a corporate Analyst. Working environment is strictly professional and very positive. Although a little flexibility is required from the interns in terms of shift timings, this largely depends on the team allocated and your manager.

**Academic courses relevant to the project :** Principles of Management, finance

## Name : Saurav Narula (2014B4A30814P)

**Student Write-up**

**Short Summary of work done during PS-II :** To develop and android application which has many employee related services integrated in it like access badge, searching for an employee and his information, booking a meeting room etc.

**Tool used (Development tools - H/w, S/w) :** IntelliJ, Android Studio

**Objectives of the project :** To develop an android application along with the backend microservices to be used in the app

**Major Learning Outcomes :** Learnt how to build android application and java spring boot application

**Academic courses relevant to the project :** OOP (as all the work was in JAVA)

## Name : Praneeth.K (2015AAPS0280H)

**Student Write-up**

**Tool used (Development tools - H/w, S/w) :** Excel, Tableau, Share Point

**Objectives of the project :** Metrics Reporting and Performance Improvement

**Major Learning Outcomes :** Project management, Business Syndication

**Academic courses relevant to the project :** Fundamentals of Finance and Accounting, Derivatives of Risk and Management

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# *PS-II Station: JP MORGAN CHASE Hyderabad*

# Faculty

## Name : YVK RAVI KUMAR

# Student

## Name : SOHAM MUKHERJEE (2015AAPS0267H)

**Student Write-up**

**Short Summary of work done during PS-II :** 1. A web-app to provide a user interface and persistent database for a chaos engineering API.
Learnings: Spring Boot, Angular, REST-API, oAuth2, Chaos Engineering concepts.
2. Implementation of Ambassador design pattern in Kubernetes to connect to external databases and services using Twemproxy.
Learnings: Twemproxy, Distributed Design Patterns in Kubernetes, Kubernetes, Redis.
3. Fault Injection in Kubernetes using shell scripts to test application performance in turbulent conditions.
Learnings: Shell Script, Kubernetes, Chaos Monkey, Kube Monkey.

**Tool used (Development tools - H/w, S/w) :** Spring Boot, Angular,

Kubernetes, Shell Script

**Objectives of the project :** To build confidence in the production environment to withstand turbulence in the system.

**Major Learning Outcomes :** Platform as a service, DevOps, SpringBoot Development

**Brief Description of working environment, expectations from the company :** Quite flexible environment. Good working culture, with friendly and helpful colleagues. Managers are understanding.Have a learning attitude, create good network, and have a good rapport with your team and managers, as PPO are on cards.

**Academic courses relevant to the project :** Object Oriented Programming, Cloud Computing, DBMS

## Name : Aryan Sahi (2015ABPS0744H)

### Student Write-up

**Short Summary of work done during PS-II :** I am using a data science and a data analytics software known as Alteryx for consolidation and reconciliation of Broker Files. Previously they use to do this work using Excel. I have automated this using Alteryx. My teammates were doing this whole work of consolidation and reconciliation in 1 week/desk. Now with the introduction of this software I have created a template of each and every broker of each desk. So in the future they only have to add their input files and just run the program. The output will be presented in a few seconds and anyone wants to make some changes in input files if they are different from my template they have to add some tools and the output will be displayed. So this software has played an effective role in automating this full work . Meanwhile I am also in touch with teams from London on this project.
Due to this initiative only it has saved a lot of manual works and moreover provided a good output too.
Alteryx has a stated goal of enabling advanced analytics to be performed by any data worker. In preparation of Broker Data this Alteryx plays a major role.There are lots of tools in Alteryx and using these tools we prepare data. Its just save time. After this we do reconiliation i.e just a matching between the fields and adding some new data.

**Tool used (Development tools - H/w, S/w) :** Data analytics tools like Xceptor, Alteryx and Python.

**Objectives of the project :** The main objective of the project was automating the works which were previoulsy done on excel and onboarding these works on softwares so as to automate and thus reduces the time taken. Also providing a good opportunity to interact with all the upcoming data science softwares in the market.

**Major Learning Outcomes :** I have learnt a lot during this internship. And this 5.5 months in JP Morgan were really amazing and exciting because this firm has Good branding, and provide a lot of opportunities to work in different areas .The most important is good work culture ,good work life balance and encouragement for Non-BAU activities. And team work also plays an effective role in work. New and improved skills and how to apply them, Professional communications, Networking is important, Taking constructive criticism well, Work hard no matter what you're doing and Making connections are the key ones.

**Brief Description of working environment, expectations from the company :** JP Morgan Chase & Co. is an American multinational investment bank and financial services company. The working environment is really good and amazing . I found a lot of excellent brains in and around me working on the same platform., A lot of real world exposure i.e its one of the primary reasons why students prefer internships over training. I met many smart people. Back in my undergrad university I was better than most of my peers. During my internship, I met other interns who were smart too. I felt dumb most of the time. That experience of sitting in a room where everyone else is better than you is amazing.I attended so many hackathons, career fairs and intern parties. All of which helped me expand my professional network and helped me evaluate different career options at my disposal.I learnt cultural tolerance. People do and believe in so many diverse things.

**Academic courses relevant to the project :** Derivatives and Risk Management, Security Analysis and Portfolio Management.

## Name : Vatsal Beria (2015A3PS0162P)

### Student Write-up

**Short Summary of work done during PS-II :** I was given a ML project to do by myself. It was to build a prediction model to forecast faults. The another project that I did was to develop a web application. The application was for collecting feedback from different teams across the firm.

**Tool used (Development tools - H/w, S/w) :** Jupyter Notebook (python, ML), Idea intellij (Web app)

**Objectives of the project :** Fault prediction, feedback application

**Major Learning Outcomes :** ML knowledge, Web development know-how

**Brief Description of working environment, expectations from the company :** Great professional working environment

**Academic courses relevant to the project :** CP, OOP, NNFL

# *PS-II Station: JP Morgan Services - Global Markets Group*

## Faculty

### Name : Bandi Venkata Prasad

## Student

### Name : Shivyam Rastogi (2015A1PS0620G)

**Student Write-up**

**Short Summary of work done during PS-II :** I worked with the Structural Interest Rate Risk Management team. I was responsible for preparing some weekly reports. My project involved studying the past deposit trends of the bank and forecasting deposit growth rates using market variables like M2 velocity, Fed funds rate and the size of the Fed balance sheet. Apart from this, I also worked on some automation of a few reports to increase efficiency and reduce the turn around time.

**Tool used (Development tools - H/w, S/w) :** Excel, VBA, R

**Objectives of the project :** Forecasting / Automation

**Major Learning Outcomes :** Learned some basic machine learning algorithms and their implementation in R, , Functioning of Fixed income securities market

**Brief Description of working environment, expectations from the company :** PS2 has been an overall wonderful experience for me. The kind of exposure I have received during the PS2 program at JP Morgan is unmatched and a very valuable asset at such an early stage in my career. It has also exposed me to the working of the finance sector and the kind of skills required to make a career in the industry. Thereby it has provided me with the opportunity to assess whether this would be the right career path for me. My manager and the members of my team were extremely supportive and were happy to take out time from their busy schedule to clarify my doubts and queries.

**Academic courses relevant to the project :** Financial Management, Derivatives and Risk Management, Financial Risk Analytics and Management

## Name : Akshat Shah (2015A3PS0235G)

### Student Write-up

**Short Summary of work done during PS-II :** The Counterparty Risk Group oversees and assesses the risks which arise due to the Financial Counterparties with whom the JP Morgan Asset Management does business. The team is based in three locations- New York, Hong Kong and Mumbai. The team does annual reviews and performs credit analysis of various counterparties with which the business is involved in various trades and assigns credit ratings to them. The team also performs account concentrations to assess the over exposures and investigate the same. The Mumbai tasked with the Annual Credit reviews of the various FIG (Financial Institutions Group) (Banks, Broker-Dealer, Insurance Firms). The credit review process involves qualitative and quantitative checks. Qualitative includes looking at the operating environment, history, strategy, key segments, recent events and management of the entity. In terms of quantitative factors, the profitability (RoE- Return on Equity, RoA- Return on Assets, NIM- Net Interest Margin), asset quality (NPL ratio- Nonperforming loan), liquidity (LCR- Liquidity Coverage Ratio, NSFR- Net Stable Funding Ratio), capitalization (CET1 ratio- Common Equity Tier 1) and funding (LDR- Loan to Deposit ratio) of the entity are assessed. A stress test is performed and the asset quality and capitalization are stressed in low, medium and severe stress situations. We also do a peer analysis to see where the entity ranks alongside its immediate competitors.

**Tool used (Development tools - H/w, S/w) :** Excel, Powerpoint, Tableau, Proprietary Software

**Objectives of the project :** Credit Analysis of Financial Institutions

**Major Learning Outcomes :** Analysis of Financial Statements, Knowledge of the Banking Sector and Regulations

**Brief Description of working environment, expectations from the company :** PS 2 overall has been a very positive experience for me. I have learnt a lot of new things and seen the concepts learnt in class come to life in a professional environment. Having had the opportunity to work in a company like JP Morgan at such an early stage of my career is sure to benefit me in the future. It is an awesome opportunity to excel in the field of finance and the work we do is top- notch. The interns receive no differential treatment and are given good, challenging work. Credit Analytics is receiving a huge interest these days and is deemed as one of the most sought after fields. In an era where automation and computing powers is increasing the operation efficiency and making the lives convenient, there remains a strong need for subjective assessment and understanding of the business. The knowledge which one can accumulate is diverse and is very well transferable to other areas. All

my work is getting used on a regular basis and it has been a splendid experience all together. I believe that the PS 2 programme is a huge asset and it provides students with the necessary exposure at the right time in their career. The various aspects of professional life that we learn here are essential and they prepare us for the future, keeping us in good stead with the pace of the working world.

**Academic courses relevant to the project :** Fundamentals of Finance and Accounting

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## *PS-II Station: JP Morgan Services GRC*

## Faculty

### Name : BV Prasad

## Student

### Name : Jayanth Narayan Challapalli (2014B3AB0620H)

**Student Write-up**

**Short Summary of work done during PS-II :** Sell sode analyst intern - Equity Research. Financial modelling, newsflow, company financial results

**Objectives of the project :** To get a overall view of how an equity research team works

**Major Learning Outcomes :** Excel, Accuracy, analysis of different segments of a company

**Academic courses relevant to the project :** BAV

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# *PS-II Station: JP Morgan Services Pvt. Limited, Global Research Center, Mumbai*

## Faculty

### Name : B V Prasad

## Student

### Name : V Karthik

**Student Write-up**

**Short Summary of work done during PS-II :** I was in the FinTech team, supporting the whole of the GKN divison building tools for them. My first project is going to be scaled up and implemented firm-wide and all of the Analysts will be using it in the future. My other projects involved NLG, NLP but I also built a lot of macros and scripts for the GKN team ranging from data extraction to improving the models built by analysts.

**Tool used (Development tools - H/w, S/w) :** VBA, Python, R, ML topics like NLG& NLP, advanced Python libraries and programs like cx_freeze, Selenium, as well as many R packages.

**Objectives of the project :** To build various products to save the time and effort of the whole GKN divison.

**Major Learning Outcomes :** I learnt a lot about the world of FInance, building models, the reauirements of analysts. I also learnt how to code very effeciently and build very exciting projects and get constant interactions from upper management.

**Brief Description of working environment, expectations from the company :** This company is a very fast-paced environment the growth is fast but dies out in 2-3 years and people go for their MBA or switch into other teams internally. You wil learn a lot talking and interacting with everybody on your floor. Everybody is open and willing to help you and guide you.

**Academic courses relevant to the project :** C Programming, Object Oriented Programming, Stock Analysis And Portfolio Management, Fundamentals of Finance & Accounting.

## Name : Apoorv Ranjan (2015A3PS0376H)

**Student Write-up**

**Short Summary of work done during PS-II :** These 5 months at JP Morgan as an intern played a crucial in bridging the gap between the theoretical and conceptual knowledge we get at school, and practical one. It helped me understand the workings and organizational culture and behavior in a global level only because JP Morgan is a large MNC, where following the rules and being completely professional is vital. Further, Courses such as Fundamentals of Financial Accounting, Security Analysis and Portfolio Management, Derivatives and Risk Management, and Technical Report Writing have been very useful in grasping things easily. In my free time, I am leaving no opportunity to venture into learning new things from sources on Bloomberg, Morningstar, DataStream and Morgan Markets. This internship has been really exciting and resourceful. I have learnt many things and made some mistakes nevertheless.

**Tool used (Development tools - H/w, S/w) :** Bloomberg, Excel

**Objectives of the project :** Equity Research

**Major Learning Outcomes :** Learning and exposure to live products

**Academic courses relevant to the project :** All finance courses

## Name : FIROZ M S (2015A4PS0429H)

**Student Write-up**

**Short Summary of work done during PS-II :** Convertible bond pricing
Pitch book preparing

**Tool used (Development tools - H/w, S/w) :** Dealogic, factset, excel

**Objectives of the project :** Ppts

**Major Learning Outcomes :** Pricing mechanics
Data handling

**Brief Description of working environment, expectations from the company :** Work place is lively and enthralling

**Academic courses relevant to the project :** BAV, FOFA

# *PS-II Station: JP MorganServices*

## Faculty

### Name : Mr. B.V Prasad

## Student

### Name : Prateek Dusad (2015A2PS845P)

**Student Write-up**

**Short Summary of work done during PS-II :** I mainly worked to produce to two tools one was daily market data update pack which can be used to perceive potential liquidity risk to firm and the other was weekly risk pack update it was an automated tool to produce summary of major moves within Asia pacific region. Besides I worked on analysis of repo market of China, Korea,South Africa , I also worked on few automation projects

**Tool used (Development tools - H/w, S/w) :** Tableau, MS excel, R programming, In house software

**Objectives of the project :** To better forecast the changes in liqudity and to ease the processes by automation

**Major Learning Outcomes :** 1. Liquidity Risk and its management in detail
2. Functioning of various departments of a bank
3. Got good understanding of repo and fx markets

**Academic courses relevant to the project :** Financial risk analytics and management, DRM, SAPM

# *PS-II Station: JPMC - CIB Ops*

## Faculty

## Name : Prof. Krishnamurthy Bindumadhavan

# Student

## Name : Tanay Lokhandwala (2015A3PS0273G)

### Student Write-up

**Short Summary of work done during PS-II :** I was put in the projects team in which we had to optimize and automate the different processes and banking operations using a variety of tools. I did not have to do any boring work on excel, and even though the projects at some point of time become monotonous, if you are able to show your manager that you are capable of delivering big projects, he will assign you some very interesting ones that will pose a challenge to you.

**Major Learning Outcomes :** Business designing and solutioning, understanding the basic outlay of how such a huge bank functions and advancement of technical and analytic skills were the 3 major takeaways from this PS.

**Brief Description of working environment, expectations from the company :** Luckily I was put in a team which was very welcoming. There was no age discrimination; they were always ready to help me out whenever I had a problem. It was a pleasant experience overall.

## Name : Himanshu Todwal

### Student Write-up

**Short Summary of work done during PS-II :** I have worked closely with the Business Transformation team. There has been a lot going out in terms of Automation in the Industry. I was involved in identifying the potential Opportunities of Automation, understanding various lines of businesses and analyzing the sequence of operations throughout the organization. I was required to develop models leveraging concepts of Assembly Line used in engineering and designing a map for various applications used in the firm to optimize the complete processing of data. Strategic implementation of various methods to deduce a basic code for transforming a general process into an application comprised of my initial project which gradually shaped into a Global task involving teams from various parts of the country and became a core of Project Management. In a nut shell, it was a combination of Technology and Management.

**Tool used (Development tools - H/w, S/w) :** Microsoft Excel, Microsoft

Powerpoint (Extensive use), Company licensed softwares

**Objectives of the project :** To Identify potential Automation opportunities and determine the optimum solution (Strategic/Robotics) minimizing the time required and maximizing the return on Investments

**Major Learning Outcomes :** Robust Governance Models, Teamwork, Project Management, Automation on tools, Global Communication, Networking, Stakeholder Management

**Brief Description of working environment, expectations from the company :** The expectation is to learn and practice on whatever task is being assigned to you as a training exercise in the initial one month. Thereafter, the person needs to understand the dynamics of the organization i.e. (s)he needs to be vigilant of what is happening in a particular project of the team and in the organization as a whole. (S)he needs to understand the system and curriculum being very particular about the communication and accountability. (S)he must be aware of the impact any word said by him/her can create henceforth. It will be easy to get comfortable with whatever technical tools are in the space but, keeping track of everything as a project manager is where the real test will begin. All in all, being in the project management needs you to be on your toes every moment, keeping track of the projects, suggesting ways to clear the road blocks pertaining to a project and finding optimum solutions even while coding being from an engineering background. It is a complete package of an overall and brilliant learning experience.

**Academic courses relevant to the project :** Financial Management (Excel Exercises), Financial Risk Analytics and Management (Excel Problems)

## Name : Mithun Nair (2015A4PS0345P)

### Student Write-up

**Short Summary of work done during PS-II :** Banking operations make sure our processes and transactions are executed correctly, which minimizing risk and maximizing quality of service. Our job is to make sure that end to end transactions are processed within due time for corporate clients of JP Morgan Chase and Company inclusive of any FX investments for delivering the best experience and client priority in banking across the Asia – Pacific Region. Any delay or error in the conveyance of information or processing it directly leads to a real time financial and reputational loss for the company, which makes the role of the team more crucial. My role in the company is to identify daily tasks involved in the whole process and increase efficiency by automating such tasks using Software skills in Visual Basic Applications and tools like Tableau to minimize human errors and meeting the client's requirements in a smooth way within due time. The whole process is done on the basis of financial rules and regulations of each economy. I am also responsible for making out inferences on the automated data on a daily basis and suggest them to the senior management so that it is put into production. Working at such a prestigious

organization has helped me gain the best corporate exposure and develop a professional attitude. I have had the opportunity to work under the corporate elite and inspire from them.

**Tool used (Development tools - H/w, S/w) :** MS Office, Qlikview, VBA and Tableau

**Objectives of the project :** Enhancing end to end client experience

**Major Learning Outcomes :** Transaction life cycle, Presentation skills and soft skills

**Brief Description of working environment, expectations from the company :** Fun work environment, Fair amount of interaction with senior management and high expectations from us because of the background we come from.

## Name : Shivam Jindal (2015ABPS656P)

**Student Write-up**

**Short Summary of work done during PS-II :** Automation allows me to free up a lot of time that would have been used for manual work.
Worked on different problem statements that may arise any time in an operations line.
Detailed understanding of a financial institution with end to end process of how a transaction goes from the client to its completion

**Tool used (Development tools - H/w, S/w) :** VBA Excel, Xceptor, Qlikview.

**Objectives of the project :** • Identification of existing reporting and Management Information Systems that can be automated using the licensed web tool - Xceptor. • Reporting deviations in site segregation reports of all markets across the four Global Service centres and analyze the trends in them to mitigate risk and errors. • Status wise segregation of Pending Payments on an hourly basis so that concerned departments. • Automation of Staff Productivity reports, overtime and leave tracking systems.

**Major Learning Outcomes :** This has helped me develop skills that deliver direct results statistically. This has encouraged strategical thinking directly improving efficiency and reducing manual errors.
This has developed in me an attitude that requires me to be alert, swift, detailed and deliver the best results within the due time, with the latest trends and technology that can be used to make systems more efficient.

### Name : Kush Kanwar

**Student Write-up**

**Short Summary of work done during PS-II :** Data Anaylsis, Transaction lifecycle

**Tool used (Development tools - H/w, S/w) :** Qlikview, Excel, PowerPoint

**Objectives of the project :** Efficient task management, diligent monitoring of transaction queue, creating real time dashboard

**Major Learning Outcomes :** Qlikview, Transaction lifecycle, payment processing

**Academic courses relevant to the project :** Fundamentals of Finance and Accounting

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## *PS-II Station: JPMC CIB Tech, Bangalore*

## Faculty

### Name : Y V K Ravi Kumar

## Student

### Name : Rohith Pervala (2015A7PS0095H)

**Student Write-up**

**Short Summary of work done during PS-II :** Fetch, parse and send the market performance stats reports to the kdb server and later provide analytics for the clients to work on.

**Tool used (Development tools - H/w, S/w) :** q/kdb+, java (apache.poi, Jsch, EWS), python3 scripting, YAML

**Objectives of the project :** Fetch, parse and send the market performance stats

reports to the kdb server and later provide analytics for the clients to work on.

**Major Learning Outcomes :** Ticker plants, Time Series, Market Products

**Brief Description of working environment, expectations from the company :** Very chilled environment. You are expected to finish your work before deadline.People are very friendly and helpful. They want us to be inquisitive and be able to learn from our mistakes.

**Academic courses relevant to the project :** Intro to computer programming, OS, OOP, DSA, DBA, Computer Networks, Software engineering

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## *PS-II Station: Knorr-Bremse Technology Center India, Pune*

## Faculty

### Name : Manoj Subhash Kakade

## Student

### Name : Harsh Nagda (2015A3PS0287H)

**Student Write-up**

**Short Summary of work done during PS-II :** Project 1: Developing a tool to remove private information form videos using deep learning and image processing. Project 2: Developing a tool to automate the process of test case evaluation on data generated after testing and simulations.

**Tool used (Development tools - H/w, S/w) :** Python, Keras, PyQt5, antlr4, OpenCV

**Objectives of the project :** Project 1: Blur out private info from videos. Project 2: automate test case evaluation process

**Major Learning Outcomes :** Practical application of image processing, deep

learning. Developing a GUI. Developing a industry level software. Better command on python.

**Brief Description of working environment, expectations from the company :** Good working environment. Do not expect something like a proper IT company as it is a Mechanical company at its core. High chances of PPO if you show decent working behavior but the CTC provided is very low.

**Academic courses relevant to the project :** Machine Learning, Deep Learning, Image Processing, DBMS

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# *PS-II Station: Kristal.AI*

## Faculty

### Name : Lucy J. Gudino

## Student

### Name : Anirudh Tandon (2015A4PS0304P)

**Student Write-up**

**Short Summary of work done during PS-II :** Android APP development, Data Scraping, ML Latent Dirichlet Allocation, AWS Rekognition were the projects taken up.

**Tool used (Development tools - H/w, S/w) :** Android Studio, JAVA IDE(Eclipse), Python(Jupyter)

**Objectives of the project :** Data Scraping of various Financial Documents and reports for Financial Analysis, Data categorisation using Latent Dirichlet Allocation, Video recognotion for different faces using AWS Rekognition

**Major Learning Outcomes :** Android Application Development was successfully learned and implemented.
Working of different Development and IT softwares like Jupyter, Eclipse,etc.
Knowledge of the Financial aspects of the company was also gained.

**Brief Description of working environment, expectations from the company :** The overall company interaction is very good. People are very friendly and ready to help. The projects assigned help you to gain knowledge of various fields.

**Academic courses relevant to the project :** OOP, OS, DSA

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## *PS-II Station: L&T Defence*

## Faculty

### Name : Prof. Raghuraman

## Student

### Name : Adarsh Salagame (2015A3PS0960H)

**Student Write-up**

**Short Summary of work done during PS-II :** Visualisation, simulation and control of robots

**Tool used (Development tools - H/w, S/w) :** ROS, OpenCV, OpenGL, Python, C++

**Objectives of the project :** Create visualisation and simulation for robot and control it using a graphical interface

**Major Learning Outcomes :** ROS, OpenCV, OpenGL, Image Processing

**Brief Description of working environment, expectations from the company :** Working environment is very good. Engineers are very friendly and helpful. Most of the time, we were left to ourselves to figure it out on our own, but could ask if we needed help. Company gave us a problem and let us figure out how we wanted to solve it. They expect diligent work and regular progress, but give us autonomy to find our own way and set our own targets. Very involved and hands on work, learn a lot from it.

**Academic courses relevant to the project :** Image Processing, Data Structures and Algorithms

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# *PS-II Station: Lowe's India*

## Faculty

### Name : Ms. Preeti NG

## Student

### Name : Tanmay Kakati (2015A8PS0401G)

**Student Write-up**

**Short Summary of work done during PS-II :** Done Python automation as the company is moving towards using only open source tools in order to cut cost. Used Hadoop and Teradata for various data pulling activities and analyses.

**Tool used (Development tools - H/w, S/w) :** Python, SQL, Teradata, Hadoop, Excel

**Objectives of the project :** Python Automation of Customer Health Scorecard

**Major Learning Outcomes :** Python, Big data platforms-Teradata and Hadoop, SQL, Regression

**Brief Description of working environment, expectations from the company :** Very supportive working environment, flexible working hours. Experts to help me out whenever stuck. Extensive training programs held periodically. Amazing food. Fun activities held from time to time. Football sessions on Friday.

**Academic courses relevant to the project :** Its specific to the company and wont fit into any of the courses in college.

### Name : Mayank G Jain (2015A8PS0449G)

**Student Write-up**

**Short Summary of work done during PS-II :** My work at Lowe's India was in the domain of retail data analytics. I was in the merchandising team that dealt with ad hoc and long term requests regarding a wide range of key performance indicators like sales, cost, margin, inventory etc: The analyses that we performed were fact based insights drawn from vast amounts of data, that helped business take key decisions. The projects I worked on were a part of the daily business issues and offered me great insights into the working of the company. I learned a lot of technical and business aspects, but most importantly I experienced firsthand the rigours of the corporate world and that was a great experience.

**Tool used (Development tools - H/w, S/w) :** Teradata/SQL, Python, M.S. Office, Hadoop, DARt

**Objectives of the project :** Providing viable business insights

**Major Learning Outcomes :** Technical skills, Retail knowledge, Corporate etiquette

**Brief Description of working environment, expectations from the company :** The work environment is great and there is a constant influx of interesting work. You have to be a little forthcoming in order to get work assigned. The teams are extremely helpful and there is a lot of inter and intra team interaction. The facilities are world class, and the office is a very nurturing environment.

**Academic courses relevant to the project :** Data Analytics, Machine Learning, RDBMS

## Name : Krushal Patel (2015A3PS0085P)

### Student Write-up

**Short Summary of work done during PS-II :** My work mainly dealt with analyzing data to find problems in website performance from a marketing perspective. Do the customers find it easy to navigate through the website? What are the main webpages leaking the most traffic? Which social media brings in the most revenue through Ads & Affiliates? The work is very exciting and you're never doing the same type of work.

**Tool used (Development tools - H/w, S/w) : Teradata**, SQL, Adobe Analytics, Advanced Excel

**Objectives of the project :** Website & Channel Optimization

**Major Learning Outcomes :** Aside from the technical skills mentioned above, what you learn the most is Character development. When you get responsibilities with real consequences, you learn how to tackle problems that arise how to approach those tasks, how to handle failure & how to treat success. These things, I feel are the most important learning from this internship.

**Brief Description of working environment, expectations from the company :** The work culture is really great. You are treated just like any other employee. You get the same kind of responsibilities & work. Your fellow colleagues are always there to help you whenever you're stuck. The managers & Mentors are always there to support you.

## Name : Jay Baldev (2015A4PS0408H)

### Student Write-up

**Short Summary of work done during PS-II :** I worked in Operations Analytics team at Lowe's. Most of my work was related to Store Operations and Supply Chain Analytics. My work included using Python, SQL and Hadoop. All of my projects were descriptive in nature and ranged from exploratory data analysis to making interactive dashboards.

**Tool used (Development tools - H/w, S/w) :** Python, Teradata SQL, Hadoop, Microstrategy VI, Excel etc. are some of the software that I used.

**Objectives of the project :** Objectives of my project was to help in improving store operations and supply chain by providing better planning and reporting tools.

**Major Learning Outcomes :** Technical Learning Outcomes - Python, SQL, Analytics, Dashboarding, Data Story Telling.
Non Technical Outcomes - Understanding Retail industry, Supply Chain, Logistics and Inbound, Corporate Etiquette, Team Work and Planning.

**Academic courses relevant to the project :** Supply Chain Management, Database Management Systems, Data Mining.

## Name : Adya Arora (2015A3PS0233G)

### Student Write-up

**Short Summary of work done during PS-II :** My learnings can be categorized into two parts:
1. Technical Aspect: I have learnt how to handle data and the use of platforms like

Teradata and Hadoop. I have also learnt how to use Python to alter and manipulate the data and give meaningful insights.
2. Business Aspect: I have learnt a great deal about Lowe's, its business models and strategies and the basics of retail in general.
As a member of the pricing team, and with the tariff wars between the US and china, I have seen firsthand the importance and the large impact that pricing has on the business.

**Tool used (Development tools - H/w, S/w) : Excel**, Tearadata, Hadoop, Python, MicroStrategy

**Objectives of the project :** Tariff Mitigation

**Major Learning Outcomes :** Retail, Pricing decisions and their impact, handling data and deriving meaningful insights

**Brief Description of working environment, expectations from the company :** DACI is great!
The work is very interesting and the people here are great, and with analytics being a relatively new field with a lot of buzz around it, and I couldn't have asked for a better place to start my journey!

**Academic courses relevant to the project :** Principles of Economics

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## *PS-II Station: MBRDI*

## Faculty

### Name : Mr. Srinivas Kota

## Student

### Name : Partha Saradhi G (2015A4PS0316H)

**Student Write-up**

**Short Summary of work done during PS-II :** My work was to develop a simulation model on STARCCM+ to simulate the cooling from seat-integrated ventilation system. There is some test data available using which the simulation

model needs to be validated. My entire work was focused on modifying the numerical parameters and studying how the cooling varies. I had suggested the necessary changes for the test setup based on this and tried improving the prediction of temperatures.

**Tool used (Development tools - H/w, S/w) :** STARCCM+, ANSA, Python, MATLAB

**Objectives of the project :** Simulating forced convection cooling in ventilated seats

**Major Learning Outcomes :** Tool knowledge, Working with huge simulation files (in my case), Formal presentations and documentation

**Brief Description of working environment, expectations from the company :** Work hours are flexible, mostly depending on your team. You'd be expected to work 9 hrs on an average everyday. There is food (free) and transport (minimal cost) available. There's plenty of resources (access to journal papers, etc) to learn whatever is necessary for your project. The work is only system-based and, there are no recreational activities at the office.

**Academic courses relevant to the project :** Heat Transfer, Fluid Mechanics, Computational Fluid Dynamics

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## *PS-II Station: Media iQ Digital, Bangalore*

## Faculty

### Name : Anjani Sreekanth Koka

## Student

### Name : Sahil Sharma (20140552)

**Student Write-up**

**Short Summary of work done during PS-II :** I worked as a campaign analyst. Most of the work is pretty basic and is done via SQl and Excel.

**Tool used (Development tools - H/w, S/w) :** SQL,Excel, Amazon Web Services.

**Objectives of the project :** Insight Requests

**Major Learning Outcomes :** Learned how to make good PPT's, using Excel and SQL. You also get all the knowledge of digital advertising.

**Brief Description of working environment, expectations from the company :** Work environment is pretty chill, you can expect a lot of outings. Work hours are flexible. Take this station if you want to get in Analytics.

### Name : Saransh Mohanty (2015A1PS0687P)

**Student Write-up**

**Short Summary of work done during PS-II :** The work revolved around the analysis field. Routine work included running SQL queries and extracting data, analysing it to gather insights and preparing a deck for the client. Project work included scoping into the field of automation and NLP

**Tool used (Development tools - H/w, S/w) :** Python,R,Tableau,SQL,Hadoop

**Objectives of the project :** Handle the Insights request and n gram analysis

**Major Learning Outcomes :** Major Insights to the Analytics sector and the field of Digital Marketing**.**

**Brief Description of working environment, expectations from the company :** Really good working environment. Most of the staff is from BITS and therefore it is easy to gel in. Work culture is positive and team encourages to take up new projects that align with the company objectives.

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## *PS-II Station: Mercedes Benz R&D India*

## Faculty

### Name : Dr. Srinivas Kota

# Student

## Name : Rishabh Maiti (2015ABPS0844P)

**Student Write-up**

**Short Summary of work done during PS-II :** Computer Aided Engineering, Finite Element Analysis, Finite Element Simulations

**Tool used (Development tools - H/w, S/w) :** LS-Dyna, LS-PrePost

**Objectives of the project :** Development of Advanced Simulation Tools

**Major Learning Outcomes :** Finite Element Method

**Brief Description of working environment, expectations from the company :** Work culture is very encouraging and motivating. It enables a person to obtain a new perspective on learning. It helps a person to develop an interest towards research.

**Academic courses relevant to the project :** Finite Element Method, Mechanics of Solid

## Name : J.Praveen (2015A4PS0333P)

**Student Write-up**

**Short Summary of work done during PS-II :** The project allotted to me was 'Numerical simulation of external surface convective heat losses from the engine'. The engine I worked upon was already tested in a test bed facility, and I was provided with the test bed data. In my project, I did 3-D CFD simulations for the convective heat losses from the engine for different engine load points and validated the same with the test bed data.
Also the dependency of engine surface heat transfer coefficients on different parameters was studied.

**Tool used (Development tools - H/w, S/w) :** STAR CCM+

**Objectives of the project :** To determine the convective heat losses from an IC engine via CFD simulations.

**Major Learning Outcomes :** CFD Principles, CFD tool, Dependency of heat transfer coefficients on different parameters.

**Brief Description of working environment, expectations from the company :** MBRDI provides a positive and constructive working environment. A task plan is provided to the student in the first week itself, hence the student is aware of the deadlines. Manager and mentors were very supportive and were open for suggestions. The team expects a strong knowledge in the area of project allotted from the student.
I also enjoyed participating in different extra-curricular events like sports meets, cultural fests and awareness programs.

**Academic courses relevant to the project :** Heat Transfer, CFD, Fluid Mechanics

## Name : Uday Gurupada Adiga (2014B1A40703G)

**Student Write-up**

**Short Summary of work done during PS-II :** Created a python based machine learning tool that can be used by most people. Using algorithms present in python modules, a metamodel can be created that is accurate enough to replace CAE simulation

**Tool used (Development tools - H/w, S/w) :** Python (scikit-learn, tkinter)

**Objectives of the project :** To create a GUI that can assist to create machine learning models for any dataset

**Major Learning Outcomes :** Python based GUI, Machine Learning algorithms

**Academic courses relevant to the project :** Computer Programming

## Name : Dinesh Guntur (2015A4PS0225H)

**Student Write-up**

**Tool used (Development tools - H/w, S/w) :** LS-Dyna , MS Excel

**Objectives of the project :** parametric analysis of femur bone in a 3-point bending test using fe simulations

**Major Learning Outcomes :** Meshing, LS-Dyna

## Name : SHREYAS ANIL BARAPATRE (2015A4PS0315G)

**Student Write-up**

**Short Summary of work done during PS-II :** I had to evaluate the performance of battery cooling plates using Nanofluids as a coolant via CFD simulations. Initially, I did literature survey and summarized property correlations for Nanofluids. Also, I had 1 week training for Star-CCM, which is the software for CFD simulations. I explored different multiphase models for Nanofluids and used them to evaluate thermal performance of battery cooling plates in Electric Vehicles.

**Tool used (Development tools - H/w, S/w) :** Star-CCM, MS Excel

**Objectives of the project :** Performance evaluation of Battery Cooling Plates using Nanofluids as a coolant

**Major Learning Outcomes :** Star-CCM, Multiphase and Turbulence modelling, Presentation skills

**Brief Description of working environment, expectations from the company :** Very friendly and helpful environment to work.

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## *PS-II Station: MiQ Digital Pvt. Lt, Bangalore*

## Faculty

### Name : Anjani Srikanth Koka

## Student

### Name : Gaurav Jain (2015A1PS0786P)

**Student Write-up**

**Short Summary of work done during PS-II :** Works on analysis and insight generation from the data and worked on creating automations to drive the redundant, worked on novel frameworks and in-house technology products and services for running digital advertisement campaigns.

**Tool used (Development tools - H/w, S/w) :** R, SQL Workbench, Hive, NLP Libraries in Python and R,

**Objectives of the project :** Optimization of the advertisment campaigns.

**Major Learning Outcomes :** Learnt about building machine learning models, Processing large datasets and different tools.

**Brief Description of working environment, expectations from the company :** Environment is very friendly for learning and testing out new ideas and proposals.

**Academic courses relevant to the project :** Machine Learning

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## *PS-II Station: MSCI*

## Faculty

### Name : Krishnamurthy Bindumadhavan

## Student

### Name : Shravanth Mandava (2014B3AA0691H)

**Student Write-up**

**Short Summary of work done during PS-II :** Simulation and Development of new Indexes especially FACTOR and ESG Indexes.

**Tool used (Development tools - H/w, S/w) :** Matlab, SQL

**Objectives of the project :** Providing Indexes to Clients as per their needs

**Major Learning Outcomes :** Passive Investment Strategies

**Brief Description of working environment, expectations from the company :** It is a pleasant place to work. Co-workers are happy to help always. Expectations are not that high and no intense pressure to perform. Managers want you to learn as much as possible during the internship and happy to see you contribute.

**Academic courses relevant to the project :** DRM, SAPM, FM

## Name : Kanish Kataria (2015A1PS0570P)

### Student Write-up

**Short Summary of work done during PS-II :** I was involved in several projects at varying levels. The work is focused on Index construction using some tools proprietary to the firm. I worked upon constructing modular assemblies for Index rebalancers, which are used to re-balance and reconstitute the index during annual, semiannual, quarterly index reviews. I was very frequently required to extract some data using MATLAB commands and SQL Database queries and analyse the results. I had to be thorough with Index Metrics and run IM Reports on the indexes available or constructed. Then, the analysis of IM Reports followed, which displays loads of information regarding the equity portfolio being managed through the index. There are multiple levels at which the Index construction and validation takes place. Apart from the index construction, I was involved in testing the newly devised RACs (Reusable API Components), used in the modular framework. RACs are the building blocks of a typical modular assembly and perform a multitude of operations on different data types. All these data types are used in portfolio synthesis and weighting. I implemented a few Index methodologies in the modular framework and verified the successful working of the rebalancers. Index customization is undertaken at different levels, to look for desired performance in terms of risk-return attribution, tracking error and turnover according to the client demands.

**Tool used (Development tools - H/w, S/w) :** MATLAB, Excel, SQL Database

**Objectives of the project :** NPD (New Product Development and Research)

**Major Learning Outcomes :** Technical Proficiency, working of Indexes and ETFs, rising trend in Passive Investing, Equity Portfolio Management, communication skills and professional ethics, better understanding of the corporate structure, exposure to the inside working of finance and investing

**Brief Description of working environment, expectations from the company :** MSCI has a very friendly and comfortable working environment, owing to
the welcoming attitude of the people working here. The people here are amazing, they helped me in every possible way to get started and blend in. They made it feel like home. The work life balance is good, the work hours are not harsh, it's very exciting to endure along. Everyday is a new day, one can expect a new task everyday, which breaks the monotony and makes the work all the more involving and exciting. I learnt a lot during my internship, while developing very good interpersonal relationships and equations with my colleagues, teammates,and senior management.

A cheerful atmosphere co-exists with an air of professionalism. It is a great place to make friends, enjoy during the outings and corporate parties and most importantly, become a part of the herd, which mutually benefits everyone in the long run. One can expect to learn a great deal and develop and grow in many different ways. On a professional front, MSCI boasts the reputation of being the biggest player in its industry, so that said, it adds up a lot on one's profile.

**Academic courses relevant to the project :** Security Analysis and Portfolio Management, Business and Asset Valuation, Financial Management

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# *PS-II Station: Multi Commodity Exchange of India Pvt Ltd, Mumbai*

## Faculty

### Name : Swarna Chaudhary

## Student

### Name : SHINDE PARAG RAJKUMAR (2015A8PS0513G)

**Student Write-up**

**Short Summary of work done during PS-II :** 1. Research & Development of the new delivery settlement system for the purpose of hedging from the preexisting cash-settled system. Identification of the new business prospects of the existing clients and the upcoming mining areas for development of the exchange run warehouses thereby reducing the transportation and inventory costs.

2. Not all the cotton related companies perform hedging activities on exchanges due to slightly more traditional performing of textile industry and a few misconceptions about markets. This project aims to show those companies how hedging will be beneficial for their finances.

**Tool used (Development tools - H/w, S/w) :** MS Excel, MS PowerPoint

**Objectives of the project :** 1. Form a database 2. Preparing a model showing hedging benefits

**Major Learning Outcomes :** 1. Way an exchange works 2. Hedging strategies 3. Fundamental Analysis of Financial Statements

**Academic courses relevant to the project :** 1. Fundamentals of Finance and Accounting 2. Financial Management 3. Derivatives and Risk Management

### Name : Sabhyata Shukla (2014B3A80591G)

**Student Write-up**

**Tool used (Development tools - H/w, S/w) :** MS Excel, Powerpoint

**Objectives of the project :** Research on the Metals Industry, Cotton textiles Industry, Develop new hedging strategies

**Major Learning Outcomes :** How to formulate hedging strategies as per the needs of the clients

**Academic courses relevant to the project :** Financial Management

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## *PS-II Station: munshiG Private Limited*

## Faculty

### Name : Raja Vadhana

## Student

### Name : Shrey Vijayvargiya (2015B1PS057G)

**Student Write-up**

**Short Summary of work done during PS-II :** Business development (4 months) and Technical work[Admin Panel(1 month)]

**Tool used (Development tools - H/w, S/w) :** Sublime,Excel,Python IDE,Github,Slack

**Objectives of the project :** Developing a Dashboard which articulates the company position and statistics in the market. Elucidate the overall development of the company. The business development encompass the pitching(Sales + Marketing) and management work.

**Major Learning Outcomes :** Management, Technical Skills,Time Management(Have worked in BD team and technical team abreastly for one month).

**Brief Description of working environment, expectations from the company :** Nice environment, have experienced the startup culture. I want to work on the technical side for at least 2 months to learn a bit more but unfortunately, it couldn't happen. Overall, my communication skill got improved, which instilled me with immense confidence. I loved the journey a lot, irrespective of the dynamic ups and lows we have faced in preceding 4 months.

## Name : PRAKHAR GANDHI (2015A8PS0456H)

### Student Write-up

**Short Summary of work done during PS-II :**
Made ML model , Machine Learning models initially uses data to make outcomes that doesn't meet the need , then slowly improves using various inputs that it has never seen before and become better overtime.

The advantage of this is even if the model is initially faulty , we can make it better overtime (by feeding it more outputs). And also we don't need to train the model again from scratch.

**Tool used (Development tools - H/w, S/w) :** Hardware: Virtual environment used for python on Ubuntu
Software: barcode studio,octoparse

**Objectives of the project :** To take the data related to barcodes and do analysis on it

**Major Learning Outcomes :** Contributing in making other changes to meet the expectations of people and push everyone beyond their current limit.
Doing database management using python (also , Using modules of JavaScript).

**Brief Description of working environment, expectations from the company :** we need to listen to other people's inputs by following CJM(Customer Journey map) and include our own instincts as well to make a choice.

**Academic courses relevant to the project :** Database systems

## *PS-II Station: Mytrah Energy*

### Faculty

**Name : Dr. Naga Vamsi Krishna Jasti**

### Student

**Name : AKSHAY SREEKUMAR (2015A4PS0371H)**

**Student Write-up**

**Short Summary of work done during PS-II :** Day to day activities included during area estimation,module layout using AutoCAD . Apart from that I have completed two projects one is static structural analysis of module mounting structures and second is solar irradiation estimation.

**Tool used (Development tools - H/w, S/w) :** AutoCAD,Creo, Fusion 360,

**Objectives of the project :** Analysis of Module mounting structures , solar irradiation estimation,and survey for estimating the capacity using Google Earth pro

**Major Learning Outcomes :** Learned a lot about bidding, procurement and execution of a solar rooftop project

**Academic courses relevant to the project :** MDD, mechanics of solids

## *PS-II Station: NAL Bangalore*

### Faculty

**Name : Mrs. Samata Mujumdar**

## Student

### Name : Ansh Thakur (2013B1A10234P)

**Student Write-up**

**Short Summary of work done during PS-II :** Most of the work involved simulation and modeling. An oxygen sensor design was to be simulated to optimize various parameters so as design a diffusion barrier, which can be placed on the sensor. Some designs for micro heaters were also optimized.

**Tool used (Development tools - H/w, S/w) :** Comsol

**Objectives of the project :** To design a micro heater and optimize the parameters for a diffusion barrier design

**Major Learning Outcomes :** Simulations and analysis

**Brief Description of working environment, expectations from the company :** The working environment is very good. One of the best PS-2 station for students who wants to work in R&D sector and learn how things work. The process of a task is a little slow because of the administrative shortcomings. But you can learn a lot while you are here for your PS-2.

**Academic courses relevant to the project :** CFD

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# *PS-II Station: National Aerospace Labs*

## Faculty

### Name : Samata Majumdar

## Student

### Name : Kavan Sheth

**Student Write-up**

**Tool used (Development tools - H/w, S/w) :** Physical Vapour Deposition, Magnetron Sputtering, SCOUT, Origin.

**Objectives of the project :** Developing a spectrally selective solar thermal absorptive coating

**Major Learning Outcomes : Hands** on experience with Sputtering and thin film deposition processes.

**Details of Papers/patents :** Working on writing a paper.

**Brief Description of working environment, expectations from the company :** Very friendly environment with all the required facilities for research.

**Academic courses relevant to the project :** Nanochemistry.

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## *PS-II Station: NATIONAL CHEMICAL LABORATORY-PUNE*

## Faculty

### Name : Santosh Khandgave

## Student

### Name : Ajay Gogineni

**Student Write-up**

**Short Summary of work done during PS-II :** Modelling and simulation of a biomass gasifier using ANSYS FLUENT and analyzing the output of the fluidized bed under controlled environment.

**Tool used (Development tools - H/w, S/w) :** ANSYS FLUENT

**Objectives of the project :** analyzing the output of the fluidized bed, i.e syn gas .

**Major Learning Outcomes :** Learning a new software which is used in many industries , understanding the working of fluidized bed reactor and using biomass for the production of syn gas

**Academic courses relevant to the project :** Thermodynamics , Heat Transfer,Mass transfer

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## *PS-II Station: National Council of Applied Economic Research, New Delhi*

## Faculty

### Name : Sandeep Kayastha

## Student

### Name : Dhiren Goyal (2014B3A80539)

**Student Write-up**

**Short Summary of work done during PS-II :** I got a chance to work on the project "Study of Gems and Jewellery Sector of India". We attempted to be an impartial observer of the policies implemented by government and how positive changes can be brought in the sector. It taught me the right frame of mind to approach policy analysis. My primary work was related to primary and secondary data collection, management and analysis.

**Tool used (Development tools - H/w, S/w) :** Excel

**Objectives of the project :** Map and measure the health of various clusters across Gems and Jewellery Sector in India.

**Major Learning Outcomes :** Learnt aspects of Gems and Jewellery Sector (across India and internationally), worked on improving excel skills and got a close insight of policy making process.

**Brief Description of working environment, expectations from the company :** Working hours are rigid, but the working conditions are lax. Good

colleagues. Some days involve lots of menial work like photocopying and scanning documents. You get to attend some amazing conferences and listen to world class speakers like former Chief Economic Adviser to GoI. The onus will be on you and it's up to you to extract the best out of NCAER.

**Academic courses relevant to the project :** Econometrics, Public Policy

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# *PS-II Station: National Entrepreneurship Network*

## Faculty

### Name : Anjani Srikanth Koka

## Student

### Name : Abhyuday Sharma (2015A2PS0557H)

**Student Write-up**

**Short Summary of work done during PS-II :** Data analysis and providing back-end support for operations of foundation based in South-East Asia.

**Tool used (Development tools - H/w, S/w) :** Excel, Qlikview

**Objectives of the project :** To provide back-end support to operations in South-east team.

**Major Learning Outcomes :** Data analysis for business decisions

**Brief Description of working environment, expectations from the company :** Fine.

### Name : Nithin Raj (2015A4PS0320P)

**Student Write-up**

**Short Summary of work done during PS-II :** The project work was a two-step process. The first one was to identify media outlets of any kind which would help the

organization have a wider a reach. The second project involved devising a PR strategy to engage and retain the audience who were reached thorough the first step.

**Tool used (Development tools - H/w, S/w) :** SimiliarWeb, Adobe Analytics, Excel, Google Analytics, Brand24

**Objectives of the project :** 1. Mapping of PR beats. 2. Analysis of PR trends

**Major Learning Outcomes :** Thorough understanding of the PR activities undertaken by various organisations and publications that be used to achieved maximum impact of these PR activities.

**Brief Description of working environment, expectations from the company :** The working atmosphere in the organisation is extremely good. There was constant support and guidance at each step from various team members. Even the members outside my team were willing to help out. The organisation expected us to understand the strategies adopted by them to publicise the service they provide and suggest changes which could make their marketing even more effective.

**Academic courses relevant to the project :** Digital Marketing, Marketing and Media

## Name : Tarun Baloda (2015A1PS0679P)

### Student Write-up

**Short Summary of work done during PS-II : I** was part of Global Impact and Partnership Team during my internship. I worked under Mr Austin Thomas and Ms. Ritu George. At national entrepreneurship network, there were different programs that organized different programs for e.g. GTI (Global Training Institute) who handled FDP (Faculty Development Program), VSU(Venture ScaleUp Unit) which was handled by different Regional Managers and NEN team which overlooked all the entrepreneurship programs run in different colleges across India. My role in my team was to conduct and also design surveys for all the students and faculties of GTI and NEN team which included quarterly or monthly surveys and perform data analytics using MS Excel for the data obtained and share with the teams regularly to tell them how the program was running and were students and faculties liking it or not and how they can improve it and other things. My work also included video editing for feedback videos from different startups or SMEs.

**Tool used (Development tools - H/w, S/w) :** MS-Excel, MS Power Point

**Objectives of the project :** Design and Implementation of Global Impact Surveys, Tracking on-going surveys and Data Consolidation and reporting to all ecosystem shareholders

**Major Learning Outcomes :** MS-Excel, MS-Powerpoint and Softskills

## Name : Ricky Sharma (2015A2PS0611P)

### Student Write-up

**Short Summary of work done during PS-II :** Majorly data handling and entry work in long term but first 2 months were completely based on learning of entrepreneurship concepts, meeting entrepreneurs, visiting incubators and accelarators and much more. Well, it all depends on which team you are assigned. I was assigned GTI Team which had major work of running an entrepreneurship program for faculties in different countries. Sometimes there's a lot of work but most of the times there is very lite to no work. So if you want to learn something other than entrepreneurship then I would not recommend this PS station. Most of the times the work given is not upto your potential and you feel like wasting time. Work like calling people to gather some information, Too much of copy paste in excel sheet, etc.

**Tool used (Development tools - H/w, S/w) :** MS Office, online sources.

**Objectives of the project :** Establishing key metrics for faculty development program

**Major Learning Outcomes :** Entrepreneurial mindset and knowledge

**Brief Description of working environment, expectations from the company :** People are good. Mostly there'll be almost no interaction with anyone other than your team.

**Academic courses relevant to the project :** Creating and Leading Entrepreneurial Organisation

## Name : Bhargavi Komanduri (2015A5PS0858H)

### Student Write-up

**Short Summary of work done during PS-II :** My project majorly included research work which aimed to discover the latest trends and tools in the field of digital marketing and content marketing so that I could suggest appropriate ones for the benefit of the organization. In order to be able to make suggestions in the field of digital marketing to the organization, I started acquainting myself with the digital marketing concepts and terminologies, studied the marketing strategies of various organizations in the non-profit sector along with the latest tools and software and how they can help the organization in particular.
Through the duration of this project, various trends in the field of content marketing

and the latest tools in the field of Digital Marketing were studied and the appropriate ones which could be incorporated into the organization were suggested. The foundation's Instagram page was also revived as a part of the project and suggestions were made to the foundation to enhance their reach through various tools on the platform.
An overall improvement in the field and knowledge of digital marketing has been obtained because of this project

**Tool used (Development tools - H/w, S/w) :** Google, Wordpress, Buffer

**Objectives of the project :** The objective behind this project is to study in a detailed manner about all the latest trends in the field of Digital Marketing and suggest as to how these latest developments can fit into and benefit the functioning of the marketing strategies currently being used by the National Entrepreneurship Network of Wadhwani Foundation.

**Major Learning Outcomes :** Introduction to the field of Digital Marketing & Content Marketing.

**Brief Description of working environment, expectations from the company :** The work environment in the organization was very friendly. Through our entire stay in this station, the people in my team and in the organization as a whole were very helpful and accommodating. I joined the organization with very minimal knowledge about the field of digital marketing and expected to be more in sync with the field by the time I left. With the help of this project, I have been able to acquaint myself with the latest trends and tools involved in the field of digital marketing and content marketing.

## Name : Gaurav Tewari (2015A2PS0608P)

### Student Write-up

**Short Summary of work done during PS-II :** Research work on startup ecosystems of Malaysia, Indonesia and Philippines to get an idea about the region Southeast Asia. Research work on startup ecosystems of Cambodia and Vietnam for the Foundation's expansion. Using Mailchimp and Wufoo Forms for registration of the E-leader workshops, and posting about the events on Facebook. Backend analysis of the weekly reports about the classroom programs that are being run in Indonesia and Philippines.

**Tool used (Development tools - H/w, S/w) :** Excel, Powerpoint, Word, MailChimp, Wufoo, Facebook

**Objectives of the project :** The major objective of this project is to conduct research on the entrepreneurial ecosystem and economic parameters of south east Asian countries to ensure fluid and efficient expansion of Wadhwani Foundation and

successful implementation of its initiatives. The main aim of the foundation is to promote and develop the start-up culture and instil knowledge as well as provide resources to budding entrepreneurs

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# *PS-II Station: NCAER*

## Faculty

### Name : Sandeep Kayastha

## Student

### Name : Anagh Gupta

**Student Write-up**

**Short Summary of work done during PS-II :** Mostly excel and content writing based work. Searching for data and collection of it was an important part.

**Tool used (Development tools - H/w, S/w) :** MS Excel, MS Word

**Objectives of the project :** To make profiles of all states and union territories of the country.

**Major Learning Outcomes :** How to write clear academic reports and present information in a researcher friendly way.

**Details of Papers/patents :** Tourist Satellite Account, District Driven Growth

**Brief Description of working environment, expectations from the company :** The working hours are 9:30 - 5:30. They are fixed and compulsory. 2 leaves are given per month. It is a professional work place but not much focus on a dress code. Nice, friendly seniors who are really helpful in solving problems in need.

**Academic courses relevant to the project :** Market Research, DRM, SAPM

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# *PS-II Station: NetSkope Software India Pvt. Ltd. , Bangalore*

## Faculty

### Name : H Viswanathan

## Student

### Name : Himangshu Baid

**Student Write-up**

**Short Summary of work done during PS-II :** I was initially tasked with reducing the volume of logging being done by the "Introspection, for SaaS apps" product of the company. It involved optimizing the logs and identifying the unnecessary or obsolete logs and removing them.

In the latter half of my PS 2, the task of improving the unit tests that already exist by removing dependencies and improving the coverage.

**Tool used (Development tools - H/w, S/w) :** Python, Celery, Kafka, Redis, MongoDB, Docker, Git

**Objectives of the project :** 1. Reduction of volume sent to logs. 2. Improvement of unit testing time.

**Major Learning Outcomes :** Python, Corporate environment

**Brief Description of working environment, expectations from the company :** The company has a very supportive working environment and all that it requires from employees is that they complete the amount of work they have committed to completing in the time required time frame.

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# *PS-II Station: Next Gen PMS(Goodera)- IT*

## Faculty

### Name : MJ Bagewadi

## Student

### Name : Harsh (2015A3PS0302H)

**Student Write-up**

**Short Summary of work done during PS-II :** You people would be required to make dashboards, based on React JS, Node JS, Html, Css, Javascript and mongo db. No Pre req is required to work here, but the work here is extremely hectic, there are actually no office timings, whenever there is work you will have to do it, irrespective of whether you want to work or not.
PPO chances are pretty decent, only if you go beyond your boundaries to work.
The CTC is around 12 lakhs
Don't just choose this PS because of high stipend, come here if you want to learn Web Development from stratch, but be prepared to work very hard

**Tool used (Development tools - H/w, S/w) :** React Js, Node JS,HTML, CSS, Javascipt, Bootstrap, Mongo DB

**Objectives of the project :** Making Digital Dashboards

**Major Learning Outcomes :** Leaning Web Development

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# *PS-II Station: NISTADS , Delhi*

## Faculty

### Name : S.P. Vimal Sir

## Student

### Name : Rohit Sohni (2015A7PS0135P)

**Student Write-up**

**Short Summary of work done during PS-II :** Research about food processing sector in India . Different types of issues in the sector and various interventions required. Also different initiatives taken by government.

**Tool used (Development tools - H/w, S/w) :** Statistical tools

**Objectives of the project :** Research about food processing sector in India .

**Major Learning Outcomes :** Learned about food processing sector in detail.

**Academic courses relevant to the project :** Techniques in social research

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## *PS-II Station: Nomura Global Finance*

## Faculty

### Name : B.V. Prasad

## Student

### Name : Shivam Khetan (2015A1PS0688P)

**Student Write-up**

**Tool used (Development tools - H/w, S/w) :** Excel

**Objectives of the project :** P&L production

**Major Learning Outcomes :** How to handle Profit and Loss Statements

### Name : Devansh Chaudhary

**Student Write-up**

**Short Summary of work done during PS-II :** I was involved in multiple projects and ad hoc tasks. With a view to broaden my knowledge and maintain the dynamic nature of my internship I wasn't allotted a lot of daily business activities which then

led to a lot of time for exploration. One major project was a productivity analysis dashboard on Power BI that gave desks an insight into their business. Another one was a portal which allowed effective communication between traders and concerned administrative authorities. My initial project involved the initiation of a documentation process in order to ensure that all the activities are being documented for any emergencies/requirements in the future.

**Tool used (Development tools - H/w, S/w) :** Sharepoint, Power BI, Excel, Powerpoint

**Objectives of the project :** There were multiple projects with objectives like gauging productivity to implementing workflows that improve communication.

**Major Learning Outcomes :** Knowledge of new tools. Handling pressure situations and working with strict deadlines.

**Brief Description of working environment, expectations from the company :** The work environment in my particular team, Business Management was fast paced and required a lot of dedication. Deadlines were strict and often work hours were long. Projects were allotted with high expectations. At the same time, the team was supportive and stuck together. The company is a good firm to work with in order to gain an understanding of markets and form deeper insights into the world of finance.

**Academic courses relevant to the project :** Fundamentals of Finance & Accounting, Derivatives & Risk Management, Securities Analysis & Portfolio Management

## Name : Pratik Bansal

### Student Write-up

**Short Summary of work done during PS-II :** The job profile was of an analyst revolving around building Macros and Automated Dashboards in Excel and Power BI. Also supported the completely automated Single Reporting Platform used by the firm for publishing and managing reports with the help of queries in SQL and templates in Microsoft Business Objects.

**Tool used (Development tools - H/w, S/w) :** S/w: Excel,VBA,Power BI,SQL,Python and Microsoft Business Objects

**Objectives of the project :** The project assigned to was to frame an Escalation system for governance and Signoff of Reports produced by the firm. Successfully implemented the system in Report Manager database by writing Python codes and generating stats on an adhoc basis regularly.

**Major Learning Outcomes :** Major learning was in terms of different tools that i got to learn by working on small term projects assigned to me. Work in general is not engaging as it involves daily BAU activities which can be done by anyone in the firm.

**Details of Papers/patents :** For Internal Distribution Only, hence strictly confidential.

**Brief Description of working environment, expectations from the company :** People are friendly and nice. Work environment is professional though a lot of internal politics is involved. Just for the payscale, the job is decent as it offers one of the highest packages for Analyst Profile but roles alloted to interns are not that enagaging and are often given the leftover manual work in the team.

**Academic courses relevant to the project :** FRAM

## Name : Shruti Narain (20140650)

**Student Write-up**

**Short Summary of work done during PS-II :** Work involved pricing Equity linked Structured Products that cater to clients' risk appetite and payoff they seek.Handle daily pricing requests and support the Sales and trading desks in the Asia excluding Japan region. Handle legal work like termsheet preparations needed for trade execution.

**Tool used (Development tools - H/w, S/w) :** Proprietary Software, Excel, VBA

**Objectives of the project :** Pricing and analyzing risk associated with Structured Products

**Major Learning Outcomes :** A.Clear understanding of the markets and how they affect the type of products offered.B.Get an idea of making pitch-books for clients C.Understand the charges levied on account of the risk borne by the company when offering the products and impact on PV

**Brief Description of working environment, expectations from the company :** A friendly work culture that accommodates for a holistic learning experience

**Academic courses relevant to the project :** DRM,SAPM,Financial Engineering

## Name : Palak Oswal (2015A1PS0657H)

**Student Write-up**

**Tool used (Development tools - H/w, S/w) :** Power BI, Python

**Objectives of the project :** Automation, reporting, structuring, and daily business operations

**Major Learning Outcomes :** An in depth understanding of practical aspects of how IB back offices work. Introduction into softwares like Tableau, Power BI etc.

**Brief Description of working environment, expectations from the company :** The working environment is very formal and business oriented, and people tend to have high expectations from bitsians. The work is more of an IT nature than finance, yet they require you to have a good understanding of both the sectors. A good grasp on VBA, Python etc will help in adjusting to the company needs quickly. An idea of more advanced topics like ML and AI will be a great plus.

**Academic courses relevant to the project :** Some courses would be FRAM, FoFa, SALAM, DRM

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## *PS-II Station: Novartis Healthcare pvt ltd*

### Faculty

**Name : R. Bharathi**

### Student

**Name : Sajal Bansal (2014B1A10657H)**

**Student Write-up**

**Short Summary of work done during PS-II :** we were given a project which was related to modeling out different investment scenarios for an end stage drug which defines different strategies for company on how to proceed forward. It also involved finding out an analogue product to predict sales and volume trend for the same drug in coming years based on the analogue.

**Tool used (Development tools - H/w, S/w) :** MS Excel, Alteryx

**Objectives of the project :** Cost cutting in org, modeling different investment scenarios

**Major Learning Outcomes :** Pharmaceutical sector knowledge, MS excel, Different marketing strategies

**Brief Description of working environment, expectations from the company :** Working environment is pretty lenient and let you learn on your pace. team is also very friendly but you might find a issue in fitting in as Brand insight team is made up of people who have been in industry for more than 4-5 years.

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## *PS-II Station: Nucleus Software*

## Faculty

### Name : Ritu Arora

## Student

### Name : Paras Gupta (2015A1PS0502P)

**Student Write-up**

**Short Summary of work done during PS-II :** I added new features on mobile wallet app PaySe

**Tool used (Development tools - H/w, S/w) :** Android

**Objectives of the project :** To add new features in an existing android application

**Major Learning Outcomes :** Android Development

### Name : Saurav Raj (2015B2A80905G)

**Student Write-up**

**Short Summary of work done during PS-II :** So I used a web application to show the proof of concept of the notion that we can detect fraud using mouse clicks made by user on a webpage.

**Tool used (Development tools - H/w, S/w) :** H/w: 16GB PC
S/w: Eclipse, Spyder

**Objectives of the project :** Fraud detection using mouse clicks made by user on a Web page

**Major Learning Outcomes :** Learnt about how to use JAVA and Python languages. How to build a webpage. Then, I came to know about different types of neural networks that can be used, specifically the LSTM networks.

**Brief Description of working environment, expectations from the company :** Working environment was awesome. Everyone in my team was really helpful and always ready to help.

**Academic courses relevant to the project :** Machine Learning.
Neural Networks and Fuzzy Logic

## Name : Harshit Garg (2014A3PS0257G)

### Student Write-up

**Short Summary of work done during PS-II :** I worked with the Lending Analytics Department of Nucleus Software, where I built a neural network model to forecast time series collection data for next months.
Throughout my internship I worked in Java, used DL4J library to add functionalities to my model. From a large sequential dataset, a part of it is passed to train the model and other to test it. Assuming 22 working days in a month, when we pass 22 examples in the model then it will predict dataset for 23rd day.
The project is divided into four parts:-
1. Building a model with appropriate hidden layers and activation functions.
2. Creating a Data Set Iterator file in java to process the input data.
3. Creating a plot utility function to plot the graph between actual and predicted value.
4. Creating the Prediction file which will run with above files.

**Tool used (Development tools - H/w, S/w) : Java**, DL4J library, LSTM & RNN models, Apache Maven, Tomcat

**Objectives of the project :** To build a neural model for time series forecasting of collection data

**Major Learning Outcomes :** Learnt useful deep learning applications in the corporate world. Built a neural model to forecast the time series data of collection department for next months. Had deep insight to build neural networks for artificial intelligence to achieve automation.

**Brief Description of working environment, expectations from the company :** Working hours are flexible in Nucleus Software. We were supposed to work for 9 hours a day. My supervisors were very helpful. I learnt a lot from my team members. Every week review meetings were held with senior mentors to assess our progress.

**Academic courses relevant to the project :** BITS F312, Neural Networks and Fuzzy Logic

## Name : ALWALA CHANDAN (2015AAPS0234H)

**Student Write-up**

**Short Summary of work done during PS-II :** Upgraded company's lending framework which is built on Spring MVC. Provided a new solution for storage of access logs of application.

**Tool used (Development tools - H/w, S/w) :** Spring Framework, Hibernate, Oracle SQL

**Objectives of the project :** Reactive programming support for the product

**Major Learning Outcomes :** Able to code in Spring, working with Oracle SQL

**Brief Description of working environment, expectations from the company :** Very good work culture but work should be finished within deadline.

**Academic courses relevant to the project :** DBMS, OOP

## Name : Kamanuru Mohith (2015AAPS0261H)

**Student Write-up**

**Short Summary of work done during PS-II :** I have made a tool to auto detect and auto correct the issues in the code thereby improving the quality and performance of the code.

**Tool used (Development tools - H/w, S/w) :** Java

**Objectives of the project :** To auto detect and correct the issues in the source code thereby improving the quality and performance of the code.

**Major Learning Outcomes :** Java, Debugging ,Eclipse plugin , Eclipse platform usage, Linux commands

**Academic courses relevant to the project :** OOPS-Java

## Name : Saurav Raj (2014B2A80905G)

**Student Write-up**

**Short Summary of work done during PS-II :** My project was basically to detect fraud using mouse clicks made by user on a web page. For that initially I made a web page and linked that to JAVA which was further linked to Python where a model was trained to predict whether the click was by a genuine user or not. After testing it on a single web page, I also tested it on a dummy web application.

**Tool used (Development tools - H/w, S/w) :** Eclipse, Spring boot framework, Maven, Spyder, REST API

**Objectives of the project :** Detect fraud using mouse clicks made by user on a web page.

**Major Learning Outcomes :** I learnt how to make web pages and applications, how to apply machine learning and deep learning.

**Brief Description of working environment, expectations from the company :** Working environment was good. Mentors and co- mentors were really helpful and guided along the right path. Nucleus Software really provides a good training for beginners.

**Academic courses relevant to the project :** Machine Learning, Neural Networks and Fuzzy logic .

## Name : Aditya Malhotra (2015A8PS0460G)

**Student Write-up**

**Short Summary of work done during PS-II :** Worked on UI Designing, Machine Learning, Full Stack Web Development

**Tool used (Development tools - H/w, S/w) :** Neural Networks

**Objectives of the project :** Implement Face Recognition and Sentiment Analysis

**Major Learning Outcomes :** Presenting your work and of course the technologies

**Academic courses relevant to the project :** Any course on Artificial Intelligence.

## Name : Deepesh Sharma (2015A3PS0218P)

### Student Write-up

**Short Summary of work done during PS-II :** I worked upon developing a real-time log analysis tool using Elastic Stack. The company is completely product-based, and thus the logs generated for each of it's products become crucial for the development and production teams.
I worked on processing the raw logs produced for each product and converting that to Structured Data format, so that it can be aggregated to draw real-time analysis.
The Analytics Engine Elasticsearch was used as the Back end search engine for the project.
Further I brought in a real-time alerting system to the Analysis Dashboards.

**Tool used (Development tools - H/w, S/w) :** Elastic Stack 6.0, Red Hat Linux System, Java 8

**Objectives of the project :** Development of a Robust Real-Time Log Analysis and Diagnostic Tool for product-based logs of the Organization.

**Major Learning Outcomes :** Developed Advanced Java Skills. Learnt the basics of working on a RedHat Linux System.
Learnt Intermediate-level Bash Scrpting.
Worked as a Elastic Stack Developer, and learnt about Big Data Handling and processing.

**Brief Description of working environment, expectations from the company :** The Work Culture of the Company is excellent in terms of the kind of assistance we get from the teammates and other colleagues. The company is adapting to the prevalent technology stack in the market, and that provides you an ample opportunity to develop your skills from scratch.
The biggest advantage is that you directly get to work in the R&D division of a company that is completely product-based.

**Academic courses relevant to the project :** OOP, OS, DBMS, DSA, CP

# *PS-II Station: NUTANIX BANGALORE*

## Faculty

### Name : Chandra Shekar RK

## Student

### Name : AMAN CHHAJED (2014B4A70608G)

**Student Write-up**

**Short Summary of work done during PS-II : 1**. Ran 2 benchmarks to evaluate the performance of different RPCs. First benchmark for used to evaluate the CRUD(Create, Read, Update, Delete) RPCs. The second was use to evaluate the performance of frequently fired queries to IDF
2. Manual testing and automation of different features which are added. Over the period of 5 months, wrote around 260 tests and filed 18 bugs found while testing.
3. Creating an end-to-end documentation for IDF along with a try me editor where IDF users can try the RPCs in real time.

**Tool used (Development tools - H/w, S/w) :** C++, Python, HTML5. Javascript CSS

**Objectives of the project :** Wrting tests, Running benchmarks, Creating an online editor

**Major Learning Outcomes :** Writing clean and efficient python code. Creating an hosting a multithreaded online editor.

**Brief Description of working environment, expectations from the company :** The environment is very encouraging to learn different concepts. The team members are very patient, helpful and supportive and cleared every doubts that I had while working on different projects.

**Academic courses relevant to the project :** Object Oriented Programming, Computer Programming, Software Engineering.

### Name : Dhruv Jogi (2015A7PS0024G)

**Student Write-up**

**Tool used (Development tools - H/w, S/w) :** Python

**Objectives of the project :** Better dynamic placement of VMs

**Major Learning Outcomes :** Cloud computing, Git, Linux

**Academic courses relevant to the project :** Machine Learning, Operating Systems

### Name : Abhishek Nelaabh Ghosh (2014B2A70899H)

**Student Write-up**

**Short Summary of work done during PS-II :** Developed upgrade module for one of the components of Nutanix known as NCC for both on-prem clusters and cloud enterprise clusters known as Xi-clusters. Also did the testing of the upgrade code written for both happy and sad part. It was a great learning experience in terms of development as a corporate employee and how to approach a problem in the corporate field.

**Tool used (Development tools - H/w, S/w) :** Python, JSON, Shell Script, YAML

**Objectives of the project :** To develop upgrade module for NCC, one of the key components of Nutanix

**Major Learning Outcomes :** Learnt about the usefulness of parallel threads and how they save much more time in the real world. And how OOPS help different packages to interact with one another to achieve a goal.

**Academic courses relevant to the project :** OOPS, OS

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## *PS-II Station: Nvidia Graphics - Hardware, Bangalore*

## Mentor

### Name: Piyush Khanwalkar

**Designation:** ASIC Manager CPU

**Comments:** outstanding student characteristics, what do they look for in interns

# Faculty

## Name : Brajabandhu Mishra

# Student

## Name : AMARTYA SHARMA (2014B2A30597G)

### Student Write-up

**Short Summary of work done during PS-II :** Worked on Control Backbone Safety Verification. Carried out error injection tests in various cluster fabrics by coding the error injection sequence which used information from System Verilog objects generated via Perl script which parsed the data from yaml format file, in accordance with the syntactical rules of System Verilog. The System Verilog objects were generated in a pre-determined format in order for the sequence to easily access the required information from the object via class handles. The working error injection sequence and Perl script were then scaled to various cluster fabrics and passed. Used Perforce commands for management of various versions of codes in and out of web repository.

**Tool used (Development tools - H/w, S/w) :** System Verilog, Perl, UVM

**Objectives of the project :** Successful passing of error injection tests as part of safety in Control backbone and other cluster fabrics.

**Major Learning Outcomes :** Enhanced Debugging skills, Increased proficiency in System Verilog and Perl, Exposure to Chip architecture and Usage of Perforce.

**Brief Description of working environment, expectations from the company :** Nvidia has a very conducive working environment. My mentor and team members were extremely helpful and always clarified all my doubts which helped resolve the issues being faced. The workload is a bit hectic but that is expected as the work at Nvidia is mostly on live projects. Work timings are flexible and games such as Foosball and Table Tennis are available for recreation. The interactions with the team were also very regular, it kept me updated about other team members' work and also helped in getting constructive feedback about my work progress. Overall,

the internship at Nvidia was a very good learning and an enriching experience.

**Academic courses relevant to the project :** Digital Design and Computer Architecture

## Name : Madhu Adav M J (2014A3A70217G)

### Student Write-up

**Short Summary of work done during PS-II :** In Nvidia I worked as a member of the SoC performance verification team. As we know memory is a limited resource. When running automotive usecases with multiple units running in parallel we need to ensure that the interconnect networks are fair and the bandwidth requirements for the different units are met. This ensures that the usecase meets the real time requirements. The work mainly involves running different automotive usecases to ensure that above requirements are met. In addition to this various memory subsystem knobs are changed and various background traffic configurations are simulated to identify potential problems in performance and to find optimal knob settings. After this data is generated, it is necessary to make scripts to identify and visualize trends and key data points.

**Tool used (Development tools - H/w, S/w) :** Perl, Python, C++, Shell Programming, Pandas

**Objectives of the project :** Verifying the IP bandwidth requirements and impact on memory subsystem by running various usecase pipelines. Also analyzing performance and drawing conclusions for various Memory subsystem knobs and simulating background traffic with different configurations

**Major Learning Outcomes :** Acquired professional proficiency in perl scripting, Python, C++ and shell programming. Also got experience in professional environment. Learned a great deal about a realistic memory subsystem and its components**.**

**Brief Description of working environment, expectations from the company :** At Nvidia freedom is provided to complete your work but you are expected to complete the tasks within assigned deadlines. You are also expected to communicate with other team members in case of any delays or unexpected circumstances. Other team members are helpful in guiding and teaching you. You also have multiple opportunities to communicate with different teams. These factors make Nvidia a great place to work at.

**Academic courses relevant to the project :** Programming in C, Object Oriented Programming, Computer Architecture, Operating Systems

## Name : Himabindu Kondamudi (2015AAPS0249H)

**Student Write-up**

**Short Summary of work done during PS-II :** My work is on PCIe protocol, a widely used I/O protocol in the industry. PCIe follows a layered model for data transfer. My area of interest is in Physical Layer of PCIe, mainly on the byte striping/unstriping logic done in physical layer.

**Tool used (Development tools - H/w, S/w) :** Jasper, Verdi

**Objectives of the project :** PCIe aims to ensure data transfer between two link patners at high speeds and with error detecting/reporting mechanisms.

**Major Learning Outcomes :** Perl, Verilog, PCIe protocol

**Brief Description of working environment, expectations from the company :** Nvidia has a very good working environment, my team has always been approachable when ever I was stuck at something.

**Academic courses relevant to the project :** Communication Networks

## Name : Pranav Mohan (2015A8PS0470H)

**Student Write-up**

**Short Summary of work done during PS-II :** Functional Verification of Memory Subsystem Hub using SystemVerilog and UVM concepts. Modifying testbenches to detect bugs in RTL and fixing the bugs detected in the process.
Perl Scripting was also used to improve the workflows present in the organisation.

**Tool used (Development tools - H/w, S/w) :** SystemVerilog, UVM, Perl, Verdi

**Objectives of the project :** Performing Functional Verification on the Memory Subsystem Hub of the chip to detect and fix any bugs that are be present

**Major Learning Outcomes :** Concepts of Functional Verification and Perl scripting

**Brief Description of working environment, expectations from the company :** Working culture is great and all colleagues are approachable. Hierarchy is very horizontal and employees are always welcoming and helpful

**Academic courses relevant to the project : Analog** and Digital VLSI,

Computer Architecture, Operating Systems

## Name : G. SRI SAI SUSMITHA (2015AAPS0183H)

**Student Write-up**

**Short Summary of work done during PS-II :** Entire work was based on development of testbench for the xHCI controller. The team started to move towards a UVM based testbench from VMM. Specific tasks allotted were related to commands and transfers done to USB high/full/low speed devices.

**Tool used (Development tools - H/w, S/w) :** System verilog, UVM, Verdi, Git

**Objectives of the project :** To develop a UVM based testbench for xHCI controller

**Major Learning Outcomes :** Verification, System Verilog, UVM, xHCI, USB

**Academic courses relevant to the project :** Object Oriented Programming, Digital Design

## Name : Neeraj Surawar (2015A8PS0400P)

**Student Write-up**

**Tool used (Development tools - H/w, S/w) :** C++, Perl, Shell

**Objectives of the project :** Performance modelling of SMMU and Integration

**Major Learning Outcomes :** Understanding Memory Architectures and learning Design techniques.

**Academic courses relevant to the project :** Computer Architecture, Object Oriented Programming

## Name : Varanya Prakash (2014B2A30960G)

**Student Write-up**

**Short Summary of work done during PS-II :** The work involved post silicon validation of GPU PCIe, this involved validating that the GPU is ready for mass production by running tests using internal tools to identify issues and resolve issues

using knowledge of PCIe and the computer system .

**Tool used (Development tools - H/w, S/w) :** perl and linux

**Objectives of the project :** Functional validation of GPU PCIe

**Major Learning Outcomes :** Learned PCIe protcol in detail and saw how it is working actually in a system

**Brief Description of working environment, expectations from the company :** The work environment is very good here, everyone is very helpful.

**Academic courses relevant to the project :** Data Communication and Networks, Microprocessor Programming and Interfacing and Computer Architecture

## Name : Yashwardhan Singh (2014B5AA0759H)

**Student Write-up**

**Short Summary of work done during PS-II :** My work at Nvidia was to carry out the memory qualification and validation of GDDR6 memory on different memory systems. This falls under the post silicon domain and is the penultimate step before productization. Memory qualification is done to finalize the memory settings and achieve the required targets. Parameters such as AC timings, read write training , drive strength , termination etc are tested and verified through various Nvidia implementations.

**Tool used (Development tools - H/w, S/w) :** Linux, Perl Scripting , Shell Scripting

**Objectives of the project :** To carry out the memory qual and debug

**Major Learning Outcomes :** In depth understanding of the architecture of the DRAM and GPU. Perl scripting, Linux , understanding timing characteristics of the DRAM and GPU.

**Academic courses relevant to the project :** Computer Architecture, Analog and Digital VLSI Design, Digital Signal Processing, Operating Systems.

## Name : Nitish Kulshrestha (2015A8PS0275G)

**Student Write-up**

**Short Summary of work done during PS-II :** The work was focused on

improving the efficiency of the functional model, a large-scale behavioral simulation of the GPU which is written in C/C++. It was achieved for various GPU units by using techniques in: Advanced C/C++ (pre-compiled headers, explicit template instantiation), Compilers (GCC), UNIX and Perl Scripting.

**Tool used (Development tools - H/w, S/w) :** C/C++, GCC, UNIX, Perl

**Objectives of the project :** Decreasing the build time of various units within the GPU functional model

**Major Learning Outcomes :** Learning industry-level programming and verification

**Brief Description of working environment, expectations from the company :** The environment was very conducive to productivity. I was thoroughly mentored about how to do things and given important work that would add value to the company.

**Academic courses relevant to the project :** Computer Architecture, Compilers.

## Name : SAGAR TRIPATHI (2015A3PS0294H)

**Student Write-up**

**Short Summary of work done during PS-II :** Bringing the Hopper SOC top level together which included integrating IP's in Hopper SOC as well as building RTL for Hopper SOC. Other aspects of the project include generating the health of the top level as well as removing dangling pins to ensure the top level is in good health.

**Tool used (Development tools - H/w, S/w) :** NVIDIA internal tools

**Objectives of the project :** HOPPER SOC Integration

**Major Learning Outcomes :** SOC Integration, proficiency in perl scripting, System on a chip design

**Brief Description of working environment, expectations from the company :** Excellent working environment facilitating holistic growth of a person.

**Academic courses relevant to the project :** Digital Design, Microprocessors and Interfacing

## Name : Ankita Aggarwal (2015AAPS0192H)

**Student Write-up**

**Short Summary of work done during PS-II :** I was a part of the CPU verification team. The work was based on ARM architecture and revolved around testing and verifying the software compliance.

**Tool used (Development tools - H/w, S/w) :** Scripting in Shell and Python, Perforce

**Objectives of the project :** Objective of the project was to get code coverage percentages up and automate the task of testing.

**Major Learning Outcomes :** Learnt scripting, working on a software tree, using perforce and ARM architecture.

**Brief Description of working environment, expectations from the company :** The working environment is very amiable and comfortable. The deadlines are not strict and you're allowed to work at your pace. Ample help is available for whenever you're stuck somewhere and people are really friendly. There are frequent outings and the entire internship process at Nvidia is very well handled.

**Academic courses relevant to the project :** Computer Architecture, FPGA

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## *PS-II Station: Nvidia Graphics – Software, Bangalore*

## Faculty

### Name : Brajabandhu Mishra

## Student

### Name : Abhilash Kolluri (2014B5AA0765H)

**Student Write-up**

**Short Summary of work done during PS-II :** I have written bash shell scripts to automate and catch regressions in existing NvMedia test-app.These scripts would sync,build and flash the Tree daily and run different test-apps.Developed a RAW consumer test-app for single process,cross-process,cross-partition.Surface Re-factoring for jpeg,display,vpi,dla,pvi modules.Various bug fixes in EGLStream and Surface.

**Tool used (Development tools - H/w, S/w) :** Git,GDB

**Objectives of the project :** VALIDATION/FEATURE ENHANCEMENTS OF EGL-STREAM AND SURFACE RE-FACTORING

**Major Learning Outcomes :** Shell Scripting,C,OS,EGLStreams

**Academic courses relevant to the project :** C-Programming,Operating Sytems

## Name : Shubham Malpani (2014B2A80778H)

**Student Write-up**

**Short Summary of work done during PS-II :** Initial phase of the project involved building yocto based image on ubuntu:18.04 using docker container and also optimization of libraries and binaries of NVIDIA for this build. Later, part after Mid-Semester involved updating Qt framework, modifying build output in GVS sanity from ubuntu to yocto and taking up initial source code structure analysis of a NVIDIA QNX system-software component identified for PLC coverage.

**Tool used (Development tools - H/w, S/w) :** Yocto, Docker, Git, Perforce, Source-trail, C, OS

**Objectives of the project :** Objective of the project was to get familiarized with various tools like docker, perforce, git, Source-trail and Yocto. and to work on optimizing binary directory of NVIDIA's repository which are parsed to yocto build system through recipes and also to analyze the source code of safety critical QNX BSP safety component identitfied for NVIDIA's PLC (Product Life Cycle) coverage.

**Major Learning Outcomes :** Learnt about the Yocto's build process, Linux Shell scripting and also understanding embedded C programs and debugging them.

**Brief Description of working environment, expectations from the company :** The working environment is flexible and friendly, so we can work at our on time as long as we meet deadlines. The company expects dedication towards working, retrospecting and improving ourselves, handling priority work when required.

**Academic courses relevant to the project :** Embedded Systems, Operating System, OOPS, C Programming

## Name : Shikhar Shiromani

**Student Write-up**

**Short Summary of work done during PS-II :** Worked on development of a fully automated test software framework for AUTOSAR based MCU on Nvidia's DRIVE Development Platform.
Also built a continuous integration (CI) infrastructure for the same using Jenkins. Work majorly involved writing test cases and algorithms for testing the basic functionalities of the MCU. It also involved scripting in various languages for automating the process.

**Tool used (Development tools - H/w, S/w) :** Nvidia's DRIVE Platform , CANoe , CAPL Scripting , Python Scripting , C Programming , Git , Perforce , Nvidia specific tools

**Objectives of the project :** To develop a fully automated test system for AUTOSAR based MCU

**Major Learning Outcomes :** Learnt about AUTOSAR Architecture , Jenkins , Python Scripting , CAPL Scripting , Debuggers

**Details of Papers/patents :** Submitted the project abstract for NTech India Conference 2018

**Brief Description of working environment, expectations from the company :** NVIDIA has a very supportive working environment wherein everyone has been very helpful whenever I approached them. We , as interns , were treated no differently than full time employees in terms of work as well as the way in which the team proceeds. I extremely enjoyed working on the project that was assigned to me. I learnt a lot during the course of the internship both on the software and hardware fronts. Also got to know about the software development process and life cycle here. It is an amazing place to learn and start your career as the projects are challengine but at the same time there is no spoonfeeding.

**Academic courses relevant to the project :** C Programming , Operating Systems , DSA

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## *PS-II Station: Nvidia Graphics - Software Systems, Pune*

## Faculty

### Name : Vijayalakshmi Anand

# Student

## Name : Yogesh Khemka (2014B5A30774H)

### Student Write-up

**Short Summary of work done during PS-II :** 1)Added options of video effects such as slow motion/ time lapse to GFE Gallery. User can choose the video segment they want to have the effects on before uploading it to online forums
2)Designed a fully convolutional neural network model for game event/highlights detections such as kill feed for few of the games. This model has a very good inference speed and accuracy.

**Tool used (Development tools - H/w, S/w) :** Tensorflow object detection API, Keras, Visual Studio, Media Foundation, Python, cmake

**Objectives of the project :** To automate the detection and saving of highlights from Nvidia's GFE in-game overlay.

**Major Learning Outcomes :** Video encoding, Object detection models, video muxing, CNNS

**Brief Description of working environment, expectations from the company :** Got a really great team. Everyone pointed out to right direction whenever I asked for help. All the facilities are top-notch. Offer chances depends on position availability in the team. Team allotment is based on Bio-data filled in psms website. Got to work on 2 major projects are few minor ones. Nvidia Pune is one of the biggest software development center of Nvidia outside Santa Clara. So, teams generally work on crucial projects to company.

**Academic courses relevant to the project :** Machine Learning, Digital Image Processing, Data structures and Algorithms, Object Oriented Programming

## Name : Saylee Kanadje (2014B3A30772P)

### Student Write-up

**Short Summary of work done during PS-II :** Automated the retrieval of profiling status for Game Ready Drivers. I was continuing the work begun by a previous intern so the backend infrastructure did not have to created from scratch, it had to be validated and fine-tuned. I created a UI that allowed the user to query the local database through API calls and SOAP requests. As my second project, I implemented a parser that would compare two logs obtained from different frame

capture analysis tools and calulate a test statistic to establish the extent of similarity between them. This parser was deployed in automation for regression testing.

**Tool used (Development tools - H/w, S/w) :** Python, JavaScript, AJAX

**Objectives of the project :** To reduce manual overhead by keeping profile bugs up-to-date for a particular title; To ascertain how closely the distributions of flip times obtained from two different frame capture tools resemble each other

**Major Learning Outcomes :** Exposure to UI development and gained familiarity with Python

**Academic courses relevant to the project :** None of the available courses were directly applicable to my first project since they do not focus on frontend frameworks. Basic knowledge of statistics was helpful in the second project.

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## *PS-II Station: Nvidia Graphics-Software , Hyderabad*

## Faculty

### Name : Mr. Vinay Belde

## Student

### Name : Karan Mantri (2015A3PS0141G)

**Student Write-up**

**Short Summary of work done during PS-II :** Worked with the kernel team for upgrading storage device drivers. Adding test script for checking performance regressions targeted to eMMC module. Solving UFS driver feature and functionality bugs.

**Tool used (Development tools - H/w, S/w) :** Git, flashing boards, coverity, gcov, Kasan etc

**Objectives of the project :** Adding test to sanity targeted to benchmark storage performances.

**Major Learning Outcomes :** 1. Insight into development workflow for Nvidia products.
2. Learning about device drivers,kernel, operating systems etc.
3. Understanding of hardware-software interaction of embedded product line of Nvidia.

**Brief Description of working environment, expectations from the company :** Work environment is good, employees are cooperative and helpful. Innovation is encouraged and supported. Interns are expected to know basics of C programming, object oriented programming and operating systems. Rest of all is learned while working. I would encourage everyone to be in constant communication with your manager/ mentor to make the most out of your internship. Don't miss this opportunity to get your perceptions correct from the best people in the industry.

**Academic courses relevant to the project :** C programming, Operating systems, Computer architecture, OOP

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## *PS-II Station: Nvidia Graphics, Pune*

## Faculty

### Name : Mrs. Vijayalakshmi Anand

## Student

### Name : Pranay Singh Baghel (2015A3PS0219P)

**Student Write-up**

**Short Summary of work done during PS-II :** Nvidia has been working on GeForce Experience, an app designed for optimising the gaming experience for gamers worldwide using Nvidia GPUs. I was in the developer team. I worked on various features of the app, most important being gamestream. The gamestream feature allows you to play games on a shield device anywhere while the actual rendering of the game is done on a stationary PC. The work included firstly developing the front-end part of the app and later on working on the backend to integrate with the GPUs in the system. The app also allows you to record in-game videos, take high quality images and also provides options for the best in-game settings for best overall experience.

**Tool used (Development tools - H/w, S/w) :** Angular Framework, Typescript, Git, Gerrit code review system

**Objectives of the project :** To work on improving and optimising the existing GeForce Experience and also work on adding new proposed features

**Major Learning Outcomes :** Understanding gaming ecosystem, front-end, backend, integration, writing structured code, teamwork

**Brief Description of working environment, expectations from the company :** Nvidia offers the best work environment with flexibility in working timings, free transportation, free meals and coffee all throughout the day. The workplace is ideal with everyone having a desk to work on and no one has a dedicated room, even the managers. You can freely interact with anyone and get help whenever you're stuck. The team meetings offer a lot of knowledge to you as they are very descriptive. When you join as an intern, you'll be given a mentor that'll prove to be very helpful in times of need. The work environment exceeded my expectations.

**Academic courses relevant to the project :** Object Oriented Programming. Data Structures and Algorithms.

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## *PS-II Station: Nvidia Hardware, Bangalore*

## Faculty

### Name : Sir Brajabandhu Mishra

## Student

### Name : Poojan Patel (2015A3PS0343H)

**Student Write-up**

**Short Summary of work done during PS-II :** I worked on Formal Verification during my Internship. I had to formally verify some modules using system verilog assertions and find bugs if any.

**Tool used (Development tools - H/w, S/w) :** JasperGold

**Objectives of the project :** My main objective was to do formal verification of RTL modules and find bugs if any.

**Major Learning Outcomes :** Formal Verification, System Verilog, Debugging skills, JasperGold

**Brief Description of working environment, expectations from the company :** Company culture is very motivating and at the same time pretty flexible. All the employees are very supportive and helpful.

**Academic courses relevant to the project :** Digital Design, Analog digital VLSI Design, Verilog

## Name : Pulkit Agrawal (2015A8PS0523G)

### Student Write-up

**Short Summary of work done during PS-II :** The objective of this project is to find the input pin mismatches and correct them so as to make sure that the pins are connected to same nets. If the connections are not as per the old build then the logic will change and the whole design will build to something else, hence, it is very important that connections are correctly made. After the pin mistaches are finished, instancing of the macros in the SOC is supposed to be done. But because of the migration to NVQ, there has been a complete reshuffling of elements and macros. There has been regrouping of elements and the location of these elements have been completely changed. Hence these locations or what is called in this case the Hierarchies need to be updated. There are various checker which are made in order to test the working of SOC. These checker are not synthesized but are very important for the verification of the SOC. There are various checker which are created. These checker need to connect to the SOC. There are various input pins in these checkers which are connected to the SOC. Now the hierarchies of these inputs pins have changed, hence the checkers also need to be updated with the new hierarchy.

**Tool used (Development tools - H/w, S/w) :** Python, Perl

**Objectives of the project :** SOC Port Cleanup

**Major Learning Outcomes :** SOC Design Flow, Clocking Schemes in SOC

**Brief Description of working environment, expectations from the company :** Amazing work environment, very easy going people and managers.

**Academic courses relevant to the project :** Digital Design

# *PS-II Station: Nvidia Software, Bangalore*

## Mentor

### Name: Dhiraj Kumar

**Designation:** Senior Architect, Infrastructure

**Comments:**
We look for interns who are dedicated, inquisitive, flexible and interested in learning. We are very happy with students' performance and contributions.

## Faculty

### Name : Mr. Brajbandhu Mishra

## Student

### Name : Utkarsh Jain (2014B5A80864P)

**Student Write-up**

**Short Summary of work done during PS-II :** The project involved exporing SOME/IP and its C++ implementation vsomeip. The next phase involved building and running vsomeip apps across two Ubuntu machines. The final goal was to build and run vsomeip apps across Tegras on DPX2 board, this was initially done using Yocto's buildsystem and then using Tmake (NVIDIA's own buildsystem).

**Tool used (Development tools - H/w, S/w) :** C++, Linux

**Objectives of the project :** To build the vsomeip apps

**Major Learning Outcomes :** Learnt about various Buildsystems

**Brief Description of working environment, expectations from the company :** Working environment is good. Many of the employees are friendly and helpful. Regular interactions with mentor and manager were helpful for completing work on work. Work to be allotted to interns should have been decided before hand so that the time would have been utilized more judiciously.

**Academic courses relevant to the project :** Object Oriented Programming, Computer Programming in C

## Name : Suraj Sarab (2015A3PS0375H)

### Student Write-up

**Short Summary of work done during PS-II :** I worked in the development of examples for relevant use-cases in an effort to integrate GLSL in the Compute Trace Generation Framework. This helps the architects who use the framework to generate compute traces to test upcoming features in the next generation of chips utilize the functionalities that GLSL adds to the platform. It also allows the team to identify the features that can be supported by the framework. My work also included development, feature additions and bug-fixes of the tools owned by the team (Trace Tools) that deal with disassembling, modification and debugging of traces. I also worked on developing an UI based workflow for trace generation of scenario based tests so as to enable the architects to maintain their focus on the feature that has to be tested and not getting caught up in the framework intricacies. It also provides a visual representation of the trace generation workflow and enables the generation of complex test-cases with relative ease.

**Tool used (Development tools - H/w, S/w) :** Visual Studio, Atom, Perforce, Internal Tools

**Objectives of the project :** Trace Tools development

**Major Learning Outcomes :** GPU Architecture, OS and Computer Architecture concepts, Programming paradigms, Web Development

**Brief Description of working environment, expectations from the company :** The work environment is great at enabling peer to peer learning at every opportunity possible. The flexible working hours, Resources to learn, equipment available and the general attitude of the team-mates and senior executives inspire employees to learn and grow in their job and also work as a team. Company expects and enables it's employees to not only deliver results according to the plan, but also make valuable suggestions/additions to the resources or work-style. The demarcation of time into sizable chunks and self evaluation of your performance in that chunk to work better as an individual and also a team is a notable quality that I observed here.

**Academic courses relevant to the project :** Operating Systems, Computer Architecture, C++, OOPS, Computer Graphics(Optional)

## Name : Kayithi Vahila Reddy (2015A3Ps0298H)

### Student Write-up

**Short Summary of work done during PS-II :** Fixing MISRA C violations, taking KPI measurements, developing test application for mixer and reduction of Code Complexity.

**Tool used (Development tools - H/w, S/w) :** S/w. Git, Jira, Understand are the tools used.

**Objectives of the project :** PLC certification of automation code.

**Academic courses relevant to the project :** C Programming

## Name : TEJESH ANDHAVARAPU (2015AAPS0264H)

### Student Write-up

**Short Summary of work done during PS-II :** Developing SSTI for QNX. Performance Tests are to be automated in SSTI. Coming up with a generalized approach for adding System Software Tests in SSTI. Developing a json parser script for running the host and target side commands respectively. Addition of update sample test and golden register test using the json parser script. Adding TOT support in SSTI. Enabling VectorCast in SSTI to generate coverage reports for all the QNX modules

**Tool used (Development tools - H/w, S/w) :** Jenkins, Docker, Vectorcast

**Objectives of the project :** The project involves adding different tests to the testing infrastructure SSTI.

**Major Learning Outcomes :** Bash Scripting, Python

**Brief Description of working environment, expectations from the company :** Great working place and environment. All the employees are friendly and approachable. It is a amazing place with all the comforts you would expect and with constant support from the team members. The work timings are very good and quite flexible. There is scope to learn to learn a lot of new things and gain a variety of skills.

**Academic courses relevant to the project :** C Programming, Operating Systems

## Name : Sreehari K (2015A3PS0282P)

### Student Write-up

**Short Summary of work done during PS-II :** I was allotted DGX System Management team. Nvidia DGX is a world's first super computer which specialize in using GPGPU(General Purpose GPU) to accelerate deep learning applications. DGX System Management(NVSM) contains 3 pillars namely NVSM-APIS (A server which collects and structures system hardware information from DGX and provides redfish-like APIS for clients to access) , NVSM-DSHM (DGX System Health Monitor, Queries these APIS to define system health, logs error (if any) alerts to DB and notifies user), and NVSM-CLI (A custom-made command line interface to access the DB, to define monitoring policy).
The integration testing between these pillars were automated through a test suite for Continuous Integration. Errors were simulated in NVSM-APIS and responses of DSHM and CLI were verified. Test suite uses python unittest module and covered all use cases that ensures sanity across the repositories. The suite was integrated to git through tools Jenkins, docker and vagrant and will get triggered upon every merge request.
The suite contains as many as 60 test cases and takes less than 5 minutes to run. Logging, code coverage and HTML reporting were incorporated for better debugging. Coverage hit high value of 90%.
Also, a mock server that mimicked the NVSM-APIS that is running in a DGX was developed. This was not a part of the project but was used by the team for development.

**Tool used (Development tools - H/w, S/w) :** Jenkins, Docker, Vagrant, Python, Shell, Golang

**Objectives of the project :** To completely automate the integration testing of DGX System Management, To carry of the continuous integration after ensuring sanity across repositories, To assist the developer in debugging through logs and reporting, To measure the robustness of the code by calculating the coverage of daemons.

**Major Learning Outcomes :** 1. Concepts of continuous integration and automation.
2. Python and shell scripting. Especially python modules like unittest, requests, logging, pymongo, os and sys.
3. Tools like jenkins, docker and vagrant.
4. Brief overview of Golang
5. Importance of intra-team and inter-team communication, documentation and soft skills.

**Brief Description of working environment, expectations from the company :** The atmosphere in NVIDIA is very friendly and extremely conductive for knowledge transfer. The team was really supportive in terms of ramp-up and provided constant constructive feedback as the work progressed. They spent time to help, whenever I confronted a problem.The tech talks organised within the team helped to be up to date with the latest technology.
From the HR side also, the feedback from interns was taken regularly and issues were handled proactively.
The company (from the perspective of my team) expect one to adhere to the milestones, to be a quick learner, to be polite, confident and clear while interacting with the team. In every sense, I was treated equal to an employee within the team, so was expected to bear equal responsibility.

**Academic courses relevant to the project :** Object Oriented Programming, Operating Systems.

## Name : Prakhar Gupta (2014B2A30906H)

### Student Write-up

**Short Summary of work done during PS-II :** As a part of the dynamic and customer centric TSE System Software Team, I have been actively involved in following projects in past 4 months:

1) Power-fail safe update: Tested and validated the complete power fail safe feature for Nvidia's automotive middleware, Drive CX2 platform.
2) Regression for partitions updates: Optimized the S/W update time for customer platform, NTG7 Parker by reducing the erase time for QSPI and EMMC partitions by ~75%.
3) Boot KPI Optimization: Currently driving the entire project for optimizing the Boot Time on customer's automotive platforms, Boden NTG7 Parker and Xavier, by identifying the Key Performance Indicators and reducing the inital boot time by ~50% to meet the customer targets.

**Tool used (Development tools - H/w, S/w) :** H/W : Nvidia DCX2/DDPX
S/W : Linux, Git, Update Sample Toolchain, C concepts

**Objectives of the project :** Primary objective of the projects I have been directly or indirectly involved was to optimize the time consumption related to current customer deliverables.

**Major Learning Outcomes :** Thorough learning about BootLoader and Bootloading proces, fundamentals of C, Git and Linux proficiency

**Academic courses relevant to the project :** Operation Systems, Computer

Architecture, C programming

## Name : V SAI NIHKIL (2015A3PS0312H)

**Student Write-up**

**Short Summary of work done during PS-II :** Worked on making the NVGPU driver code MISRAC coding standard compliant.

**Tool used (Development tools - H/w, S/w) :** Coverity

**Objectives of the project :** To make the NVGPU driver code MISRAC Compliant

**Major Learning Outcomes :** MISRAC coding standard rules and directives and its importance

**Brief Description of working environment, expectations from the company :** Work environment was very friendly and all the team members were supportive and encouraged any doubts in the project.

**Academic courses relevant to the project :** C programming

## Name : Ch. Srujana (2015AAPS0273H)

**Student Write-up**

**Short Summary of work done during PS-II :** Developed a C implementation of Configuration Database parser. Improvised the configuration files to JSON and developed a complete parser and established streaming, also worked on improvising scripts for automizing streaming.

**Tool used (Development tools - H/w, S/w) :** C, python - SW tools

**Objectives of the project :** To develop a C implementation of Configuration Database parser

**Major Learning Outcomes :** Learnt python, got better at C programming, learnt other soft skills like team work and communication skills

**Brief Description of working environment, expectations from the company :** Working environment is very encouraging to help us come with our own ideas and implement them. Guided properly to achieve the tasks assigned.

**Academic courses relevant to the project :** C, OS

# *PS-II Station: NYKAA E-RETAIL, Gurgaon*

## Faculty

### Name : Ashish Narang

## Student

### Name : Veeroji Kale (2015A7PS0015P)

**Student Write-up**

**Short Summary of work done during PS-II :** i was assigned a work related to front end development so initially i was learnt all new technologies related my project like reactjs, HTML, SASS and java script
and i was given work on Search Engine Optimization (SEO )and web performance of a web application and integrating new API's for the Product Description Page (PDP) and Product Listing Page (PLP) page of a e commerce web site. so I was learnt and done deep research about SEO using SEO tools and web performance of a e commerce web site using web performance optimization tools and i was submitted report to the manager and he asked to fix some of the issues i identified during research then i picked some tasks related to SEO and Web Optimization and I was fixed those issues which made web site faster than before and increased organic traffic of the website. after that i have assigned API Integration for PDP and PLP page of a E-commerce web site so i need do replace third party API with in house API for those two web pages so i was initially done for PDP. I was written transformer for in house API which make the response of in house API compatible with components on e -commerce web site which are previously consuming third party API data.and also removed many extra API calls previously calling for the data on the PDP page as all the aggregated data of the PDP page are getting from new in house API and removed unnecessary code from the code base which reduced the file size and redundant code from code base and make code base clean and clear and written code with Es lint standards with proper jsdoc comments .done same thing for PLP API.as result it decreased the load time of a web site which makes web site faster and which will ultimately increase the SEO rankings

**Tool used (Development tools - H/w, S/w) :** Reactjs Library for Components development on web site and SASS for styling and MOZ pro SEO tools to learn and

research on SEO of e-commerce web site and google web page speed insights and google lighthouse test tools for web performance optimizaion and redux for project architecture and VS code editor and git for repository and code base management and github for team collaboration

**Objectives of the project :** making website faster using latest technologies and methods and increasing SEO ranking and decreasing load time using web optimization techniques which are have huge impact on revenue of a e commerce web site

**Major Learning Outcomes :** Learnt Search Engine Optimization and Web performance Optmization and learnt developing Components of a web application using Reactjs and javascript and learnt replacing third party API with in house API

**Brief Description of working environment, expectations from the company :** my PS2 company is startup and i have very huge scope for learning many things and also interacting with higher hierarchy people in the organization. and all the people in the organization are very friendly and open minded and they clarify doubts immediately when ever i ask and i have given sufficient work for my entire period of PS2 and A lot of different interesting projects are going on in Nykaa which highlights the amount of opportunities to learn.

**Academic courses relevant to the project :** OOP, DSA, CN, DBMS

## Name : ADABALA SANDEEP (2015A7PS0054P)

### Student Write-up

**Short Summary of work done during PS-II :** RMS(Return Management System) is a Microservice associated with Nykaa e-commerce. It is a multi module maven spring boot project built using maven. First project is to write unit test cases of service classes associated with RMS. Second is migration of RMS from Spring Boot 1.4.3 to Spring Boot 2.0. RMS is migrated from 1.4.3 to 1.5. Then , from 1.5 to 2.0.6. Third is to improve the performance of RMS from logging perspective. Earlier, application logging is done asynchronously using log4j2 framework with async appenders. These are replaced with Async loggers. Vault is another micro service associated with the site and application. Final project is to write unit tests of vault's service methods.

**Tool used (Development tools - H/w, S/w) :** Intellij IDEA

**Objectives of the project :** Unit Testing, Logging, Spring Boot Migration

**Major Learning Outcomes :** Unit Testing using JUnit and Mockito
MicroServices using Spring Boot
Dependency management

**Details of Papers/patents :** Presentation of office work is made to the team and release notes and documentations are shared with our group.

**Brief Description of working environment, expectations from the company :** Everyone around in the company is approachable and always willing to help despite being a small group of 80 or so and their hectic work. Documentation of work, release notes, presentation of projects etc. are expected.

**Academic courses relevant to the project :** CS F213 Object Oriented Programming

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# *PS-II Station: Oracle, Hyderabad*

## Faculty

### Name : T.V Rao

## Student

### Name : INDRANIL BHAUMIK (2014B4A70924H)

**Student Write-up**

**Short Summary of work done during PS-II :** The project consisted of developing a new Rules-engine which can handle Business invoices, expense reports mainly, but not limited to these prominent use-cases. The objective was to build an application which can handle inputs in the form of spreadsheets or from data-tables and can evaluate them against the rules which are pooled in an efficient way to remove redundancy caused by multiple unnecessary evaluations. Decision-tables were built to represent the same and predecessor results were cached to prevent extra I/O calls to the database which has been found to be pretty costly especially when the modules were deployed onto the server. It requires further enhancements to incorporate many business cases and advanced modes in order to make it production ready but a working prototype has been successfully deployed which is showing considerable improvements over the current offering.

**Tool used (Development tools - H/w, S/w) :** Java, MongoDB, XML parsers, PL/SQL

**Objectives of the project :** To build a full-fledged Rule-engine which can address the high-memory usage issues faced by the previous application and to improve upon the evaluation performance.

**Major Learning Outcomes :** The decision to make multiple I/O calls to the database can be tricky when handling huge amounts of data. While having a cache within the heap addresses this issue, the heap usage increases which has it's own demerits. Further, design choices made during the first phase before the implementation is the most crucial thing to consider as this is what drives the project into a certain direction, diverting from which can be very costly later on.

**Details of Papers/patents :** Approval on a patent for the new approach to a condition-table based rule-engine is pending.

**Brief Description of working environment, expectations from the company :** The work depends upon the team assigned to an intern. In my case, the team has given me a lot of encouragement to drive the project in the way I visualize. I've had the freedom to make both the design choices and the tools to be used as I see fit. The management expects an intern to show a bit of enthusiasm and appreciates the ability to think and ask questions instead of just following what's been told. In most of the cases, the mentors and even any employee (unrelated to your team) is more than willing to help you out with even the smallest of the doubts you face. As an intern, it's really necessary to have regular discussions with the manager and the team to let them know about the progress made and the issues faced.

**Academic courses relevant to the project :** DSA, DBMS, Object Oriented Programming

## Name : Chanukya Nunna

### Student Write-up

**Short Summary of work done during PS-II :** First project: Worked on creating web page using Java script to provide batch delete and update functionality to the customers. The records are fetched using rest API and can be updated or deleted.
Second project: Built a tool for automating testing. Mainly, wrote a bash script which can be called everyday as a crone job.
Third project: developed a tool to find label for each click Id that registers in the log files at the server level whenever it is clicked in the UI. Main job in this project is to develop parsers.
And also did small tasks like detecting number of times a bug is occurring in error logs, finding long running jobs in ESS sheduler etc..

**Tool used (Development tools - H/w, S/w) :** Java script, Java, Bash, python, sql

**Objectives of the project :** Creating user friendly and authentic tools for the customers

**Major Learning Outcomes :** Became good at SQL, JavaScript and bash. Had a bigger level view of things.

**Brief Description of working environment, expectations from the company :** Environment is good. Team members are very helpful.

**Academic courses relevant to the project :** Oops, DSA, C programming

### Name : Kushagra Deepak Saxena (2105A7PS0099H)

**Student Write-up**

**Short Summary of work done during PS-II :** Most of the work was on queryies, Development

**Tool used (Development tools - H/w, S/w) :** SQL(advanced), Data Structures, Java, JavaScript, SQL Developer, Oracle Linux, Python, REST Services

**Objectives of the project :** Click Stream Analysis, REST Services

**Major Learning Outcomes :** SQL-PRO, REST Services knowledge, click id labeling learning

**Academic courses relevant to the project :** DATABASE (still not enough at all), Data Mining only

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## *PS-II Station: Oracle India Private Limited, Bangalore*

## Faculty

### Name : Anita Ramachandran

## Student

## Name : Nagaraju Machavarapu (2015A7PS0001H)

**Student Write-up**

**Short Summary of work done during PS-II :** My project is to implement FIDO U2F Authentication in Oracle Access Manager(OAM). FIDO enables enterprises and service providers to deploy strong authentication solutions that reduces reliance on passwords. I wrote a Java script API that enables U2F Authentication. Then I wrote a java source code to register and authenticate my U2F device . Then I wrote a Authentication plugin to integrate my code in OAM(specific to Oracle).

**Tool used (Development tools - H/w, S/w) :** Eclipse, J Developer, Intellij, OAM, Java script, Java

**Objectives of the project : The** objective of this project is to provide strong Authentication solutions to reduce reliance on passwords so that the accounts cannot be hacked.

**Major Learning Outcomes : I** learnt Java script language for this project. I also learnt how to use eclipse and other hardware tools. More than that I got to understand the work environment.

**Brief Description of working environment, expectations from the company :** Working environment was very good. Everyone took good care of us. They gave us time to understand things. My team members helped me in many ways through these five months.

**Academic courses relevant to the project :** Cryptography

## Name : Roshitha Bezawada (2015A7PS0059H)

**Student Write-up**

**Short Summary of work done during PS-II :** Developing REST APIs for Oracle clusterware events using internal oracle libraries

**Tool used (Development tools - H/w, S/w) :** Mobaexterm

**Objectives of the project :** REST APIs creation

**Major Learning Outcomes :** DSA - few parts, computer networks

**Details of Papers/patents :** Paper regarding my project at Oracle conference

Page

**Brief Description of working environment, expectations from the company :** Employee friendly company, space for new ideas in a team. Well structured guidance is given to the interns especially in my team.

**Academic courses relevant to the project :** Computer Networks

## Name : Rishi Kaushik (2015A7PS0046H)

**Student Write-up**

**Short Summary of work done during PS-II :** I worked as part of the Platform Service of Oracle Management Cloud. The Platform Service at OMC receives data in various ways, including REST APIs. A developer of the platform team needs to understand various concepts such as EJB, JPA, ORM to efficiently maintain the APIs and remove any bugs or performance issues. Also new APIs need to be created as and when required by clients or other services.

**Tool used (Development tools - H/w, S/w) :** Enterprise Java - EJB, JPA
JUnit
Weblogic Server
SSH Clients - Putty
VNC Server/Client
Oracle Database 12c
SQL Developer
Postman
MySQL
Git

**Objectives of the project :** API Development as Part of Platform Service for OMC And Exploring Alternative to JPA Implementation for Faster Database Operations

**Major Learning Outcomes :** I learnt about Enterprise Java and various technologies and APIs under it.
I also learnt how to code, deploy and debug web applications that work with a database.

**Academic courses relevant to the project :** CS F212 - Database Systems

## Name : Sagar Dasgupta (2015A7PS0108H)

**Student Write-up**

**Short Summary of work done during PS-II :** Work on side to java translation where the side file s generated from the Selenium IDE plugin of firefox 61 and I have to convert that side file into a Java executable file which can draw the webBrowser perform specific command related queries.

**Tool used (Development tools - H/w, S/w) :** Selenium IDE, Oracle Management Cloud, Scripted action tests, String template

**Objectives of the project :** Side to Java Translation as a part of Application Performance Monitoring - Oracle Management Cloud (OMC).

**Major Learning Outcomes :** Learnt about Selenium IDE, selenium source code and every selenium commands with their execution mechanism using firefox webdriver, String Template.

**Brief Description of working environment, expectations from the company :** Work environment is very professional in corporate sense. The team peeps are very resourceful and helpful at the same time. I also think I really got lucky with the manager I got allotted to, as he has always been a support and very helpful during the whole course of the internship.

**Academic courses relevant to the project :** Object Oriented Programming, Operating System, Computer Networks

## Name : Alekh Maheshwari (2015A7PS0097P)

### Student Write-up

**Short Summary of work done during PS-II :** The objective of the project was to integrate notification support as a second factor authentication for an Oracle B2B product-'Oracle Access Manager'.

This method is more convenient and intuitive than One Time Password (OTP) based two factor authentication. The project mainly required the knowledge of Oracle Access Manager plugins (Java plugins), REST API and Firebase Cloud Messaging. In Layman terms, when a user tries to access the protected resource, the resource owner receives a notification on his/her mobile (Oracle Mobile Authenticator app) which he/she could accept or deny based on the credibility of user trying to access the resource.

**Tool used (Development tools - H/w, S/w) :** Oracle Access Manager, SQL Developer, Firebase Cloud Messaging, Android Studio, Apache Tomcat server, Postman.

**Objectives of the project :** The objective of the project was to integrate push

notification support as a second factor authentication for Oracle Access Manager

**Major Learning Outcomes :** Learned about REST endpoints, Oracle Access Manager, SQL Developer, Maven, Firebase Cloud Messaging service, Json, Jsp, Ajax, Debugging in Eclipse, Android app development, OAuth, Cryptography, Apache Tomcat servers, and most importantly software design.

**Brief Description of working environment, expectations from the company :** Oracle has a great work culture and working environment. No dress code. No specific in-time/out-time or fixed number of working hours. Easy going people. Lesser politics. And we can directly report to the manager as interns. Pace of work is a bit slow.

**Academic courses relevant to the project :** OOP, Cryptography

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## *PS-II Station: OYO Rooms, Hyderabad*

## Faculty

### Name : Radhika Bulla

## Student

### Name : Ranajoy Roy

**Student Write-up**

**Short Summary of work done during PS-II :** The project involved aggregating various existing backend services and outputting data that can be easily utilized and displayed in the frontend in a client interaction application. The application would help improve customer experience and personalize it with the help of readily available information, instant feedback and timely notifications.

**Tool used (Development tools - H/w, S/w) :** Thrift, AWS DynamoDB, Spring Boot, Java (IDE: IntelliJ IDEA CE), React Native, JavaScript (IDE: VisualStudio Code)

**Objectives of the project :** Full Stack Development

**Major Learning Outcomes :** Essentials of Back End and Front End development (specifically for mobile applications and related micro services)

**Brief Description of working environment, expectations from the company :** There is no official training period, the interns were given a tech stack to familiarize themselves with after which they dove right into the project. While there are no hard deadlines, the intern is expected to frequently inform mentor and entire team about the progress made. There is a daily stand up meeting in which all team members discuss their tasks for the day and the issues they faced/are facing. The team members are helpful but no one asks particularly checks on your work, you will have to ask for help if you need it.

**Academic courses relevant to the project :** OOP (not necessary but helpful)

## Name : Rathi Amreshwar Vishnudasji (2014B1A30786H)

**Student Write-up**

**Short Summary of work done during PS-II :** The back end development for new product called OYO events.

**Tool used (Development tools - H/w, S/w) :** Postman,spring boot, InelliJ

**Objectives of the project :** To make large bookings at oyo easy

**Major Learning Outcomes :** well aquatinted with JAVA and AWS

**Brief Description of working environment, expectations from the company :** The company expects you to know all the technologies and developmental coding beforehand only. Though they will tell you what to study ,you have to do it on your own.You can expect least help from anyone on any issue.The working culture is startup based where you are supposed to deliver on time.The expectations are higher from an intern.As it was first time the company didn't know how to treat the interns.

**Academic courses relevant to the project :** OOPS,DBMS

## Name : Dhruv Pandia (2014B2A80535P)

**Student Write-up**

**Short Summary of work done during PS-II :** During PS-II at OYO Rooms,I was assigned a task of developing a completely new service called OYO Events ,which manages booking for a large event such as corporate event, exhibitions,wedding

etc.It provides the solution in mainly three ways which are Event on boarding and package creation, Bulk booking Management Dashboard & Intelligent Room Allocation System

**Tool used (Development tools - H/w, S/w) :** Spring Tool Suite, Angular Framework, Amazon Web Services,Thrift

**Objectives of the project :** Manage Room Booking for a large Event

**Major Learning Outcomes :** Creating an API, Integrating Database into project ,Web Development.

**Academic courses relevant to the project :** Object Oriented Programming,Data Structures

### Name : C PRANAY REDDY (2014B4A80757P)

**Student Write-up**

**Short Summary of work done during PS-II :** I have made use of statistical and deep learning models to forecast the number of used room nights against time in hospitality industry. In addition to the above, A lot of time was spent on automating the mechanism.

**Tool used (Development tools - H/w, S/w) :** Python, Amazon web services

**Objectives of the project :** To forecast the Demand in the upcoming days across cities, Zones and Clusters.

**Major Learning Outcomes :** Machine learning Algorithms, Python and Operating systems.

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## *PS-II Station: OYO Rooms, Gurugram*

## Faculty

### Name : Mr. Ashish Narang

## Student

## Name : Aditya Bhatia (2015A3PS0237G)

**Student Write-up**

**Short Summary of work done during PS-II :** Software development (JAVA)

**Tool used (Development tools - H/w, S/w) :** JAVA, Spring

**Academic courses relevant to the project :** Object Oriented Programming

## Name : Akash Goel (2015A3PS0321H)

**Student Write-up**

**Short Summary of work done during PS-II :** 1.HeatMaps of oyo vs non oyo hotels 2. Addition of value added service feature on Orbis App 3. Deduplication of hotels

**Tool used (Development tools - H/w, S/w) :** Ruby on Rails SpringBoot Eclipse RubyMine

**Objectives of the project :** 1.Implementation 2. End to End testing

**Major Learning Outcomes :** 1. Write Production ready code

**Academic courses relevant to the project :** OOP, DBMS,

## Name : Akash Aggarwal (2015A8PS0338P)

**Student Write-up**

**Tool used (Development tools - H/w, S/w) :** Ruby on Rails, Mongodb, AWS, Postgresql, Kafka

**Objectives of the project :** Backend tasks

**Major Learning Outcomes :** Learned writing quality code, working with different teams

**Academic courses relevant to the project :** OOP

## Name : Mayur Krishna Gupta (2014B3A80707P)

**Student Write-up**

**Short Summary of work done during PS-II : -** Data Engineer Profile. Had to build tools for analytics team, automate proccesses and data handling. I also got an opportunity to involve in the analytics part.
- Made user interactive Dashboards via SQL queries by aggregating data from standard tables and calculated different metrices related to Pricing/Occupancy and applied different filters to make these user friendly and easy to compare.
- Completed tasks allotted by the team, such as persisting history of hive-server2 through Kafka, implementation of Ranger for granting only access permissions to users/teams, Performing Aggregations on standard tabular data and then storing them in External tables, so that end users can directly fetch/use data to perform analytics or make reports.

**Tool used (Development tools - H/w, S/w) :** SQL, Spark-sql, Hive, Hadoop, Spark, Sqoop, IntelliJ, Confluent-Kafka, Presto, Starburst-Presto, AWS Technologies (EC2, S3, EMR, HDFS, Zeppelin), Scala, Airflow, PyCharm, JAVA ,BI tools - Apache Superset, Metabase

**Objectives of the project :** Automation, Data handling, performance analysis,Implemented different team related tasks

**Major Learning Outcomes :** Data handling and visualization tools, Big data Architectures and Hadoop,
Explored the usefulness of data, (for Eg, the events data collected from android and iOS apps) and Quantifying this data by introducing some relevant metrices like Booking-conversion rates, Click through rate, consideration rate etc.

**Brief Description of working environment, expectations from the company :** The work hours are flexible and the people are really helpful. But we need to take interest in the tasks given and approach them. No issues if you can complete your deliverables within the timeline.

**Academic courses relevant to the project :** DBMS, OOP, OS

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# *PS-II Station: PayPal Chennai*

## Faculty

## Name : Dr. Padma Murali

# Student

## Name : Lok Vamsi Anumukonda (2015A7PS0096H)

**Student Write-up**

**Short Summary of work done during PS-II :** Goal in the start was to build a dashboard for easy monitoring
of the disputes coming in and how and by whom they are
being resolved.
This Dashboard can be monitored daily to refrain from using
SQL queries to find out statistics on the data coming in. By
being able to visualize this data graphically on the dashboard,
we can easily identify where the problem arises from, if any.

**Tool used (Development tools - H/w, S/w) :** TeraData SQL, Tableau Desktop

**Objectives of the project :** Daily monitoring of all workflows

**Major Learning Outcomes :** SQL and Database knowledge

**Brief Description of working environment, expectations from the company :** Very chill environment and lenient deadlines. Mainly spend the day going through databases to clean them out and then build needed dashboards.

**Academic courses relevant to the project :** DBMS

## Name : Hamza Iqbal Ali (2015A7PS0049H)

**Student Write-up**

**Short Summary of work done during PS-II :** 1. Scheduler for making payments for charities – We built a scheduler which makes payments without Great Plains. It mainly consists of 3 major components
a) Publisher
- Publishes messages into the AMQ by calculating the next payout date of the given charity according to its
preference and pushes the message into the queue.
b) Subscriber
– Subscribes the message form the queue and processes it for payment. Incase of a

failure it will
retry and check. After it successfully subscribes, it publishes another message for the next payout.
c) Processor
– Initiates payout using sendmoneyservAPI and updates all the tables in the donation, individual donation
and summary tables. This helps in validation and non-repudiation of payments. For unenrolled charities, we stored the
amount separately.
2. Building of Direct model – POC almost done
a) Tested viable use cases and came up with a solution to use this model in countries with legal restraints of
having a PPGF parent account. We have gone through the requirements and have come up with a theoretical solution to
be worked upon.

**Tool used (Development tools - H/w, S/w) :** Java, Spring MVC

**Objectives of the project :** The objective of the project is to create a payment system for charities keeping in mind the legal constraints in various countries. The project consisted of various payment models namely the Direct model and the intermediate models.

**Major Learning Outcomes :** 1) Writing better, more readable and explainable code. I learnt that a lot of use case optimizations can be done.
2) Social and inter team building skills.

**Brief Description of working environment, expectations from the company :** Good working environment.

**Academic courses relevant to the project :** Java

## Name : Deepak Mincheri (2015A8PS0448G)

### Student Write-up

**Short Summary of work done during PS-II :** Built a plugin that interacts with the Control-M Automation API which is a rest API.
Built an SOP for auto remediating Update statements that are part of Jobs that produce “duplicate rows” error in the source table.
Built a plugin to interact with the Batch Hub (development) API which is also a REST based API.
Worked on UiPath and Expect to create POCs relating to automation.

**Tool used (Development tools - H/w, S/w) :** Java with Spring Framework, SQL

**Objectives of the project :** Create plugins for a in-house error remediation framework.

**Major Learning Outcomes :** Getting industrial exposure in a reputed Company.
Polishing existing skills and learning new skills and cutting-edge technologies being deployed in a pioneering company.
Learning effective collaboration within a team and effective procedures for development of projects.
Learning how experienced programmers approach programming and problem solving.
Working on something that has a significant impact.

**Brief Description of working environment, expectations from the company :** PayPal has a open office environment with flexible timings. One can pick your schedule and allocate your time to myriad number of events and activities that go on in PayPal as long as one delivers their project as expected.

**Academic courses relevant to the project :** OOP

## Name : B Manish Reddy (2015A7PS0123P)

### Student Write-up

**Short Summary of work done during PS-II :** 1. Scheduler for making payments to charities in PPGF model
We have built a scheduler where we make payments to the charities without the involvement of the Great Planes. In this we mainly built 3 major components i.e.
• Publisher
This publisher publishes messages into the AMQ with the delayed time and the time delayed time is calculated according to the payment preference of the charity.
• Subscriber
Here subscriber picks up the message of the charity payment type, then it calls the processor with the payload of this message
• Processor
This is the main step in the payments, as soon as payload received then it publishes a new message into the AMQ for the next payment of the charity, and then completes the payment using the sendmoneyerv.
2. Building of Consolidated PPGF model-
• We have almost completed our POC where we found out the main things that have to be built by other teams, so that we can proceed with this model for our requirements.
3. Building of Direct model –
• Currently we are checking with the identity team where we can create a scope and using that we can make payments to charity without going through the flow and onboarding the sellar to partner.

**Tool used (Development tools - H/w, S/w) :** java-s/w
Maven framework-s/w

**Objectives of the project :** Building a NextGen payment model for cause domain

**Major Learning Outcomes :** I have acquired a lot of technical skills like spring framework, working with REST Api etc. One of the big take away from my internship is the ability to think from consumer, business and also form technical viewpoints

**Brief Description of working environment, expectations from the company :** Good working environment

**Academic courses relevant to the project :** Java

## Name : Yashodhar Meduri (2015A7PS0060H)

**Student Write-up**

**Short Summary of work done during PS-II :** The first task was to write python scripts which compared data of the API's hit rate through which the functioning of the API could be understood. The next task was to build a monitoring system for the Risk management system at PayPal.

**Tool used (Development tools - H/w, S/w) :** ReactJS, Node JS, Postman, and PayPal proprietary software.

**Objectives of the project :** Building a monitoring system for risk domain

**Major Learning Outcomes :** The new technologies learned, The understanding of how the big tech companies work.

**Brief Description of working environment, expectations from the company :** The working environment is one of the best in India. There is no pressure on the interns. You learn at your own pace and set your goals with the manager helping you out.

## Name : Rahul Saxena (2015A8PS0306P)

**Student Write-up**

**Short Summary of work done during PS-II :** Worked with a team to develop an auto-remediating framework, called Optimus, to auto-resolve the failures which are dealt handled manually by Data Ops Team.

**Tool used (Development tools - H/w, S/w) :** Spring Tools Suite, AJAX, JS, Spring MVC, Expect Scripting, REST API

**Objectives of the project :** To develop an auto-remediating framework called Optimus to auto-resolve the failures in different CDPUnits and reduce the dependence on L1 Engineers.

**Major Learning Outcomes :** Learnt Front End development with JS, BackEnd in Java using Spring Framework, REST API.

**Brief Description of working environment, expectations from the company :** Great Opportunity. Good Working Culture and great people to work with.

**Academic courses relevant to the project :** Object Oriented Programming.

## Name : Amritesh kumar (2015A3PS0248G)

### Student Write-up

**Short Summary of work done during PS-II :** The task was to first understand the entire alert generation module which includes the Alert Handing, Report Handling, Utility and Helper functions, Index and Services Call Handler modules. Once the logic and the flow of the code was known, the next step was to break the Alert and Report processor logic into different independent modules and link them to make a fully functional intent service. Once this was achieved the Quartz scheduler had to be configured to trigger the execution of the payload that was being sent by the User Interface component (The User Interface was not in the scope of my work) .It was then that the query was fired to the Elastic Search and the result thus obtained was checked for threshold breach, in case there is a breach alert mail is generated and sent or else if it is the triggering time then a Report for that trigger is sent.
After this part was done the platform was tested for different cases already stored in the database.

**Tool used (Development tools - H/w, S/w) :** Java
MySQL
ElasticSearch
Node.js
Apache POI

**Objectives of the project :** The objective of the project was to build a new framework for checking threshold breach, Alert Monitoring and Report generation features with added functionality of up scalability and tolerance to failure over the earlier S. Watch tool (a tool used for monitoring the migration traffic with different processors and acquire platform) using a new java-based platform in a way that further modification is easier.

**Major Learning Outcomes :** Learned coding practices used in the industry
Got hands on working experience with ElasticSearch database
Learned how professionals work in industrial environment

**Brief Description of working environment, expectations from the company :** The work environment is very friendly with work hours being flexible. The company gives interns chance to work on projects which can also go for production. It sometimes depends on the team but mostly one can expect good projects at this company.

## Name : Mayank Mundada (2015A7PS0149P)

### Student Write-up

**Short Summary of work done during PS-II :** My primary project was to develop a REST API capable of monitoring logs of any transaction API which calls it. Built a UI which invokes the REST API and creates a life cycle of the transaction from the logged data.

Later I worked on designing monitoring dashbaords which extract data from PayPal's logs and displays it in a graphical manner, creates alerts if any data point has a sudden spike or drop.

**Tool used (Development tools - H/w, S/w) :** Java, SpringBoot, Oracle SQL, Maven, Python, MongoDB, Tableau, Teradata

**Objectives of the project :** To build monitoring tools for Risk platform so that developers can address system issues quickly.

**Major Learning Outcomes :** Object Oriented Design, Full stack development, Data Analysis and Processing

**Brief Description of working environment, expectations from the company :** The overall work culture in PayPal was very enriching. The employees are friendly and always willing to help. All the staff and developer support teams are highly responsive and go out of their way to help the employees. Interns are treated as full time employees, and they are exposed to a very professional and systematic work environment. The projects were interesting and made me feel I am doing important work, which can actually benefit developers after I leave.

**Academic courses relevant to the project :** CS F213 Object Oriented Programming

## Name : Rahul Saxena

### Student Write-up

**Short Summary of work done during PS-II :** I worked in CDP( Core Data Platform) department at PayPal. Our department deals with a lot of errors daily which are currently being remediated manually by the team. Our team is in charge of building a software called Optimus that auto remediates these errors. We built a MVC Highcharts application which shows the status of these error auto remediation attempts. In addition to this we helped add pagination functionality in the Optimus UI. I also got introduced to UiPath RPA Software. We have built two JSON deserializers that parse and extract relevant data. We also got to work with Control M Automation API and built the Control M executor for the Optimus. I also worked with building the SOP for auto-remediation of Hadoop errors.

**Tool used (Development tools - H/w, S/w) :** Spring Tools Suite, UI Path, Java/Python, Javascript,

**Objectives of the project :** Building a software called Optimus that auto remediates the daily errors that CDP team deals with.

**Major Learning Outcomes :** Learning outcomes included getting to work with the latest RPA technology, a software called UiPath. Getting to learn the full stack web development, learning the industry standards for writing code. Learning how to communicate your work to your peers and how to work as a team on a big project.

**Brief Description of working environment, expectations from the company :** Working environment in CDP team is pretty good, everyone is so welcoming and supportive. Once you get in a team, they treat you as full time employee and you'll receive work accordingly. If you work hard, there's a pretty good chance that you'll get good work & projects as internship progresses. I, personally, got a variety of work, worked with various softwares, thus getting a much broader knowledge of tools and softwares as compared to others. Only expectation from company is that you work hard, they won't pressure you to, but one should.

**Academic courses relevant to the project :** Object Oriented Programming, Web Development- Full Stack. Data Structures & Algorithms (Optional, but preferable)

## Name : Karkhanis Aditya Raghavendra (2015A7PS0056G)

### Student Write-up

**Short Summary of work done during PS-II :** Galileo is a web application used to monitor alerts in a specific timeframe. It uses Reactjs at the front end and a java

Spring framework at the front end. The main function of Galileo is to collect data through various sources about alerts ( Exceptions ) caused and group them in a specific category. These alerts are stored using a MongoDB. Thus, whenever someone makes any changes to live environment, they can observe Galileo to find various bugs they have caused and take appropriate actions.
Galileo backend mainly has two sub-modules: the Data module and the Scheduler Module. The Scheduler module is responsible for collecting the alert data from various sources, categorising them and storing them in the MongoDB. Whereas the Data module is responsible for providing Rest API calls so that this data can be provided to the front end.

**Tool used (Development tools - H/w, S/w) :** Reactjs, Krakenjs, MongoDB, Java, Spring framework

**Objectives of the project :** To give Insights and Analytics on the Alerts generated by various Components in the PayPal's Payments Department at a glance so that they might be resolved quicker and increase the overall productivity of the entire department.

**Major Learning Outcomes :** 1) Learnt Front-End Web Develpoment using ReactJs and Querying nosql Databeses like MongoDB
2) Learnt and worked on various test tools like Spring Tool Suite.
3) Got extensive knowledge about various different components in the Payments Department in PayPal.

**Academic courses relevant to the project :** Object Oriented Programming.

## Name : Pandillapalli Bhargav (2015A7PS0070P)

### Student Write-up

**Short Summary of work done during PS-II :** Worked on Disputes API which is dispute management system for PayPal customers without logging into PayPal website every time.They can integrate Disputes API with their own API(If they have any) and can manage their disputes without reaching PayPal each and every time. During my course of internship here I was involved in various works like development(wrote code for handling ELV cases in compass), Testing and fixed some bugs as well.

**Tool used (Development tools - H/w, S/w) :** Java, Spring(Java Framework), Raptor(Specific to PayPal built on top of Spring)

**Objectives of the project :** Provide customer of PayPal hassle-free experience in managing their disputes

**Major Learning Outcomes :** Learned how to work with a team and how to write

quality code and how to get used to professional work.

**Brief Description of working environment, expectations from the company :** Work environment here is pretty good and I got a very good supporting team. The expectations from company are higher than what we as students of college think of. But they are not very hard to achieve. They just require a bit of dedication from our side. Overall work experience here is very good.

**Academic courses relevant to the project :** OOP, Data Structures

## Name : Amit Phabba (2015A7PS0068G)

### Student Write-up

**Short Summary of work done during PS-II :** I worked on an Internal tool which automates the approval process of code changes. It was a web App with the backend written in Java using Maven and Spring Boot. My contribution was focussed mainly in the front-end area where i developed a few web pages using various frameworks. Integrating various validators into the tool required a lot of orchestration between the back and front-end. I also noticed first hand the effect of a well designed site. The number of people using the site increased significantly. Also I developed a slack bot that allows users to conveniently interact with the tool. The advantages of it were clear : cross-platform support and it eliminated the need to be on a PayPal network. The results validated the above as we witnessed a substantial increase in the number of people using the slack bot.

**Tool used (Development tools - H/w, S/w) :** JavaScript, jQuery, Bootstrap, HTML, CSS, Java, Node.js, Cassandra

**Objectives of the project :** Improving an existing web-app by adding new features and develop an associated slack bot.

**Major Learning Outcomes :** Learnt to an Intermediate level JavaScript, Node.js, jQuery, Bootstrap

**Brief Description of working environment, expectations from the company : It** is a truly amazing place. The people here are very encouraging and supportive. There is always a motto of "Can we do this better in some way"?. Learning new and upcoming technologies forms an essential part of your work which makes it not only fun but also beneficial. There is no perceived bias towards intern or any other employee from anyone. PayPal encourages an open working culture and so interns are encouraged to talk to other people in the organisation and learn the inner working of their departments. Living in Chennai has its own share of problems with the most significant of all being the language barrier. Most people prefer speaking in Tamil which feels a little alienating. But overall it is a great place that encourages learning and allows you to explore what you like.

**Academic courses relevant to the project :** Object Oriented Programming.

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## *PS-II Station: PaySense*

### Faculty

**Name : Chandra Shekhar RK**

### Student

**Name : Raghav Sharma (2014B5A10845P)**

**Student Write-up**

**Short Summary of work done during PS-II :** Built up assets and content for the company's marketing efforts.

**Tool used (Development tools - H/w, S/w) :** Adobe After Effects, Adobe Premiere Pro, Professional grade cameras and equipments

**Objectives of the project :** The objective of our project was to build up assets and content for the company's marketing efforts, cutting across the acquisition, conversion, engagement and retention of users.

**Major Learning Outcomes :** Marketing principles, cinematic principles, the psychology of retaining consumers

**Academic courses relevant to the project :** PAVA, SFVP

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## *PS-II Station: Petasense- Services & App Development , Bangalore*

### Faculty

## Name : Raja Vadhana P

# Student

## Name : Deepak Alapatt (2014B4A30340G)

**Student Write-up**

**Short Summary of work done during PS-II :** Worked as a full stack intern on a bunch of minor features. This involved work from developing APIs to designing and implementing the Front-end to make use of it. Aside from that, I worked on improving an algorithm for predictive maintenance of industrial machinery.

**Tool used (Development tools - H/w, S/w) :** JavaScript, AngularJS, PostgreSQL, Python, Celery

**Objectives of the project :** Several minor features for the company's web application, Improve results of outlier detection algorithm for predictive maintenance

**Major Learning Outcomes :** Programming practices, Full Stack Development, Machine Learning in the domain of Vibration Analysis

**Details of Papers/patents :** Not applicable

**Brief Description of working environment, expectations from the company :** Great work environment. Every member of the team is extremely approachable and eager to help. You will definitely get to work on features that are significant to the company. No matter what work you're assigned, you will definitely learn a lot.

**Academic courses relevant to the project :** Object oriented programming

## Name : Sahil Kumar (2014B4A40555P)

**Student Write-up**

**Short Summary of work done during PS-II :** My first project was designing and implementing automated functional tests which would be written for all APIs while development and run everytime before deployment to catch regression bugs. After that, I was assigned a set of tasks time to time which require some design, design review and backend implementation. I was more involved with security and User

facing features like User Signup, Site Management features, Password History enforcement, Role Based Access Control etc. There were other small tasks at times (1-2 days of work) along with two separate projects. One of those was implementation of Petasense manufacturing app (a separate microservice) for Gen2 sensors.

**Tool used (Development tools - H/w, S/w) :** Robot Framework, Flask

**Objectives of the project :** 1). Design and implement automated functional tests; 2). Site User Management changes as per requirements

**Major Learning Outcomes :** Backend flow and design - various stages in designing and developing a feature for user. Programming for development purpose as opposed to competitive/problem solving.

**Brief Description of working environment, expectations from the company :** it's a small startup and there are very less number of people working with you which gives you an opportunity to own the task in hand and design it in the way you wish, which is good for learning design aspects. With regard to learning, you can ask for help from anyone but there is a limit to what you'll be learning that way. Don't expect too much of technicality or possibility of writing good algorithms or advanced structures (it's python based web development and most things you'll do are already been implemented as a library or tool). You can expect a good experience with overall product design and learning to write production ready code, following best practices and being involved with all stages in development. You can also expect working on many cool project which comes along your way time to time as startup grows.

**Academic courses relevant to the project :** C Programming, DSA, Cryptography, DBMS(Not taken), Networking(Not taken), OOP(Not taken)

## Name : Rishabh Gupta (2014B4A4081P)

### Student Write-up

**Short Summary of work done during PS-II :** Primary project was related to full stack web development where we had to develop features as per the requirements. Their main app has its frontend
written in ReactJS, D3.JS and the backend written in Flask.

**Tool used (Development tools - H/w, S/w) :** AngularJs, ReactJs, D3 as front end JavaScript framework. Flask
Python as back end framework, Robot as testing framework

**Objectives of the project :** To develop web application features as per the requirements.

**Major Learning Outcomes :** Learnt a lot in the field of full stack web development, optimization techniques, version control system, good practices to write modular code with documentation and finding out about the work process and how to manage, estimate time for your tasks.

**Brief Description of working environment, expectations from the company :** It's a small startup with about 15 employees in Bengaluru. People are very friendly, passionate about their work and helping in nature. They won't treat you as interns but as their peers. There will be working hours as per the situation but if you are passionate enough to learn you won't mind that.

**Academic courses relevant to the project :** DSA, OOP, DBMS, Machine Learning

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## *PS-II Station: Piramal Group, Mumbai*

## Faculty

### Name : Dr. Ankur Pachauri

## Student

### Name : Jayshil Joshi (2014B2A80737P)

**Student Write-up**

**Short Summary of work done during PS-II :** I worked with the data analytics of Piramal Corporate Services Limited. The aim of the team is to create impact through data, across all the businesses of Piramal Enterprises, Piramal Corporate Services and Piramal Foundation. With the ultimate motive of an analytics driven firm, the team coordinates with the strategy team to develop business models and strategies. I actively worked with Piramal Realty, Piramal Housing Finance, Piramal Construction Finance, Piramal Foundation and the Financial Operations team. The project with the Housing Finance team dealt with credit fraud detection model. There is a constant threat of delinquencies and bad debt in the lending business. The idea was to raise early warning signals for applicants and reduce the traditional overwriting process, for smoother and unbiased lending. The other project dealt with mid-market construction finance, finding potential buyers and improve sourcing. The idea was to create in-house city specific databases, and using analytics and historical data, determine the

best potential targets in the market. There were also a couple of initiatives to reduce turnaround time: Namely PPT Automation tool. The operations team spends multiple hours creating presentations for the deal clearance committee. With the help of this tool they can save lots of time, and focus more on the insights part.

**Tool used (Development tools - H/w, S/w) :** Spyder-Python, VBA-Macros, R-Studio, Excel, Powerpoint

**Objectives of the project :** 1) Improve mid-market sourcing for CF team: 2) Raise early warning signals for potential credit risks and follow up with account monitoring

**Major Learning Outcomes :** Business Knowledge, Case solving ability, Data Science and working with data

**Brief Description of working environment, expectations from the company :** Working environment was good. Friendly environment, highly experienced people. Helped us develop ourselves before stepping in the industry

## Name : Anukriti Gupta (2014B2A80584P)

### Student Write-up

**Short Summary of work done during PS-II :** The work here is in the analytics division. It requires sound knowledge of python and excel for business. We learnt how to process the data and extract meaningful information from it. Here the analytics team at Piramal is non profit organisation created a year ago which caters to the other businesses of Piramal Group. There are projects from the Piramal Housing and Capital Finance, Piramal Reality, Piramal Critical Care, Piramal Foundation. I firstly worked on the current portfolio of the entities who have taken loan from Piramal Finance. The credit risk and rate of default was calculated and the opportunities to increase the wallet share were identified. Later i worked on Piramal Critical Care Report Automation Tool. The reporting of PCC creates reports in excel and there is a lot of manual work which goes behind it which is time consuming. I generated a Automation tool which processes the given file, creates them in same format and then generates the final report. With this the manual effort has been reduced and the file gets generated within few minutes.

**Tool used (Development tools - H/w, S/w) :** Spyder, Python, Microsoft Excel

**Objectives of the project :** The main objective of my project was to automate the whole reporting task done by the reporting analyst which is time consuming and includes a lot of manual error. So I created a Reporting tool in which, when one selects a file he wants to process, it is checked first and then correspondingly output is obtained just by click of the button.

**Major Learning Outcomes :** A sound knowledge of python and excel is developed. I have learnt how to process data and extract meaningful results from it.

**Brief Description of working environment, expectations from the company :** The team is newly made, enthusiastic people, passionate towards working and really supportive. They have guided me throughout my journey of practice school and were a constant support. The working environment here encourages you to work and deliver good results. There is a friendly and a constructive environment which helped me learn the nuances of the tasks at hand.

## Name : Nikhil garg (2015A3SP0142G)

### Student Write-up

**Short Summary of work done during PS-II :** I initially wrote a Python script for combining different data sets generated by housing finance division and then move to analysis of the data. A reporting framework was put in place for daily monitoring of lead activity across the ecosystem. Further a target customer profile was generated which was used to develop a Call centre Prioritisation Logic and used by marketing team. A scoring model was created using a variant of Google Page Rank Algorithm for projects and channel partners across Mumbai to increase list of approved projects and increase reach among channel partners. Finally a Campaign Scorecard has been modelled basis campaign attributes and online Ad bidding process for monitoring and generating performance indices. An advanced excel based dynamic dashboard has been generated for campaign performance visualisation.

**Tool used (Development tools - H/w, S/w) :** Python, Excel, Tableau, Google Analytics

**Objectives of the project :** Generating performance indices and reporting framework for Digital Marketing Data

**Major Learning Outcomes :** Python Programming Skills and Knowledge of Advanced Excel. Working Knowledge of Google Ad Words and Google Analytics. Business knowledge of Digital Marketing.

**Brief Description of working environment, expectations from the company :** A very diverse team with people from different academic backgrounds and experience of working in data analytics. A helping environment with proper guidance and support for developing analytical thinking and understanding integration of business knowledge and critical thinking into planning. Constant feedback and suggestions from senior members on areas of improvement.

**Academic courses relevant to the project : Neural** Networks and Fuzzy

Logic, Machine Learning

## Name : Abhinav Goyal (2015A8PS0497H)

### Student Write-up

**Short Summary of work done during PS-II :** Piramal Foundation, Piramal Group's philanthropic arm, drafted a new communications team with the objective of creating awareness among the masses about the foundation and its various initiatives including Gandhi Fellowship, Sarvajal and Swasthya. Social Media would play a major role in achieving this objective and hence the project was allotted to our team, given the recent impact of tools and analytics in the marketing industry.
The handles on Twitter and Facebook had been relatively inactive since their creation and the follower base had been meagre compared to industry leaders and benchmarks. Hence, the first step of the project was to understand and study how Twitter and Facebook's algorithms worked, the content shared by benchmark organizations, industry practices in non-profit sector and the types of posts and content which resonated more with the Indian audience.
The analysis involved data gathered from books, articles, interviews, historic post's data from benchmark handles and our own handles using API's and freemium tools.
The project lasted over two months and tools developed by the team are currently in production, diligently utilized by our partners and improving daily based on their feedback.
At the end of our project, our team delivered various frameworks and tools to our partners, which are flexible and scalable for other industries.

**Tool used (Development tools - H/w, S/w) :** R, Python, Excel and VBA

**Objectives of the project :** Social Media Analytics

**Major Learning Outcomes :** Social Media Analytics and designing relevant strategies, Designing various tools such as an Online Reputation Management tool, Automation and reporting, Data collection through crawlers and APIs**.**

**Brief Description of working environment, expectations from the company :** The team was extremely supportive with our work and made sure to involve us at each step of the way. I was encouraged to lead live projects, under mentorship from senior employees, and present my work and results to the top level management, from CEOs to group presidents and department heads, which helped me develop confidence in my skills while learning from their constructive criticism. Our contribution and ideas were valued by the team at every step.

**Academic courses relevant to the project :** Database Systems, Data Mining

# *PS-II Station: PLUSS Advanced Technologies*

## Faculty

### Name : Samir Ramdas Kale

## Student

### Name : Akshat Rastogi (2014B5A10702G)

**Student Write-up**

**Short Summary of work done during PS-II :** • Storage and Warehousing of PLOT-14, Bawal.
I would explain in detail about the storage and warehousing plan for Celsure Production, its Raw Material (RM) and Finished Goods (FG).
• Process Intensification for HS and FS pouch production line
I would explain the current process for pouch filling and some improvements which can be made to increase its efficiency.
• Thermal Analysis of the Celsure Box
I would explain the theoretical thermal analysis of the Pallet Shipper and further work which we plan on conducting for the same.

**Tool used (Development tools - H/w, S/w) :** ANSYS Workbench, Sigma Mixer, Planetary Mixer, Extruders etc

**Objectives of the project :** Mutiple projects were undertaken.

**Major Learning Outcomes :** I learned about PCM and its application, as well as simulation models.

**Brief Description of working environment, expectations from the company :** The people and managers are hospitable and provide their utmost support. The physical resources that are available for experimentation, at times, pose some problems but this itself makes the job all the more interesting. I got to undertake many different projects with relative ease hence making this a worthwhile learning experience for me.

**Academic courses relevant to the project :** Material Science, Heat Transfer, Thermodynamics, Transport Phenomena

# *PS-II Station: Postdot Technologies, Bangalore*

## Faculty

### Name : Raja Vandhana

## Student

### Name : Anshul Jain (2015A7PS0079P)

**Student Write-up**

**Tool used (Development tools - H/w, S/w) :** Postman, VScode, SailsJS, ReactJS

**Objectives of the project :** Worked on various automation projects like billing monitors, realiability reports, and intergrations for paid users.

**Major Learning Outcomes :** Learnt how to write scalable and production ready code.

### Name : BAIREDDY BHARATH REDDY (2015A7PS0025H)

**Student Write-up**

**Short Summary of work done during PS-II :** Worked on the Data validation framework which will check the sanity of the Redshift Tables . Worked on Workable API integration in Postman to notify the interviewers who have not posted any Ratings on the Candidates they have interviewed recently

**Tool used (Development tools - H/w, S/w) :** Postaman App, SQL, Javascript, Python

**Objectives of the project :** Required for keeping Redshift tables in check in terms of data and To use Workable API's to automate Hiring Process

**Major Learning Outcomes :** 1) Learned about Postman collection and worked

with them using monitors
2) Had a great exposure to Object Oriented Python and unit testing in Python.
3) worked on writing SQL queries and Javascript.
4) Worked on tests in Javascript.
5) Learned how to use different API's to solve real world problems like in Workable integration in Postman.

**Brief Description of working environment, expectations from the company :** Postman as an api startup company need students with skills related to Software Development, API development cycle, need students worked on Node platform in the colleges, should have known about Amazon Web Services, known about React.js before coming to join postman company.
Postman required more skilled persons in all the areas of software development.
As the BITS cirriculum does not provide all the above stated requirements, students should learn all these before joining postman as an PS-2 intern.

**Academic courses relevant to the project :** DBMS (SQL)

## Name : Ajay Dirisala (2015A7PS0028H)

**Student Write-up**

**Short Summary of work done during PS-II :** I was a part of Data Science team. I worked on various projects like forming user clusters, predicting the behaviour of users.

**Tool used (Development tools - H/w, S/w) :** AWS, SQLWorkbench, SQL

**Objectives of the project :** Prediction of users whether they're going to buy the product or not

**Major Learning Outcomes :** SQL, Python

**Academic courses relevant to the project :** DBMS, ML

## Name : PAVAN TEJA POTNURU (2015A7PS0007G)

**Student Write-up**

**Short Summary of work done during PS-II :** Postman app is used through out the development process of an API. My project was to develop an import plugin to import external Api specifications like OpenAPI specification into Postman app. OpenAPI Specification, originally known as the Swagger Specification, is a

specification for machine-readable interface files for describing, producing, consuming, and visualising RESTful web services. I also developed an import endpoint for Postman cloud api. Through this api endpoint one can import external api specifications like OpenAPI into Postman app using access_token auth.
I also successfully completed some small tasks which are useful for company in their development process:
1) X-ray_to_Looker: A Postman collection to move service-service traces from AWS X-ray to Looker.
2) Windows support for Travis builds on GitHub modules.

**Tool used (Development tools - H/w, S/w) :** Node.js(MVC framework), AWS X-ray

**Objectives of the project :** Developing an OpenAPI import plugin for Postman app and an import endpoint for Postman cloud API.

**Major Learning Outcomes :** Learnt Node.js, MVC architecture, API.

**Brief Description of working environment, expectations from the company :** Great working environment with many opportunities as the company is expanding in various fields.

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## *PS-II Station: Pricewaterhouse Coopers*

## Faculty

### Name : Sandeep Kayastha

## Student

### Name : Ayush Raj (2015A2PS0853P)

**Student Write-up**

**Short Summary of work done during PS-II :** My client was Inland waterways authority of India.During the initial phase of the internship my focus was majorly on the conduction of pilot movements for IWAI in Nw1 and Nw2.For this we read a report prepared by HPC and E&Y and noted all the commodities which could be moved on waterways.Then by secondary research, traders,dealers and manufacturers of those commodities were noted and they were contacted through

primary phone calls for conduction of pilot movements.Various factors were asked during the phone calls including cargo quantity,O-D pairs,current cost,first and last mile etc.Interested companies were further entertained by meetings for further processes.The next phase of my project included IWT research on global level.Countries like USA,China,Netherlands has a more developed waterway system, hence they were studied and the key success factors were noted which may be implemented on Indian waterways by IWAI in near future.

**Tool used (Development tools - H/w, S/w) :** MS-Powerpoint, MS-Word

**Objectives of the project :** To conduct pilot movement and to find out success factors of IWT worldwide.

**Major Learning Outcomes :** Got familiar with various waterway terms and systems.Learnt about various types and sizes of vessels in India and abroad and types of cargos moving in them.Got hands on experience on of the market scenario for waterway transport in India.

**Academic courses relevant to the project :** Hydrology,Construction planning and technology.

## Name : Naga Dheeraj Dogiparthy (2015A2PS0595H)

### Student Write-up

**Short Summary of work done during PS-II :** As a part of first phase of karnataka wastewater reuse policy implement drive, Karnataka Urban Water Supply& Drainage Board appointed PwC Bangalore as one of the consultant to identify potential reuse projects across the state, shortlist three projects, and prepare a detailed report including Pre-feasibility for these priority projects. The focus of the assignment is to identify the demand for use of secondary treated municipal sewage to meet industrial demand and possibly generate new revenue streams for the Board by implementing these projects across the state.

**Tool used (Development tools - H/w, S/w) :** GIS, PMER frameworks etc.

**Objectives of the project :** Objectives include shortlisting 8 cities in Karnataka to study water reuse potential. Further recommend 3 projects to the Board for conducting pre feasibility. After narrowing the 3 cities, PPP model and Pre-feasibility along with transaction process is to be done.

**Major Learning Outcomes :** 1. Engagement with different stakeholders for the project.
2. Different problems associated with various STP technologies
3. Possibilities for reuse of treated wastewater
4. Business development- bidding, proposals

**Brief Description of working environment, expectations from the company :** PwC Bangalore offers great working environment in the office. My line of service is GRID> PS&G (Public sector and governance) which involves lot of field work. You will work at the client site more than in the PwC office ( depends on the project). Company doesn't expect much, good content writers are appreciated well. Creative and logical thinking is all you need as a pre requisite.

**Academic courses relevant to the project :** Water and wastewater engineering, Construction Planning and MGMT.

## Name : Manish Chandra Yadavalli (2015A1PS0725H)

**Student Write-up**

**Short Summary of work done during PS-II :** The work done here mainly consists of consulting in oil and gas sector. This includes conducting market researches, benchmarking studies and business development.

**Tool used (Development tools - H/w, S/w) :** Microsoft office, Financial and Business analysis

**Objectives of the project :** To get an idea about the market for the product, To conduct a benchmarking study, to analyze the business plan of the company and contribute to its development

**Major Learning Outcomes :** Proficiency in MS Office, Increased proficiency in soft skills and presentation skills, Business analysis, Market Research.

**Academic courses relevant to the project :** Fundamentals of Finance and Accounting
Business Analysis and Valuation

## Name : Dikshant Agarwal (2015A3PS0206P)

**Student Write-up**

**Short Summary of work done during PS-II :** Worked on a project which has a objective of comparing the FiT and auctions in renewable energy market in global scenario

**Tool used (Development tools - H/w, S/w) :** Microsoft excel

**Objectives of the project :** Comparison between FiT vs Auctions in renewable

energy market in global scenario

**Major Learning Outcomes :** Dependency on difference situations

**Academic courses relevant to the project :** Financial Management

## Name : Shivam Mahajan (2012B4A20702H)

### Student Write-up

**Short Summary of work done during PS-II :** PwC India is assisting Airports Authority of India (AAI) in the Preparation of a Detailed Project Report (DPR) of Kalay Airport, Myanmar. The main purpose of the project is to evaluate the potential of the airport for feasible commercial operations. I was introduced to the project and practices to be followed for the same and have since then been working with the team to achieve the deliverable. I have worked on various sections of the project involving Traffic estimation, Cargo Potential and Cost Benefit Analysis.

**Tool used (Development tools - H/w, S/w) :** Microsoft Excel, Power point, STATA

**Objectives of the project :** An in depth Feasibility study of the proposed Airport was required to achieve the broad objectives: Firstly, to increase trade and connectivity of Myanmar with India and the world. Secondly, to add new dimension of multi modal connectivity in western Myanmar and thirdly, to increase proximity to the upcoming major trade and economic corridors.

**Major Learning Outcomes :** Throughout my engagement I have learned the various constituents of Feasibility Analysis and learned the various variables and methods of analysis to be industry-ready. Development of formal presentations and Reports was a considerable part of my engagement with an in-depth knowledge of the aviation sector of India and the World.

**Brief Description of working environment, expectations from the company :** The project is my first experience in working for a well renowned MNC. I am fortunate to be a part of a team which is bound by tough deadlines as it is helping me to be responsible and efficient at the same time. I am thankful to my mentors for providing me the exposures to the various practices of the company. The expectations in my mind at the start of my engagement have truly been met.

**Academic courses relevant to the project :** Many courses taught at BITS Pilani helped me during my engagement in this project. The most important ones were: Probability and Statistics, Algebra II, Discrete Mathematics, Fuzzy Logic, Mathematics III

# *PS-II Station: PricewaterhouseCoopers, Mumbai*

## Faculty

### Name : Prof. Sandeep Kayastha

## Student

### Name : Bharat Soni (2015A2PS0781P)

**Student Write-up**

**Short Summary of work done during PS-II :** PWC is broadly a consultancy company, providing its services over a plethora of domains such as Infrastructure, Deals,
Business Management, etc. Interns are assigned to the GRID division of PwC, allotted the Capital Project & Infrastructure Team, a further division of which is Transport & Logistics , Real estate and Urban Transportation.GRID division works on all the infrastructure projects of PwC. I was part of Real estate and Urban transport team and given a research project on Bus Rapid Transit System (BRTS) in which you analyse system at different parts of world besides that I worked on project like Mumbai 2.0, Maintenance efficiency of buildings ,Smart Cities Project and some research work on currently ongoing projects with team.

**Tool used (Development tools - H/w, S/w) :** Microsoft Word, PowerPoint, Excel

**Objectives of the project :** To create a Pitch Perfect document for Bus Rapid Transit System that help the firm save time in educating a professional.

**Major Learning Outcomes :** My work on Bus Rapid Transit System at PwC aims to provide its professionals with readily available information on the topic instead of finding different sources and starting all over again which takes up huge amount of time which is a great resource in the
professional consulting world. This project aims to save at least 2 months per professional if they are on Bus Rapid Transit System. This project can be used for pitching BRTS to government for developing in various cities by PwC.

**Brief Description of working environment, expectations from the company :** PwC has a great work environment. Everyone is treated equally and

cordially. The office hours are flexible and the environment in the office in general is good. The co-workers are always ready to help us in any way and you get to learn a lot from their experience. The various facilities within the office complex are great. The infrastructure provided by the firm is also great enabling us to work smart. We will also get a firsthand experience of life in a big corporate companies.

## Name : Himanshu Aswal (2015A2PS0714P)

**Student Write-up**

**Short Summary of work done during PS-II :** Analyse the current and future features of ports of India to find the potential of east coast port that can be developed. The importance of waterways in India is discussed which can reduce the logistics cost significantly. Initially, the container traffic is forecasted using GDP trend, population trend and throughput at ports to calculate the expected traffic using Microsoft Excel. Later, parametric study of ports is done to rank the ports according to different parameters like port infrastructure, industrial clusters, land availability, management etc.

**Tool used (Development tools - H/w, S/w) :** Ms Excel, Ms Powerpoint

**Objectives of the project :** Point of View on Container Traffic of East Coast Ports of India

**Major Learning Outcomes :** Enhanced thought process after series of discussions with the team members

## Name : Divyanshu Goyal (2014B4A40694P)

**Student Write-up**

**Tool used (Development tools - H/w, S/w) :** MS office

**Objectives of the project :** Market assessment

**Major Learning Outcomes :** Tools like financial modeling, MS Dynamics 365 Client facing experience**.**

**Academic courses relevant to the project :** Operations research

# *PS-II Station: PricewaterhouseCoopers, Bangalore*

## Faculty

### Name : Prof. Sandeep Kayasta

## Student

### Name : Eshan Mandloi (2014B3A30558G)

**Student Write-up**

**Short Summary of work done during PS-II :** The project was about the market analysis of Electric Vehicles and their future prospects. In the first part of the project I studied the EV market both India and Global. I studied about the various trends seen in different countries and the various policies different governments have adopted to promote the use of EVs. I studied the different types of business models adopted by the EV manufacturers. Since EV market is still in a nascent stage in many major markets there are various standards that exist for charging the EVs. All the charging standards were studied and compared. Indian EV market is lagging behind its global counterparts. The various reasons for this were identified and some remedial measures were suggested. Then I studied the vehicle trends in Bengaluru and predicted the number of vehicles to be expected in the city by 2030. Then under different scenarios this prediction was used to estimate the number of EV to be expected in Bengaluru by 2030. Then I made a financial model for an EV charging station. The CAPEX and OPEX for the charging station were calculated. The financing for the CAPEX was also suggested. Finally a levelized tariff was calculated for the EV charging station.

**Tool used (Development tools - H/w, S/w) :** Excel

**Objectives of the project :** Electric Vehicles - Market Analysis and Future Prospects

**Major Learning Outcomes :** Financial Modelling

**Academic courses relevant to the project :** Fundamentals of Finance and Accounts, Financial Management, Electric Machines, Power Systems

### Name : Kunal Malavia (2014B2A30948G)

**Student Write-up**

**Short Summary of work done during PS-II :** Researched and prepared a solution oriented by blockchain technology for the energy industry. PwC provides consulting services in energy sector and was looking new solutions to pitch to its clients using the modern day technologies of blockchain, artificial intelligence and machine learning. I thoroughly researched on the blockchain technology and used my understanding to transform the existing operations in energy industry.

**Tool used (Development tools - H/w, S/w) :** MS-Word and MS-Excel

**Objectives of the project :** Design solutions based on blockchain technology.

**Brief Description of working environment, expectations from the company :** The work culture is very dull. The team lacked coordination and team working spirit. There is a lack of coordination within the team and a lot of irregularities in the flow of work.

## Name : Abhay Malpani (2015A2PS0798P)

**Student Write-up**

**Short Summary of work done during PS-II :** I was allotted the project on the next day of my joining. The consulting assignment was in the domain of Public Sector and Governance (PS&G). The project was to do prefeasibility study for wastewater reuse opportunities in three cities of Karnataka. The client was Karnataka Urban Water Supply & Drainage Board (KUWSDB). The project involved meeting various stakeholders, industrialists and municipal council bodies, also included travelling to various towns in Karnataka for data collection. At last report making and preparing presentations are the mandatory tasks involved.

**Tool used (Development tools - H/w, S/w) :** MS Word, MS Excel, MS Powerpoint

**Objectives of the project :** Conducting prefeasibility studies for wastewater reuse opportunities in three cities of Karnataka

**Major Learning Outcomes :** Project Outcomes - Water scarcity scenario and wastewater reuse methods and techniques
Skills - Communication and Presentation skills

**Brief Description of working environment, expectations from the company :** The work will be based from client office/site. Don't expect to work feom lavish company office when working on a project with client. So in a nutshell your working conditions depend on your client and your manager

**Academic courses relevant to the project :** Water and wastewater treatment

# *PS-II Station: PricewaterhouseCoopers, Chennai*

## Faculty

### Name : Sandeep Kayastha

## Student

### Name : Krishna Prasad N (2015A2PS0518H)

**Student Write-up**

**Short Summary of work done during PS-II :** Worked with the PMC(Program Management Consultant) team of PwC for CSCL (Chennai Smart City Limited). Assisted the client in execution and implementation of the smart city projects. This included drafting and editing EOIs (Expression of Interest) and proposals, literature review, secondary research, field studies, presentations, meeting key officials, conducting workshops and writing reports.

**Tool used (Development tools - H/w, S/w) :** Microsoft Office, Google Maps, Adobe Photoshop

**Objectives of the project :** To help the Greater Chennai Corporation and the Chennai Smart City Ltd in managing, executing and implementing the smart city projects.

**Major Learning Outcomes :** Improved Presentation Skills, Communication skills, knowledge on PPP projects and funding, Information handling.

**Brief Description of working environment, expectations from the company :** The work environment is good, and the team members were absolutely amazing. I mainly worked out of the client site and worked out of the PwC office only for a few days in the initial phase. The colleagues there were helpful too and ensured a smooth transition into the system. The working hours are moderately flexible too. They expect you to think out of the box and come up with innovative solutions. But the brainstorming sessions and inputs from senior consultants significantly reduce the workload.

**Academic courses relevant to the project :** Highway Engineering, Business Analysis and Valuation, Technical Report Writing.

### Name : Rohan Goyal (2015A2PS0496P)

**Student Write-up**

**Short Summary of work done during PS-II :** Worked with Chennai Smart City ltd.which included various projects like developing a financial model for sports facilities and a sports complex, preparing a Detailed project report for parking demand assessment and Model and Smart Corporation Schools in Chennai and Expression of Interest for place-making of 22 major roads and literature study of various amusement parks around the world as part of a project in kerala

**Tool used (Development tools - H/w, S/w) :** Excel, Word and Power point

**Objectives of the project :** Sustainable and inclusive development and look at compact areas and create a replicable model

**Major Learning Outcomes :** Preparation of Detailed Project Report , Request for Proposals and Financial models

**Academic courses relevant to the project :** Fundamentals of Finance, Construction Planning and Technique

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## *PS-II Station: PricewaterhouseCoopers, Gurgaon*

## Faculty

### Name : Prof. Sandeep Kayastha

## Student

### Name : Rijul Arora (2014B3A30645G)

**Student Write-up**

**Short Summary of work done during PS-II :** I got the opportunity to work on the following projects:

1. Piloting rapid uptake of industrial energy efficiency in Zimbabwe
2. Resource efficiency for SME's of Food and beverage sector in Cambodia
3. Recognizing opportunities and challenges in skill development of EV sector in India
4. Verification of the biggest energy efficiency program in India for retroactive financing of USD 55 million by World Bank.
5. Developed a "Go to market strategy for Battery energy storage systems"
That being said, the work that I did should not be an expectation for anyone. This is because the work which each student will get will depend on the team, the time he is joining the company and the kind of clients which the team has at that point of time

**Tool used (Development tools - H/w, S/w) :** 1. Microsoft PowerPoint 2. Microsoft Excel 3. Microsoft Word 4. Microsoft Visio

**Objectives of the project :** 1. Piloting rapid uptake of industrial energy efficiency in Zimbabwe 2. Resource efficiency for SME's of Food and beverage sector in Cambodia 3. Recognizing opportunities and challenges in skill development of EV sector in India 4. Verification of the biggest energy efficiency program in India for retroactive financing of USD 55 million by World Bank. 5. Developed a "Go to market strategy for Battery energy storage systems"

**Major Learning Outcomes :** 1) Got proficient in tools like Microsoft PowerPoint, Microsoft Excel, Microsoft Word & Microsoft Visio. 2) Problem solving 3) Technical knowledge about energy sector & electric vehicles 4) Got acquainted with consulting culture.

**Brief Description of working environment, expectations from the company :** Will vary depending on the team you are a part of. Each person will have a unique experience depending on the team he is a part of and the kind of project he will work on

**Academic courses relevant to the project :** Financial Management

## Name : Rishabh Gupta (2015A2PS0735P)

### Student Write-up

**Short Summary of work done during PS-II :** My project was related to the upgradation of State road network (financial/ commercial side) . Initially the work included comprehending various reports which provided the background as well as the current status of the project. Further role included the side of financial development in relation to the upgradation of roads. It included the revenue analysis of the state government and ways to increase the collected revenue which could be channelized for the upgradation of roads. Various taxes by the govt. were worked upon and ways to increase the revenue through taxes were analysed. Several financing schemes were analysed relevant to the scenario of road upgradation. Also,

several innovative (non-traditional) financing mechanisms were also analysed and monetized for the govt. for the upgradation of road network.

**Tool used (Development tools - H/w, S/w) :** MS-Word, MS-Excel, MS-PowerPoint

**Objectives of the project :** Financial assessment, revenue analysis, road upgradation innovative financing, Medium Term Financial Plan (MTFP)

**Major Learning Outcomes :** Knowledge of government financing, professional ethics, report and presentation making, client site exposure

**Brief Description of working environment, expectations from the company :** The working environment is quite good and professional. The infrastructure as well as the overall culture (including the crowd) is nice. Expectations from the company would broadly include the will to learn, sincerity, endurance (sometimes) to work long hours, leadership skills.

**Academic courses relevant to the project :** Financial Management, Principle of Economics, Highway Engineering, Fundamentals of Finance and Accounting

## Name : Anirudh Garg (2015A1PS0498P)

### Student Write-up

**Short Summary of work done during PS-II :** Worked on various Oil & Gas projects including time mapping of steps involved in operating a petrol retail outlet in India, creating heat map for petroleum demand in India and Australia, analysing the life cycle of refineries in India, drafting market proposition by Indian Oil and Gas industry, preliminary market evaluation for Asian countries based on their favourability towards Oil and Gas downstream units, evaluating supply costs for Angola Oil and Gas industry.

**Tool used (Development tools - H/w, S/w) :** Word, Excel & Power-point

**Objectives of the project :** Detailed project report for consultancy services for various oil and gas giants

**Major Learning Outcomes :** Learnt primary interaction with clients and understood the art of conducting market assessment.

**Brief Description of working environment, expectations from the company :** Had a very good experience in terms of work exposure. Handled lot of good clients. Gained understanding of Oil & Gas industry. Could have allotted a single big project and can be more active in internal job transfers and role change.

Change of team and sector should be an option.

**Academic courses relevant to the project :** Principles of Management

## Name : Shardul Walwadkar (2014B3A80798G)

**Student Write-up**

**Short Summary of work done during PS-II :** The projects for me were from shipping and logistics domain and their nature was mainly as follows-

1. Secondary research and analysis to support ongoing projects
2. Stand-alone projects related to benchmarking analysis and developing Point of View Documents

**Tool used (Development tools - H/w, S/w) :** Excel, power point, word

**Objectives of the project :** Learning about the industry, developing internal knowledge, client deliverables and proposals for bid

**Major Learning Outcomes :** Domain Knowledge & Soft Skills

**Brief Description of working environment, expectations from the company :** Professional behaviour, Ownership of work and drive to learn about the sector

**Academic courses relevant to the project :** Fundamentals of Finance and Accounting, International Business.

## Name : Rahul Singh (2015A2PS0856P)

**Student Write-up**

**Short Summary of work done during PS-II :** The projects allotted to me were concentrated on but not limited to capital goods and infrastructure development in industrial parks. You need good business acumen and sector knowledge to excel at work place.

**Tool used (Development tools - H/w, S/w) :** EMIS database, Forrester research and Bloomberg, MS office

**Objectives of the project :** Development of industrial corridor with world class features

**Major Learning Outcomes :** Business operations, strategic planning,dealing with clients, etc.

### Name : Santosh Das (2015A3PS0281P)

**Student Write-up**

**Short Summary of work done during PS-II :** The assignments given are based on Standards and labelling of electrical appliances as part of energy efficiency initiatives by the government of various countries. The main assignment was the development of design specification for metering equipment to be used in a household energy consumption survey in Ghana. This was followed by the development of an appliance ownership questionnaire for the same survey. Apart from these, market assessment of deep freezer and electric iron for India was completed as research assignments at PwC.

**Tool used (Development tools - H/w, S/w) :** Word, Excel & PowerPoint

**Objectives of the project :** Development of PwC standard deliverables (reports, ppt, etc) for the respective assignments.

**Major Learning Outcomes :** Developed understanding of the approach and methodology of consultancy firms. Gained knowledge about various energy efficiency projects, policies and frameworks undertaken by countries.

**Brief Description of working environment, expectations from the company :** Highly professional work environment; ideal for getting a fair idea about the consulting industry; type of work and responsibility offered depends on the manager of your team; Client interactions and work related travel depends on the project of your team; Variety of work is less; PPO opportunities depends on the requirement in your team and whether or not you have higher studies plans; CTC offered is 9.6 LPA.

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## *PS-II Station: PricewaterhouseCoopers, Hyderabad*

## Faculty

### Name : Sandeep Kayastha

## Student

## Name : K.Milind Mohan Rao (2015A2PS0588H)

**Student Write-up**

**Short Summary of work done during PS-II :** The essential characteristics with respect to development of an industrial park are studied, which includes case studies from India and abroad. The project cost assessment for a sample industrial park is undertaken,based on existing benchmarking, with a special focus on textile parks. This followed by construction phasing of different infrastructure components in the industrial park and understanding their correlation with offtake rate of plots

**Objectives of the project :** The main objective of the project is to promote the use of phased approach in the case of big projects

**Major Learning Outcomes :** Efficient communication skills
Report writing skills
Proficiency in MS-Office
Benchmarking study

**Academic courses relevant to the project :** Water and wastewater Management

## Name : Ananth Chandrasekhar (2015A3PS0213G)

**Student Write-up**

**Short Summary of work done during PS-II :** Did a market analysis of Offshore Wind in India and Abroad

**Tool used (Development tools - H/w, S/w) :** Excel, Word, Powerpoint

**Objectives of the project :** To analyse the market for offshore wind both in India and abroad ahead of India's first Offshore wind tender

**Major Learning Outcomes :** Knowledge about Offshore Wind, policy and regulatory measures, understanding of the market and it's drivers and bottlenecks

**Brief Description of working environment, expectations from the company :** An excellent working environment with friendly colleagues and helpful managers.

## Name : Aditya Kumar Jha (2015A3PS0173G)

**Student Write-up**

**Short Summary of work done during PS-II :** Working on various live projects in renewable sector.

**Tool used (Development tools - H/w, S/w) :** MS Suite

**Objectives of the project :** Restructuring stressed Power sector assets based on the new insolvency codes and learning from other sectors

**Major Learning Outcomes :** Proficiency in Ofiice suite, Due diligence,Convention and renewable electricity sector :Policies and Practises

**Academic courses relevant to the project :** Securities Analysis and Portfolio Management (SAPM)

### Name : Sanyukta Singhal (2014B1A20655P)

**Student Write-up**

**Short Summary of work done during PS-II :** Working on the planning of urban infrastructure projects like Kochi-Bangalore Industrial Corridor, Assam development project

**Tool used (Development tools - H/w, S/w) :** Excel

**Objectives of the project :** To predict the corridor volume to plan the rapid transit system in Chennai

**Major Learning Outcomes :** Developing a statistical model for predicting corridor volume

**Academic courses relevant to the project :** CPT, FinMan

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## *PS-II Station: Quantiphi*

## Faculty

### Name : Mrs. Uma M. Natarajan

# Student

## Name : Mansi Pandey

**Student Write-up**

**Short Summary of work done during PS-II :** Computer vision, deep learning

**Tool used (Development tools - H/w, S/w) :** Python, tensorflow, Google cloud

**Objectives of the project :** Object detection using computer vision

**Major Learning Outcomes :** Latest computer vision techniques and algorithms**.**

**Brief Description of working environment, expectations from the company :** Interesting work, good learning environment

**Academic courses relevant to the project :** Machine learning, neural networks, image processing

## Name : Sumit Godara (2014B5A30858P)

**Student Write-up**

**Short Summary of work done during PS-II :** I was asked to build a Recommendation System which have an accuracy of more than 98%.

**Tool used (Development tools - H/w, S/w) :** Machine Learning

**Objectives of the project :** To recommend client the products to be put in a vending machine so as to increase their sale.

**Major Learning Outcomes :** Basics of Machine Learning, Python, Data Science

**Brief Description of working environment, expectations from the company :** Working environment is casual, you got to maintain the interest in your work, otherwise it's just routine. And since it's a startup, work from you is expected, so a great learning opportunity for those who are interested in the field of ML.

**Academic courses relevant to the project :** Machine Learning

## Name : Sourabh Sunil Halleppanavar (201B1A80721G)

**Student Write-up**

**Short Summary of work done during PS-II :** My work was majorly related to deep learning, with building of automation framework in keras, and detection of faces' age and gender from the given image, and implementing an object tracker, to track the moving object, frame to frame.

**Tool used (Development tools - H/w, S/w) :** Keras, Tensorflow

**Objectives of the project :** Implementing client usecases using deep learning

**Major Learning Outcomes :** Good exposure deep learning, and its implementation

**Academic courses relevant to the project :** Neural networks and fuzzy logic

## Name : Harshil choudhry

**Student Write-up**

**Short Summary of work done during PS-II :** The work is quite challenging and the organization is fast paced.

**Tool used (Development tools - H/w, S/w) :** Python, tensor flow

**Objectives of the project :** Make a chatbot

**Major Learning Outcomes :** Deep learning

**Details of Papers/patents :** Gec paper by Facebook melno park

**Brief Description of working environment, expectations from the company :** Startup culture, demanding work

**Academic courses relevant to the project :** Machine learning.

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# *PS-II Station: Qubole*

# Faculty

## Name : Uma Maheshwari N

# Student

## Name : Akhilesh Ram (2014B3A70412G)

**Student Write-up**

**Short Summary of work done during PS-II :** Integration testing of new product offering based on Presto big data engine in a dockerised environment. Presto code is all in Java. Another task was modifying open source Tempto testbench for Presto to mimic Qubole's use case of writing results to S3. Additionally, I was tasked with creating reports on notebooks on important raw query information as well as performance metrics. This was done using Spark with Scala and Presto. Smaller tasks involoved automating a test for a new feature in production and modifying a query event listener to upload relevant data to S3 in a periodic manner.

**Tool used (Development tools - H/w, S/w) :** Java, Python, Presto, Hive, Spark, Scala, Docker, Maven, IntelliJ Idea

**Objectives of the project :** Gain requisite knowledge of code base, programming languages, frameworks to complete tasks

**Major Learning Outcomes :** Handling large code base with editor and industry Git workflow, Hive DDL, Presto and Spark Scala experience, exposure to S3

**Academic courses relevant to the project :** Databases, OOP

## Name : P Sudarshan (2014B3A70749H)

**Student Write-up**

**Tool used (Development tools - H/w, S/w) :** Ember, Ruby on Rails, Git

**Objectives of the project :** Development of Features for a New Platform

**Major Learning Outcomes :** Ember, Ruby on Rails

**Academic courses relevant to the project :** OOP, DSA

## Name : Vadaga Ananyo Rao (2014B5A70910G )

**Student Write-up**

**Short Summary of work done during PS-II :** My project was on Apache Hadoop, which is a cloud cluster management software. As part of my project, i worked on implementing a simulator for Hadoop YARN. This was done to check offline the improvements in Hadoop logic. Later I worked on scheduling algorithms for hadoop jobs and made a business case proposal for the same.

**Tool used (Development tools - H/w, S/w) :** Apache Maven, Apache Hadoop, git, IntelliJ

**Objectives of the project :** Improvement of scheduling algorithm of Hadoop YARN

**Major Learning Outcomes :** Cloud cluster management software functioning, Forming business case and execution of a technical project idea

**Brief Description of working environment, expectations from the company :** Hadoop team expects a good experience with Java. Also, a detailed knowledge of algorithms and drive to independently take charge and execute projects will be strong tools to learn more from the Hadoop team.

**Academic courses relevant to the project :** OOP, DSA, DBMS, CompArc

## Name : Saurabh Shekhar

**Student Write-up**

**Short Summary of work done during PS-II :** Got to work on several features and languages including python, java, ruby, javascript, advanced shell scripting etc. Also, got familiarized with the chef infrastructural framework.

**Tool used (Development tools - H/w, S/w) :** Chef, Jenkins, git, bitbucket, postman, aws sdks, newman, nailgun, hadoop, signalFx.

**Objectives of the project :** To reduce machine bringup time in aws to support autoscaling

**Major Learning Outcomes :** Got familiarized with the aws and azure clouds and worked on several features including hadoop, nailgun etc. Worked on several things. To name a few, worked to bring down machine bringup time in cloud-premises so

that autoscaling can be smooth and customer experience can be enhanced. Besides, worked on aws-java sdk libraries, tunnels, several languages. Learnt ruby on rails from scratch. Got to work with hadoop,hive and spark clusters and their features that with very recent technological advancements.

**Brief Description of working environment, expectations from the company :** A very friendly and progressive environment. At no time, one feels like lost, u always get guidance when you seek (IT DOESN'T MEAN FOR EVERYTHING JUST APPROACH THEM. they won't mind, but, it's better if u struggle enough first). Furthermore, perks are like unlimited. Unlimited leaves, chill office timings, all you need to do is get your work done. That's it!

**Academic courses relevant to the project :** Nothing as such. It would be good if you know Operating Systems (bit idea about networking and all). Nonetheless, you can learn everything when u are subjected to!

## Name : Saniket More (2014B4A70515P)

### Student Write-up

**Short Summary of work done during PS-II :** First major project was to find breakpoint of various components of qubole architecture. Before that, we didn't know what's bottleneck in architecture. After this analysis, we understood breakpoint of our system which will help us now to autoscale in peak times. Another project was - To analyze data generated at qubole platform every day. Generated graphs which will be sent to entire organization in form of report every morning via email which will be helpful in deriving meaningful insights. One example of such graph is - distribution of total commands arcading to command type. it will help us understand which command type contributes more to the load. The various latencies graph will tell us which part is taking more time to run and hence corrective actions can be easily taken. Another notebook has been written which keeps track of trends in last month which will tell us how customers are changing. Another major project was to retire DDJ tier from architecture. It saved millions of dollars for qubole.

**Tool used (Development tools - H/w, S/w) :** Amazon aws, zeppelin, sql, locust, postman

**Objectives of the project :** To understand qubole architecture in depth, benchmark it, retire one module from it and do data analysis on generate data

**Major Learning Outcomes :** Amazon aws, Zeppelin notebook, python, ruby, java, hive-sql

**Brief Description of working environment, expectations from the company :** Work culture is very good. Interns directly get cutting edge projects. Large proportion of employees are in their 20s. So very informal and friendly

mentors. No in-time, out-time. Only thing that matters is you deliver assigned work.

**Academic courses relevant to the project :** DSA, OOP, Basic data science

### Name : Aditya Shah (2014B4A70715P)

**Student Write-up**

**Short Summary of work done during PS-II :** I worked in Hive Team. Hive is a data warehouse infrastructure tool to process structured data in Hadoop. It summarizes Big Data, and makes querying and analyzing easy. Initially Hive was developed by Founders of Qubole at Facebook, later the Apache Software Foundation took it up and developed it further as an open source under the name Apache Hive. Qubole maintains its own internal repository of the project with additional optimisations and support for auto scalable clusters. The tasks that I had been assigned were mainly of the objective to understand the different aspects of the project, modify existing features and add to the existing features to enhance the product. Two major projects I worked upon were improving tez mapper estimation considering auto-scaling and Eventual Consistency check in Hive.

**Tool used (Development tools - H/w, S/w) :** git, jenkins, hadoop, hive

**Objectives of the project :** Developing and Contributing to Qubole Hive

**Major Learning Outcomes :** These projects have familiarized me with the internal tools and functioning of QDS as well as helped me understand the workflow of Qubole Hive and it's various features.

**Brief Description of working environment, expectations from the company :** The company work environment is good. People were helpful through out. Projects are interesting and learning curve is steep. Overall a good learning opportunity with very open and balanced environment.

**Academic courses relevant to the project :** DataBase Management System, Object Oriented Programming, Computer Networks, Operation System, Data Structures and Algorithms

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## *PS-II Station: RBJ Technologies , Hyderabad*

## Faculty

## Name : Prof Sandeep Kayastha

# Student

## Name : Pranay Pandey (2015A1PS0665H)

**Student Write-up**

**Short Summary of work done during PS-II :** Initially , the work was market research and competitor research for one of the upcoming products of the company . We explored new geographies where the products could be launched and which would be financially viable for the company . I also did 'User Experience Research' for one of the upcoming products of the company . Then , I worked in the Marketing Department of the company . There , the major part of my work was to improve the Search Engine Optimisation of the company's website . I explored and executed numerous strategies for the same .

**Tool used (Development tools - H/w, S/w) :** Google Suite

**Objectives of the project :** Improve SEO of Website , Improve UX/UI of product

**Major Learning Outcomes :** Improved Google Ranking of Website , Improved UI of product

**Academic courses relevant to the project :** Business Analysis and Valuation

## Name : Monark Shrimal (2015A1PS0727P)

**Student Write-up**

**Short Summary of work done during PS-II :** Market Research, New Product Development, Design, Testing, Improvement in the productivity and efficiency of the product. All were included in the project work. Objectives for the 2 projects were to i. Analyze product features & optimize time-cost parameters for Cloud Rendering solution MAGIK RENDER and suggest a feasible Business Model and ii. Define Strategies, Functionalities & User Stories for efficient product management of 3D Modelling solution SLATE and prioritize features for alpha deployment. These were the two project objectives. Cloud rendering is affected by factors that include the 3D model file settings. The 1st project aimed at optimizing variables based on cloud to help reduce render time & cost for each job uploaded via the MAGIK RENDER platform. The 2nd project SLATE allows user to create basic floor plans and visualize the 3D space in real time.

**Tool used (Development tools - H/w, S/w) :** Excel Basics, 3DS MAX, VRAY

**Objectives of the project :** Business Analytics, Product Management & QA Testing

**Major Learning Outcomes :** Cloud Technology, VFX, CGI & Animation, 3D Modelling in Architecture & Interior Design Industry**.**

## Name : Kavyansh (2015A1PS0769H)

**Student Write-up**

**Short Summary of work done during PS-II :** Go-to-Market plan supporting Foyr to open up the Dutch B2B market to promote and sell products and services for Architect & Designers and Builders.

**Tool used (Development tools - H/w, S/w) :** MS Office

**Objectives of the project :** The process and planning for market entry in the Netherlands.

**Major Learning Outcomes :** Competitive analysis, market research, analytics

**Brief Description of working environment, expectations from the company :** Initial work involved market research for various products of the company. We explored new geographies where the products could be launched and which would be financially viable for the company. The major work was done on market research, first started with Srilanka and Bangladesh and later on Netherlands. Competitive analysis of the above countries and helped in capturing the market. Go-to-Market plan supporting the company to open up the Dutch B2B market to promote and sell products and services for Architect & Designers and Builders. Also managed many events in the company and made them memorable.

**Academic courses relevant to the project :** FOFA, DRM, SAPM, FM

## Name : Akshansh Sharma (2015A1PS0548P)

**Student Write-up**

**Short Summary of work done during PS-II :** Initial work involved market research for various products of the company. Then major work was done on one of its products which aims to provide cloud rendering solutions to various interior designers and architects who use 3D visualization technology. The work focused on

testing, analysis and optimization of the product. Doing different POCs and competitive analysis to improve performance so as to make a feasible business model for the product.
Nature of work done:
Research+New Product Development+Design+Testing+Improvement in the productivity and efficiency of the product & services

**Tool used (Development tools - H/w, S/w) :** 3DS Max, MS-Excel, MS-Powerpoint

**Objectives of the project :** Testing, analysis and optimization of the product

**Major Learning Outcomes :** Market research, cloud computing technology, 3D visualization, VFX

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## *PS-II Station: Reflexis, Pune*

## Faculty

### Name : Vijaylaxmi Anand

## Student

### Name : Siddharth Shenoy (2014B4A80478G)

**Student Write-up**

**Short Summary of work done during PS-II :** Worked on both development and bug fixes as part of EMEA development team. Development was mainly backend using java,mySql,Spring etc while front end was a mix of technologies like JavaScript,Html,CSS,etc

**Tool used (Development tools - H/w, S/w) :** Java,MySQL, JavaScript, HTML, CSS, Spring, Angular JS,My Batis,DHTMLX

**Objectives of the project :** To create a working delta function for core product , to create a full working HR management system and Bug fixes for core product

**Major Learning Outcomes :** The technologies used were never used by me . I got to learn all of them and also be a core part of team.

**Brief Description of working environment, expectations from the company :** Working environment is great , very good company for starters but massively underpay their employees. The amount of hard work and time you are required is not worth the final outcome. Great as a PS but wouldn't consider for job

**Academic courses relevant to the project :** OOP(CS)

## Name : Hemant Kumar

**Student Write-up**

**Short Summary of work done during PS-II :** Work on Selenium Testing of Web Product of the company

**Tool used (Development tools - H/w, S/w) :** Selenium

**Objectives of the project :** Complete Test Cases

**Major Learning Outcomes :** Java, Selenium

**Academic courses relevant to the project :** OOP

## Name : Utkarsh Sirpurkar

**Student Write-up**

**Short Summary of work done during PS-II :** Web development using React.js

**Tool used (Development tools - H/w, S/w) :** React.js/Mongodb/Java

**Objectives of the project :** Prepare a custom product for client

**Major Learning Outcomes :** Learnt front-end development

## Name : Swarit Kohli (2014B5A40607G)

**Student Write-up**

**Short Summary of work done during PS-II :** I was in the Analytics web development team. We were to design a web application based on some html reference, and specifications given by the client. We had to use ReactJS to make the

web page fully functional and interactive, such that even in the UI, the user is able to manipulate data in order to see it selectively, or call it at his demand.
All of us were given various tasks pertaining to the same, and the major back end part was not done by our team. However, fetching data from back end to front end and linkin ghte project was also a part of the work we did here.

**Tool used (Development tools - H/w, S/w) :** ReactJS, ES6 Javscript, Java, Spring,

**Objectives of the project :** To build the front end of a web application using ReactJS

**Major Learning Outcomes :** ReactJS, Redux, Javascript, Java, Spring,

## Name : Aman Agrawal (2015A8PS0491G)

**Student Write-up**

**Short Summary of work done during PS-II :** Training project: Full stack development of a web application to get the jist of how everything works and whats happening, so that the actual work later on is easier to understand

QA Scripting: To test Reflexis' products. Instead of manual testing of the web application we designed and wrote scripts in Java and JavaScript using Selenium and TestNG among other tools to do the clicking and typing for the testers and then auto generating a bug report.

**Tool used (Development tools - H/w, S/w) :** Java and JavaScript using Selenium and TestNG among other tools

**Objectives of the project :** To automate testing: make it more accurate and more than 20 times faster

**Major Learning Outcomes :** Learned to use new software tools and got familiarised with full stack development of products.

**Brief Description of working environment, expectations from the company :** The working environment is peaceful and calm with not much stress except during launch/releases (as far as i have heard). Not exciting

**Academic courses relevant to the project :** Object oriented programming.

## Name : Subhaprada Chand (2014B4A30655H)

**Student Write-up**

**Short Summary of work done during PS-II :** Worked as a part of the pre-forecasting group. Day-to-day work involved full-stack development using angularJS for the frontend and Spring MVC for the back-end.

**Tool used (Development tools - H/w, S/w) :** Java, AngularJs, Eclipse, SVN, Aqua Data Studio

**Objectives of the project :** Learning full-stack development

**Major Learning Outcomes :** Learnt about working in a full-stack software team. Since there were no special projects for interns, we were part of the development team and worked with them.

**Brief Description of working environment, expectations from the company :** Working environment is good. You are expected to work independently but whenever you need support, mentors are there to help.

**Academic courses relevant to the project :** Object Oriented Programming, Introduction to Software Development

## Name : Kunal Choukse (2015A8PS0520G)

**Student Write-up**

**Short Summary of work done during PS-II :** The training involved implementation of application for a WorkForce Management and Scheduling System developed by Reflexis. Tasks allotted to me included making 2 utilities, namely SQL Query Handler and Lang-Mapper. After completion of the utilities I was allotted pages to be adapted from the old roster module using new technologies. As a training project I also developed a full stack application, Pizza Delivery System which used technologies like AngularJS, Java, SpringREST and SQL.

**Tool used (Development tools - H/w, S/w) :** Java
Angular
Spring
DB2
MyBatis
HTML & CSS

**Objectives of the project :** Completing the RWS app.

**Major Learning Outcomes :** By working on the given project, I got an exposure to a lot of new technologies, with which I had not worked before, and the training helped

me gain some experience in all of the software and frameworks being used for web application development. Most of the topics that they trained us in, I haven't read them before. So the overall experience of the tenure of the training was a very helpful one for me in order to know more about the nature of the work in an IT firm and what kind of skillset I need to develop in order to prepare for my future jobs and internships in the field. The number of technologies learnt in the small period of two months will surely help me a lot when I am trying to apply those concepts to my actual projects. After the training, I was working on the main app for Reflexis, which is not usually what a company lets interns work on. I wasn't side-tracked, and so we had proper deadlines and it was invigorating and a new experience.

**Brief Description of working environment, expectations from the company :** It was nice. The people were nice. The boss, everybody said he is strict and difficult to work with, but I found him pleasant and motivating. The package should have been higher, according to me and the other interns because the work was draining. That is all. All in all a good company to start your career with as you get to learn a lot but the pay is low. Loved the working environment.

**Academic courses relevant to the project :** OOP

## Name : Mehul Kaushik (2014B2A80964G)

**Student Write-up**

**Short Summary of work done during PS-II :** Work was good. Full stack development : DB2 - Java - AngularJS.
Java work is great. Angular work was too hectic but I learnt alot.

**Tool used (Development tools - H/w, S/w) :** Eclipse, Aqua Studio

**Objectives of the project :** Full Stack development of a complete Module

**Major Learning Outcomes :** Production ready coding practices

**Brief Description of working environment, expectations from the company :** Team is good.

**Academic courses relevant to the project :** DSA, OOP

## Name : Greenoe George (2015A3PS0293G)

**Student Write-up**

**Short Summary of work done during PS-II :** Bug fixes in the company's

product and development of DB script conversion tool

**Tool used (Development tools - H/w, S/w) :** Eclipse, Chrome Developer Tools, SVN

**Objectives of the project :** Develop a DB script conversion tool

**Major Learning Outcomes :** OOPs concepts, Angular, Spring framework, SQL

**Brief Description of working environment, expectations from the company :** Software development, bug fixes and design of web pages of the product

**Academic courses relevant to the project :** OOPs, Computer Programming, DSA

## Name : Kunal Sharma (2014B2A10309P)

**Student Write-up**

**Short Summary of work done during PS-II :** First part was the training program which only happens for odd semester students since they teach you web development with new recruits. The second part was working as a part of the kernel team where I had to fix issues and extend the functionality of kernel product.

**Tool used (Development tools - H/w, S/w) :** JAVA, Spring MVC, Angular JS

**Objectives of the project :** Maintainence and extending the functionality of kernel product

**Major Learning Outcomes :** Improvement in programming skills

**Brief Description of working environment, expectations from the company :** It is a good company. The employees are helpful and you get to learn a lot of stuff.

**Academic courses relevant to the project :** OOP

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# *PS-II Station: Reliance Jio*

# Faculty

## Name : Mrs Preeti NG

# Student

## Name : Nipun Vats (2014B1A10470P)

**Student Write-up**

**Short Summary of work done during PS-II :** Outlier detection using time series data in Real Time Response System (RTRS) in which the count of messages (transactions) in a minute is obtained and compared with a predefined threshold. The counts which are beyond the threshold limits are selected as Outliers and a flag is raised for further analysis and helps RTRS to detect any failures in data flow before the operations team to act in real time.

**Tool used (Development tools - H/w, S/w) :** Spark, Ignite, Scala, Kafka

**Objectives of the project :** To design an Outlier Detection model which maintains immediate consistency by monitoring and analysing data patterns in real-time by detecting delicate and unexpected changes whose root causes need investigation.

**Major Learning Outcomes :** Building real time response systems

**Academic courses relevant to the project :** Machine Learning

## Name : SATYAM KUMAR SINGH

**Student Write-up**

**Short Summary of work done during PS-II :** Supposed to build a repository to store ML models.

**Tool used (Development tools - H/w, S/w) :** JavaScript, Thrift

**Objectives of the project :** Add functionality of A/B testing to the project.

**Major Learning Outcomes :** Understanding codes better.

**Brief Description of working environment, expectations from the company :** I was placed under Couture.AI, a start-up under Reliance Jio. The mentor was not at all helpful. He himself lacked the complete knowledge of the project. Whenever approached for doubt, his only answer was "Goggle it".

**Academic courses relevant to the project :** OOP, ML

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## *PS-II Station: Reportgarden Technologies*

## Faculty

### Name : Radhika Bulla

## Student

### Name : G Nikhitha (2014B1A10787H)

**Student Write-up**

**Short Summary of work done during PS-II :** Quality Assurance

**Tool used (Development tools - H/w, S/w) :**
Jira,GitHub,Selenium,Capybera,Atom,Sublime,Eclipse,TestNg,CircleCi

**Objectives of the project :** Maintaining Technical Quality of the App through testing and automation of testing

**Major Learning Outcomes :** Ruby on Rails ,Java and selenium

### Name : Ankit Anand (2014B5A30672G)

**Student Write-up**

**Short Summary of work done during PS-II :** I worked on two different product ClientFlow.com and Tribelocal.com. I worked with the product and marketing teams of both the product.

**Tool used (Development tools - H/w, S/w) :** Google Adwords, Various SEO tools

**Objectives of the project :** To expand the customer base of ClientFlow.com and Tribelocal.com

**Major Learning Outcomes :** I learnt a lot about digital marketing, both SEO and SEM and different ways of analyzing existing data to make better future decisions. Working closely with Product Manager, I learnt what can be expected of a Product Manager, and it is something I would like to pursue further.

**Brief Description of working environment, expectations from the company :** Working environment is chill. You will learn a lot if you are allotted tech team (QA team) or product teams, not so much if you are allotted the marketing team. If you are allotted marketing team, you will have a lot of spare time and you can study for yourself. But recently, company was acquired by TapClicks, so there might be a lot of changes for the upcoming batches, and our experience in the office may not be relevant.

## Name : BHARATH KUMAR DEVIREDDY

**Student Write-up**

**Short Summary of work done during PS-II :** Checking whether an API is giving required data or not.

**Tool used (Development tools - H/w, S/w) :** Postman

**Objectives of the project :** Adding integrations into reportgarden tool.

**Major Learning Outcomes :** basic about ReST API , SQL , Ruby

**Brief Description of working environment, expectations from the company :** Work , life balance is great and people are friendly

**Academic courses relevant to the project :** OOPS

## Name : Naveen Kumar G (2015A4PS0365P)

**Student Write-up**

**Short Summary of work done during PS-II :** Qualitative and Assurance Engineer, have to test Web Application(Ruby On Rails) manually and write

Automation Scripts. However the company has been acquired by an MNC(TapClicks), which is based on Php and automation is written java.

**Tool used (Development tools - H/w, S/w) :** Selenium, jira, Ruby, Ruby on Rails

**Objectives of the project :** make sure customer faces no issues while using the application

**Details of Papers/patents :** there was no project , we were assigned a responsibility and contribute to codeBase of the Company

**Brief Description of working environment, expectations from the company : Its** a bitsian startup and you can find a lot of bitsians working there. The people are the best thing about this. They come forward to help you and always encourage to learn. But they don't assign you any project , you have come up with that and people are always there when you are stuck.

**Academic courses relevant to the project :** Operating Systems, OOP , DBMS, DSA

## Name : P Rohan (2014B2A10907H)

### Student Write-up

**Short Summary of work done during PS-II :** I was asked to complete a training course in Google Adwords, Analytics and digital marketing in other popular websites like Twitter, Pinterest, Instagram etc. I was also asked to do a competitor analysis which involved researching about the different market competitors to ReportGarden and analyzing and detailing their advantages and disadvantages to ensure ReportGarden could compete and excel in its field.

**Tool used (Development tools - H/w, S/w) :** Excel, SQL.

**Major Learning Outcomes : I** learnt the basics of digital marketing and how a B2C company operates.

**Brief Description of working environment, expectations from the company :** The working environment is professional and chill. There are plenty of Bitsians in the company who are always up for a conversation. As are the other employees. People are friendly, helpful and encouraging. There is no pressure as such with respect to the dressing code or the timings. We were motivated to pursue our own interests as well as to complete the tasks they've provided. Work never left office and all in all it was a very positive experience.

# *PS-II Station: RIVIGO*

## Faculty

### Name : Ashish Narang

## Student

### Name : Komal Agarwal (2015A3PS0227P)

**Student Write-up**

**Short Summary of work done during PS-II :** Full stack development mostly backend using java and spring frameworks

**Tool used (Development tools - H/w, S/w) :** Java,Spring, React,Redux

**Objectives of the project :** Developing various features for the company to improve overall efficiency of pre existing system.My work mainly involved backend development but i alaso worked on developing a few modular components on redux for the UI

**Major Learning Outcomes :** Learnt about various new technologies and frameworks.Worked on spring and hibernate frameworks and data visualisation tools including superset and periscope. Developed an understanding of frontend development as well using tools like react and redux.

**Academic courses relevant to the project : Object** Oriented Programming, Database Management

### Name : Samarth Sharma (2014B2A30156P)

**Student Write-up**

**Short Summary of work done during PS-II :** I have worked on JavaScript React and reduce(which is a state management library).Most of my projects here have been around frontend. Apart form this I have also worked on Google and Mapbox maps coupled with turf and leaflet.

**Tool used (Development tools - H/w, S/w) :** JavaScript React and redux

**Objectives of the project :** To learn frontend development

**Major Learning Outcomes :** Got to know about organization structure and how development is carried out in frontend

**Brief Description of working environment, expectations from the company :** Very good hands on learning as major projects were assigned to me

**Academic courses relevant to the project :** OOP

## Name : Vipul Singhal (2014B4A30733P)

**Student Write-up**

**Short Summary of work done during PS-II :** My work involved development of REST APIs using Spring and Hibernate framework. Beginning with understanding the product requirements, I had to prepare HLD and LLD for the features, then start implementing these features. In this process, I developed a good understanding of OOP concepts and different database systems.

**Tool used (Development tools - H/w, S/w) :** IntelliJ Idea, Spring, Hibernate Framework, AWS, MySQL, MongoDB and Redis

**Objectives of the project :** Providing new features and improving existing ones to improve truck suppliers experience on RIVIGO Fleet app

**Major Learning Outcomes :** Good coding practices, better understanding of OOP concepts, writing industry level code and experience with latest technologies.

**Brief Description of working environment, expectations from the company :** Rivigo, being a start-up, has a brilliant scope for learning and executing new ideas. People working at the organisation are extremely technically competent and there was a lot to learn from them. But depending upon the project there might be hard deadlines. Overall, an intense workplace with fast-paced learning.

**Academic courses relevant to the project :** Object Oriented Programming, Data Structures and Algorithms, DBMS

# *PS-II Station: Samsung Bangalore*

## Faculty

### Name : Anita Ramachandran

## Student

### Name : Harsh Bansal (2015A7PS0075P)

**Student Write-up**

**Short Summary of work done during PS-II :** Studied technologies used in Automatic Speech Recognition.
Learned about various models like RNNs, N-gram, Vector Embeddings(Word2Vec, Bag of Words), SNMLM...

**Tool used (Development tools - H/w, S/w) :** Python, SRILM, pycharm, C++, eclipse

**Objectives of the project :** Corpus enhancement, SNMLM model implemention

**Major Learning Outcomes :** Working knowledge of NLP, ASR

**Brief Description of working environment, expectations from the company :** Highly permissive and stress free working environment with a lot of people always ready to help.

**Academic courses relevant to the project :** Machine Learning

### Name : Rajat Pandey (2014B1A30245P)

**Student Write-up**

**Short Summary of work done during PS-II :** Currently major work focuses on developing 5G model

**Tool used (Development tools - H/w, S/w) :** C language commercial coding on eclipse

**Objectives of the project :** Developing 5g model

**Major Learning Outcomes :** Currently debugging work is going on

**Academic courses relevant to the project :** Fibre optics, digital signal processing

## Name : Kartik Kulgod (2015A3PS0266G)

**Student Write-up**

**Short Summary of work done during PS-II :** Verification of LTE features using Simulator

**Tool used (Development tools - H/w, S/w) :** C, Python

**Objectives of the project :** To test software running on processor for errors using Simulator before being released to.

**Academic courses relevant to the project :** Computer programming

## Name : Shubham Gupta

**Student Write-up**

**Short Summary of work done during PS-II :** Developed a KPI Analysis tool for statistical and correlation analysis of data from various network operators. It also included some ML/AI features for anomaly detection.

**Tool used (Development tools - H/w, S/w) :** R language, Selenium, RStudio

**Objectives of the project :** Development of the key features of KPI Analysis Tool

**Major Learning Outcomes :** Team work, proficiency in R Shiny, Selenium

**Brief Description of working environment, expectations from the company :** Good place to work. But projects are alloted randomly. Also, more than 50% of students don't even get any work. I was lucky enough to get some good work.

## Name : Utkarsh Tiwari (2014B4AA0929H)

**Student Write-up**

**Short Summary of work done during PS-II :** Training, testing and improving the accuracy of the 'Attention based RNN model for joint intent detection and slot filling' using the data set provided by the voice assistant.

**Tool used (Development tools - H/w, S/w) :** Python, Tensorflow

**Objectives of the project :** Training, testing and improving the accuracy of the model

**Major Learning Outcomes :** Natural Language Understanding using Python and Tensorflow

**Brief Description of working environment, expectations from the company :** Project was great. Got to work in the field of NLU, and in the process studied Machine Learning, Deep Learning. The mentors, the manager, and the employees were very supportive and provided all the help necessary to accomplish the task. The only downside is that you have to complete 9hrs/day even if you don't have work.

**Academic courses relevant to the project :** Machine Learning, Artificial Intelligence, Object Oriented Programming

## Name : Dhruv (2014B4AA0687H)

**Student Write-up**

**Tool used (Development tools - H/w, S/w) :** Microsoft visual studio, Android studio, open cv, opengl

**Objectives of the project :** Embedded Realization of Point Cloud Compression

**Major Learning Outcomes :** Learnt the whole compression pipeline

## Name : P V Nikhilanj (2015AAPS0190H)

**Student Write-up**

**Short Summary of work done during PS-II :** Achieved state-of-the-art results on stereo depth estimation task using deep learning

**Tool used (Development tools - H/w, S/w) :** TensorFlow, Blender

**Objectives of the project :** State-of-the-art results on stereo depth estimation task using deep learning

**Major Learning Outcomes :** Learnt ML research, dataset creation, teamwork

**Details of Papers/patents :** Paper submitted in ICME 2019.

**Brief Description of working environment, expectations from the company :** The working environment is good. All the higher-ups, from VP to mentor were all very friendly, helpful and co-operative. Resources such as GPUs are abundant. Expectations from the company -- Good work, Helpful managers, good environment overall. However, getting a PPO is relatively difficult.

**Academic courses relevant to the project :** Machine Learning, Image Processing, Computer Graphics

## Name : N Raghav (2015A3PS0134G)

**Student Write-up**

**Short Summary of work done during PS-II :** Started with a basic understanding of server concepts. Used PHP and Spring for testing. Studied various tools like Postman, Fiddler and Wireshark. Understanding and implementation of DNS Proxy servers using DNSJava. Created a few test applications in Android.

**Tool used (Development tools - H/w, S/w) :** Android, PHP, Spring, Postman, Fiddler, Wireshark

**Objectives of the project :** Decrease latency and increase throughput of the network using the concept of Mobile Edge Computing

**Major Learning Outcomes :** Learnt about the working of DNS and its proxy servers. Basics in Android, PHP and Spring.

**Brief Description of working environment, expectations from the company :** The working environment was good. There's this 45 hours a week policy for employees which they're strict about. Initially it seemed a bit too much, but most students get used to it. One negative thing is the heavy bias shown towards the students from Pilani campus in terms of the CTC of the job offered.

**Academic courses relevant to the project :** Computer Networks

## Name : J Lakshmi Sravani (2015A7PS0033H)

**Student Write-up**

**Short Summary of work done during PS-II :** My project was on transfer learning. I had to implement the whole model using tensorflow graphs and sessions. It was research oriented.

**Tool used (Development tools - H/w, S/w) :** Tensorflow, python.

**Objectives of the project :** Research on the concept.

**Major Learning Outcomes :** Improvement in accuracy

**Brief Description of working environment, expectations from the company :** Team which i got allotted was very good and friendly. They work and play hard.

**Academic courses relevant to the project :** Machine Learning, Information retrieval.

## Name : Aakriti Saraf (2014B4A30927H)

**Student Write-up**

**Tool used (Development tools - H/w, S/w) :** H/w System Verilog

**Objectives of the project :** Performance Parameters

**Major Learning Outcomes :** Linux verilog magillem Gvim

**Academic courses relevant to the project :** Computer Architecture

## Name : Patlori Samaritha (2014B2A30916H)

**Student Write-up**

**Short Summary of work done during PS-II :** Wi-Fi sharing is a feature which helps sharing a Smartphone's Wi-Fi connection with other devices over Wi-Fi. This feature requires a smartphone to simultaneously act as both Wi-Fi Station and Access Point. Wi-Fi sharing involves routing of traffic at the IP protocol. As the IP layer is present in the Application processor, such traffic gets routed from the Application processor. The purpose of this project is to offload such traffic from the Application Processor to the Wi-Fi chip during Wi-Fi sharing; whenever there is no considerable user activity. This helps the Application processor to go to the low power mode and the connectivity processor will handle the routing of data between connected Wi-Fi clients and the internet.

**Tool used (Development tools - H/w, S/w) :** Eclipse, Android Debug Bridge (adb), Wireshark

**Objectives of the project :** To exclude Application processor as a functional entity for internet access in the Wi-Fi subnet (when Wi-Fi sharing feature is being used). This helps in lowering power consumption. The trigger for offload is the absence of user activity on the device.

**Major Learning Outcomes :** Revision and strengthening of technical knowledge. Learning the approach to be followed towards a technical project. Expanding coding skills. Exposure to professional world. Interactions with the experts in the field. Time management.

**Academic courses relevant to the project :** C programming, OS, Communication Networks, Microprocessors & Interfacing, Analog & Digit VLSI Design

## Name : Prathyusha Vedulla (2014B1AA0714H)

**Student Write-up**

**Short Summary of work done during PS-II :** Worked on CMOS image sensors. Image processing on verilog and hardware design of bad pixel correction module.Power reduction and optimisation of the module.

**Tool used (Development tools - H/w, S/w) :** Verilog , PRIMETIME PX

**Objectives of the project :** To improve bad pixel correction in camera modules.

**Major Learning Outcomes :** Camera sensors, Image quality improvement, power measurements in real time, rtl design, punctuality.

**Brief Description of working environment, expectations from the company :** My team was the CMOS image sensor team. The team was very dedicated to delivering on time and hence the environment was serious and demanding. I learnt a lot during the internship from the team even though my interaction was limited.

**Academic courses relevant to the project :** Computer architecture, Digital signal processing, digital design, micro processors, micro electronic circuits.

# *PS-II Station: Sattva Consulting, Bangalore*

## Faculty

### Name : Anjani Koka

## Student

### Name : Manu Priyadarshi (2015A8PS0454G)

**Student Write-up**

**Short Summary of work done during PS-II :** Conducted a detailed research and recommended sustainable changes in existing policies of largest NGO in child rights domain
Created Employer-Educator-Trainee Linkages and designed operational plan of project SelectHER.
Understand the challenges of women in the workforce and conducted ground research from India's 25 top retail stores.
Recommending relevant organizations and their projects for optimum utilization of CSR Portfolio of corporates.

**Tool used (Development tools - H/w, S/w) :** Tableau

**Objectives of the project :** Addressing complex societal challenges

**Major Learning Outcomes :** Helped organisations design and execute inclusive models that are innovative, economically viable

**Academic courses relevant to the project :** Cultural Studies, DYSOC

### Name : Shivam Monga (2015A1PS0659G)

**Student Write-up**

**Short Summary of work done during PS-II :** In initial 1 month, did secondary research on FPOs (Farmer Producing Organisation) & SHGs (Self Help Groups) & prepared a Data Grid consisting various attributes for intervention by the Organisation. Later on, shifted to Knowledge vertical of the organisation, where i assisted in "OECD DAC surveyfor Indian Private Philanthropy for Development" & "State of Everyday giving in India."

**Tool used (Development tools - H/w, S/w) :** Excel, Tableau.

**Objectives of the project :** 1. To carry out intervention program by organisation 2. To prepare a consolidated report for OECD DAC surveyfor Indian Private Philanthropy for DevelopmentDAC surveyfor Indian Private Philanthropy for Development 3. To prepare a consolidated report on "State of Everyday giving in India." to Bill & Melinda Gates and Nilekani Foundation

**Major Learning Outcomes : Major** learning outcomes were how organisations deal with large CSR money amounting to crores.

**Brief Description of working environment, expectations from the company :** The organisation is a Consulting firm handling large CSR projects of MNCs. There are various verticals, namely, Knowledge (which i was allocated to), Strategy Consulting, International, Solutions, Talent search. Knowledge Team got a lot of work for interns as an Analyst doing extensive Primary & secondary research.

**Academic courses relevant to the project :** Principal of Management.

## Name : Suvam Ganguly (2015A5PS0935P)

**Student Write-up**

**Short Summary of work done during PS-II :** My work has been end to end management and implementation of a skill enhancement training program from mobilization of the candidates to hand-holding of them. I have been actively involved with all the stakeholders, from the clients to the on ground partner organizations through regular communication as well as understanding their needs and then make actionable recommendations wherever it is required.

**Tool used (Development tools - H/w, S/w) :** MS Excel, MS Power-point

**Objectives of the project :** Skill enhancement and generation of income/livelihood

**Major Learning Outcomes :** Program management, Communication & interpersonal skills, Developing proper clarity of thoughts, Articulation of thoughts, Time management.

**Brief Description of working environment, expectations from the company :** The work environment is simply brilliant. All the people are very friendly and approachable in case of any doubt irrespective of the position in which they are in.They provide proper feedback for each and every work done.

**Academic courses relevant to the project :** Financial Management, Copy-

writing, Public Administration, Technical report writing

## Name : Parth Madan (2014B1A40787G)

### Student Write-up

**Short Summary of work done during PS-II :** Worked with the international business team on consulting assignments with social enterprises in India.
Sample projects include :
1. Sales and Marketing Strategy for an innovative farming system manufacturer in Uganda
2. Gender Assessment Study for a social enterprise in Burkina Faso
3. Mapping the Grant Landscape for a social enterprise working with small holder farmers

**Tool used (Development tools - H/w, S/w) :** Microsoft Excel, Microsoft Powerpoint, Tableau, Data Collection Tools - Collect

**Objectives of the project :** To increase the outreach and revenue of social enterprises based in Africa

**Major Learning Outcomes :** 1. Understanding of the Grant/Funding Ecosystem in Africa
2. Demographic conditions of Agriculture in Africa
3. Innovations addressing agricultural issues and ability to refine distribution channels

**Brief Description of working environment, expectations from the company :** Extremely welcoming environment, high level of ownership if you demonstrate interest and ability to work. There is a lot of diverse and interesting work happening here. Ideal for people looking to be part of the social sector

**Academic courses relevant to the project :** Dynamics of Social Change, Principles of Management

## Name : Manish (2015D2TS0990P)

### Student Write-up

**Short Summary of work done during PS-II :** Project 1: Ignitia Partnership:- We looked for organizations(Developments banks, RFPs, Social enterprises) who provide funds, grants, and awards to small-medium enterprises(SMEs) matching the requirements for ignitia.
Basically, Ignitia's focus was on the agriculture, climate, water, and gender theme. An organization must have offices/working with any other enterprises in the ignitia region. We also looked on the previous projects they have funded, what was their

funding amount and who funded them.
We collated all the data on a spreadsheet and analyzed the sheet. Finally, we have some organizations who met all the expectations of Ignitia and we would able to deliver the sheet to organizations.

**Tool used (Development tools - H/w, S/w) :** Ms-Excel, Google Slides, Canva, Google Spreadsheet

**Objectives of the project :** To deliver highly localized, accurate weather forecasts via low-cost SMSs ($0.03/day), helping small-scale farmers manage daily activities that depend on rainfall to increase crop yields

**Major Learning Outcomes :** I was able to know about how organizations work, How to present yourself in that situation.
Apart from that I also learned about the factors on which we can design the market and competitive landscape of any organization.

**Brief Description of working environment, expectations from the company :** Sattva Media and Consulting has a very good work environment. I found all the people very helpful and such a talented people. They always have good and healthy discussions over drinks and food which I like the most.
I got the opportunity to work with different teams which helped me a lot to gain organizational knowledge and also boost to my confidence.
As a day scholar, Sattva helped me a lot to have a good command on my communication skills which is also a great achievement for me.
Sattva has everything that I was expecting although it has more than that.

**Academic courses relevant to the project :** Public Administration, Development Theories

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## *PS-II Station: Skoda Auto*

### Faculty

**Name : Rambir Bhadhouriya**

### Student

**Name : Alen Babu (2015A4PS0397G)**

**Student Write-up**

**Short Summary of work done during PS-II :** Worked closely with the Aftersales field team. The entire data of the region will be handled by the intern in the department.

**Tool used (Development tools - H/w, S/w) :** MS- Office,Qlickview

**Objectives of the project :** Minimize the concerns and increase customer satisfaction

**Major Learning Outcomes :** Taste of management field.

**Academic courses relevant to the project :** SCM, Optimization

## Name : Gyandeep (2015A4PS0353P)

**Student Write-up**

**Short Summary of work done during PS-II :** Analysis of many campaigns and reports, preparation of dashboards and many other works.

**Tool used (Development tools - H/w, S/w) :** Excel tools

**Objectives of the project :** Involved in the project which they were making

**Major Learning Outcomes :** Got to know a lot about excel and many SAP softwares**.**

**Brief Description of working environment, expectations from the company :** Corporate style , lenient and working before the computer.

## Name : Akshit Makhija (2014B4A40465G)

**Student Write-up**

**Short Summary of work done during PS-II :** I worked in the Sales department at North Zone Office of SAIPL at Gurgaon. My mentor was Mr. Navneet Trehan, North India Sales Head. The main work done in the duration of PS2 was dealership management and Sales Planning/Analysis. After initial training, i was made the Area Sales Manager of Agra dealership. The work included interacting with Active prospects, making sure the dealership is handling them properly, and the Sales target is achieved. Also, i was given Project Synergy, the aim of which was lead

generation through workshops. Triggers and Barriers report was also completed through regular interaction with customers and surveys.

**Tool used (Development tools - H/w, S/w) :** Microsoft Excel, Power-Bi

**Objectives of the project :** Retail Targets and Project Synergy

**Major Learning Outcomes :** Flow of information of best practices of both departments is essential for building customer confidence in the brand.
Team working & cross functional co-ordination.

**Brief Description of working environment, expectations from the company :** The work environment is great. The office is located in gurgaon and accessible from everywhere through metro. You don't get food at the office but you can order and eat.
The office is shared by skoda and volkswagen employees with different departments.

**Academic courses relevant to the project :** Supply Chain Management, Optimization

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## *PS-II Station: Spark MInda Technical Center*

## Faculty

### Name : Ravi Reosekar

## Student

### Name : Aaditya Vikram Chandak (2013A8PS414P)

**Student Write-up**

**Short Summary of work done during PS-II :** I worked on the new junction box design project on spark minda, the aim of the project was to modernise the old hardware based junction box design to a Pcb Based design we started with the client spec sheet only, that was proceeded by a sample design to a client , which in turn was approved for further system requirement clarification and from which the the hardware requirements were created by us and then it was put into software testing and afterwards it will be put in field testing.

I also worked on design of a multivibrator model to be used in future speedometers and a flasher circuit to be used in panic devices for 2 wheelers.

**Tool used (Development tools - H/w, S/w) :** Multisim Online,Excel

**Objectives of the project :** Modernisation of current mechincal junction box to a PCB based Design

**Major Learning Outcomes :** Learned how to design and model systems and test the veracity of design not only on performance criteria but also on cost and manufacturing criteria.

**Details of Papers/patents:** designed has passed software testing stage and is to be simulated in field.

**Brief Description of working environment, expectations from the company :** the working environment was cordial and friendly, the company has excellent in house amenities in office.the company boasts of a lot of testing facilities ranging from live vehicle testing to component simulation on microelectronic scale and testing facilities on indiviual auto components. Overall i had a satisfactory experience with the organisation.

**Academic courses relevant to the project :** Electronic Devices and Analog Electronics were the most important courses from this Project.

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## *PS-II Station: Spicer India Privat Limited, Pune*

## Faculty

### Name : Dr. Sudeep kumar Pradhan

## Student

### Name : Rushabh Gangwal (2015A4PS0405P)

**Student Write-up**

**Short Summary of work done during PS-II :** Working at SIPL as an intern is quite an unique experience. This station is best suited for those who wish to pursue

core sector. This will give you an idea of how an core company works. My project at R & D department was to manage my own daily chores as an application engineer and to automate the current operation of spot welding on the existing conveyor. The automation was easy but the handling and process was a tricky part. The plant team and all the people involved helped me complete the task in hand. Through the project I was
introduced to the analytical and characterization techniques that I had just the theoretical knowledge. Now, I have the idea of the principle and working of these techniques which will surely help me in future. I would like to say that working at SIPL has left me stronger both technically and professionally. This has been an experience of a life time and has definitely made a better person.

**Tool used (Development tools - H/w, S/w) :** Robo Studio, PLM, SAP, etc

**Objectives of the project :** Puddle hole welding automation of a line

**Major Learning Outcomes :** Creativity to design a system with current line constraints

**Academic courses relevant to the project :** Robotics, Machine Design and Drawing

## Name : Pujan Vakharia (2014B5A80967G)

**Student Write-up**

**Short Summary of work done during PS-II :** Execution of propagation plan for Behavioural Competency model, Standardization of employee life-cycle procedures, Tarang Festival Management, Employee Spotlight Publication, HRMS Portal Management, AOP Data verification, Candidate interview arrangement, Analyze and propose changes in certain policies including Leave Policy and Gratuity Policy

**Tool used (Development tools - H/w, S/w) :** Excel, Photoshop

**Objectives of the project :** To understand the business process from the people management perspective, standardize specific procedures such as Employee Onboarding, across all the plants.

**Major Learning Outcomes :** Importance of Standard Operating Procedures when enforcing the board vision to the employeed

**Academic courses relevant to the project :** Principles of Management

## Name : Karan Jain (2014B5A40873P)

**Student Write-up**

**Short Summary of work done during PS-II :** Creation of SOPs for Business Development Exports Department for Kick Off and Quotation Process, aiding my mentor by providing analyzed data during his international business trips, understanding how customer customer demands are met in terms of production, cost break up of any product, commodity and forex impact on a exports involved firm.

**Tool used (Development tools - H/w, S/w) :** Microsoft Excel

**Objectives of the project :** Creatring SOPs for Business Processes

**Major Learning Outcomes :** Corporate structure and environment, VSM, need for SOPs, international trade, effect of external factors on company, etc.

## Name : Ashutosh Desai (2015A4PS0230G)

**Student Write-up**

**Short Summary of work done during PS-II :** Implementation of IOT devices on machines in two different plants. Training of all departments for their roles. Problem-solving. Creation of dashboard for senior management for real time monitoring of machines.

**Tool used (Development tools - H/w, S/w) :** Power BI, Microsoft Office

**Objectives of the project :** Digitisation of Production

**Major Learning Outcomes :** Automation in Industry, managing multiple departments and people of varying designation , corporate requirements from freshers

**Brief Description of working environment, expectations from the company :** Strictly 9 hrs of work, bus transport provided, cubicles with computer provided, interaction with board members for work , lot of HR activities

**Academic courses relevant to the project :** Robotics, AI

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# *PS-II Station: SRF Limited, Bhiwadi (Gurgaon)*

## Faculty

### Name : Dr. Samir Kale

## Student

### Name : Utsav Lalwani (2015ABPS0738P)

**Student Write-up**

**Short Summary of work done during PS-II :** Optimized the space available for the storage of the Filled and Empty Cylinders manufactured and ordered respectively by the HFC Filling Station of SRF's Bhiwadi Plant. Calculated the Mini-Max Levels associated with the demand of each of the five products filled in cylinders by the filling station. Helped in Improvising the Filling Capacity of the station.

**Tool used (Development tools - H/w, S/w) :** MS-Excel, Minitab

**Objectives of the project :** To devise such production and inventory storage levels so that the increasing demand can be catered

**Major Learning Outcomes :** Applied the studied theoretical concepts in real life problems with modifications according to the problem.

**Academic courses relevant to the project :** Supply Chain Management

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# *PS-II Station: State Street Global Advisors*

## Faculty

### Name : Krishnamurthy Bindhumadhavan

## Student

### Name : Shubham Kapoor (2014B3A80568G)

**Student Write-up**

**Short Summary of work done during PS-II :** The work at SSGA largely depends on what team you are allotted . I was allotted fixed income cash and currency research team ( FICC) . Then work mainly comprised of building data infrastructure for the team

**Tool used (Development tools - H/w, S/w) :** R , SQL , Excel

**Objectives of the project :** There was no fixed project we used to carry daily Business as usual activities

**Major Learning Outcomes :** Familarity with databases

**Academic courses relevant to the project :** Econometrics

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# *PS-II Station: SUN MOBILITY TECHNOLOGY CENTER*

## Faculty

### Name : Preeti NG

## Student

### Name : Paritosh Chaudhary (2015A1PS0800G)

**Student Write-up**

**Short Summary of work done during PS-II :** To device an online platform for employee purchase requests to be
approved by the appropriate chain of command and executed by the
Supply Chain Management team. The work was to be done using ASP.NET MVC. Other work involved computer networking, socket programming, pyhton, json programming and so on.

**Tool used (Development tools - H/w, S/w) :** Microsoft Visual Studio, Linux terminal, SQL database, Wireshark

**Objectives of the project :** To device an online platform for employee purchase

requests to be approved by the appropriate chain of command and executed by the Supply Chain Management team. A python script that mimics the working of a Temperature-Humidity Sensor for the purpose of traffic generation. Automation of uploading of configuration files of CANoE for different settings by writing a shell script. Making TIU summaries for the battery packs in use in the field tests going on in Gurugram, uploading it on a page and creating a button on Atom dashboard for the company personnel at Gurugram to enter the battery pack out times.

**Major Learning Outcomes :** Linux terminal commands, C#, SQL, Python socket programming, Json programming in python

**Brief Description of working environment, expectations from the company :** Growing startup with very hectic work schedule. But great opportunity to learn and ease into the industry.

**Academic courses relevant to the project :** Object Oriented Programming, Data Structures and Algorithms

## Name : Deshmukh Ajinkya Bhushan (2013B2A10851G)

### Student Write-up

**Short Summary of work done during PS-II :** First project involved creating a we application for employees to make purchase requests. Second one was working on code for swap stations for buses with electric batteries.

**Tool used (Development tools - H/w, S/w) :**
C#,C++,SQL,.NET,Docker,Kafka,ElasticSearch

**Objectives of the project :** The first one was to make the purchase requests as an online task. Second one was to make the bus station functional.

**Major Learning Outcomes :** Concepts of Object Oriented Programming and DevOps.

**Brief Description of working environment, expectations from the company :** The work environment is very friendly, however in certain situations it is difficult to get someone to help are people are usually busy with their own deadlines. There are projects in almost all areas and allotment is very flexible. There is immense scope for learning, although most of it has to be done by yourself. The projects are very interesting and working on live projects with products being deployed days after your work is done gives huge satisfaction.

**Academic courses relevant to the project : Object** Oriented Programming, Control Systems

## Name : GUGGILAPU MOULI SAI RAM (2015A2PS0677P)

**Student Write-up**

**Short Summary of work done during PS-II :** Mapping Of Infrastructure (Electrical and Civil) required for Electric Vehicles and Utilising Renewable Energy to Power EV. This is to provide a structure for EV charging infrastructure rollout in Urban Cities of India. This can be used to determine and understand different kinds of limitations in execution of Electrical and Civil work for setting up charging Infrastructure for Electric Vehicle.

**Tool used (Development tools - H/w, S/w) :** Geographic Information System, Auto Cad, Google Earth

**Objectives of the project :** Mapping Of Infrastructure (Electrical and Civil) required for Electric Vehicles and Utilising Renewable Energy to Power EV.

**Major Learning Outcomes :** Learned Geographic Information System, Civil Related Learnings

**Brief Description of working environment, expectations from the company :** Amicable Environment. Lots of things can be Learned

**Academic courses relevant to the project :** Structural Engineering, Power Systems

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# *PS-II Station: Swiggy*

# Faculty

## Name : Dr. Anjani Srikanth Koka

# Student

## Name : Jagrati Agrawal (2015A8PS0493P)

**Student Write-up**

**Tool used (Development tools - H/w, S/w) :** Python , Spark , SQL

**Objectives of the project :** Improve customer experience

**Major Learning Outcomes :** Working on this project has been a great learning experience for me. I have developed great understanding of data science and its potential impact on business decisions in our ongoing tenure at Swiggy.

**Academic courses relevant to the project :** Machine Learning , Data Mining , Probability and Statistics.

## Name : Sudhanshu Grover (2015A2PS0661P)

**Student Write-up**

**Short Summary of work done during PS-II :** Picked up various projects to improve the efficiency of sales team PAN India.
Work involved research and data analysis in order to make various recommendations to improve Sales Efficiency, Customer Experience, Partner Experience.

**Tool used (Development tools - H/w, S/w) :** Excel

**Objectives of the project :** Increasing the Efficiency of the Sales Team

**Major Learning Outcomes :** Understood how various Businesses work; Problem-Solving; How big decisions are made.

**Brief Description of working environment, expectations from the company :** Good people. Great office.
Any intern here wouldn't be able to find a good work-life balance, here, but the learning experience is great.

## Name : Yash Sachdev (2015A1PS0657G)

**Student Write-up**

**Tool used (Development tools - H/w, S/w) :** Excel,PowerBI, SQL

**Objectives of the project :** Hygiene Audits - Ensuring Restaurants have good hygienic Conditions

**Major Learning Outcomes :** Project Management, StakeHolder Management,

## Name : Prateek (2014B5A20827P)

### Student Write-up

**Short Summary of work done during PS-II :** Developing business ideas for Swiggy POP and taking new initiatives to see growth of product. Did analysis on the user behavior and suggested action plans which really impacted the business in a positive way.

**Tool used (Development tools - H/w, S/w) :** SQL, Advanced Excel

**Objectives of the project :** To understand and grow Swiggy POP in terms of orders and area coverage.

**Major Learning Outcomes :** Business strategies, stakeholder management, technical skills, time and people management

**Brief Description of working environment, expectations from the company :** Work environment is super awesome. People are really helpful. You can approach anybody and learn tons of things.

**Academic courses relevant to the project :** Principle of economics, any management project

## Name : Sudhanshu Grover (2015A2PS0661P)

### Student Write-up

**Short Summary of work done during PS-II :** My target was to undertake several projects to improve the sales efficiency of Swiggy On-ground City-Sales Teams.
Involved a lot of research, and then, to take the pitch any initiative, I needed to collect data and analyze it to understand if a project is really, necessary.

I undertook several projects and drove them from end-to-end.

**Tool used (Development tools - H/w, S/w) :** Excel

**Objectives of the project :** To improve the sales efficiency of Swiggy On-ground City-Sales Teams

**Major Learning Outcomes :** Data Analysis & Stake-holder Management

**Brief Description of working environment, expectations from the company :** Great working environment. Learning is encouraged.

## Name : Shubham Gupta (2015A4PS0316P)

### Student Write-up

**Short Summary of work done during PS-II : Primary** objective of my project was to increase the ad sales using various levers such as utilisation, reducing FOC amount, slot price increase etc. Also created a tracker to manage the performance of Assured ROI campaigns and a dashboard to see the HP campaigns delivery.

**Tool used (Development tools - H/w, S/w) :** Excel, SQL queries, PowerPoint

**Objectives of the project :** Increase ad sales using various levers

**Major Learning Outcomes :** Problem solving and decision making skills, advance functions of excel, matching supply with demand, performance management and actions on laggards

**Academic courses relevant to the project :** SCM

## Name : Meenakshi Sundaram (2015ABPS860P)

### Student Write-up

**Short Summary of work done during PS-II :** My intern Job Role was similar to that of Business Associate. I worked on my department projects initially based on Analytics(SQl) and Excel. Learnt how to Visualize Data, Prioritize and segment problems and solving them. Once I picked up pace and got to know about the working of my department, I was allotted a independent project wherein I had to figure out avenues for Decreasing Restaurant food preparation time. I did lots of Restaurant visits in Bangalore and zeroed in all 2-3 key levers for decreasing it and thereby delivering faster and enhancing customer experience.Once I did that study, then I had to implement them and see if it is actually reducing time in ~15 restaurants as a Pilot Project. Pilot project came out successful and the organization planned to scale it up in all high priority restaurants

Whole experience was awesome, I got to learn basic working of an organization, my strength, weakness and interests. Overall, Fairly good company with lots of responsibility and learning.

**Tool used (Development tools - H/w, S/w) :** Mostly using Excel , SQL(Dbeaver), PowerBI, Bit of R and Python

**Objectives of the project :** Levers for enhancing customer experience

**Major Learning Outcomes :** Business Intelligence, Data Visualization , Vendor Management, basics about Product Management, Analytics, Sales, Marketing and Operations

**Academic courses relevant to the project :** Technical Communication

## Name : VVS Bharadwaja

**Student Write-up**

**Short Summary of work done during PS-II :** Swiggy opened up their own private kitchen by the name bowl company and homely. Our work was to understand how to scale up the operations and increase market penetration. Parallely, we had to optimise constantly the process followed inside the kitchen. We changed it from totally manual to semi automatic and it's moving towards more automation.

**Tool used (Development tools - H/w, S/w) :** MS Excel

**Objectives of the project :** To optimise and improve the efficiency of the kitchens by reducing preparation time

**Major Learning Outcomes :** Optimising a process
Lean management
Utilising technology to reduce effort and time
Start up ecosystem

**Brief Description of working environment, expectations from the company :** The working environment is reasonably good. They can understand your needs and give you time to grow, learn and perform. The management is ready to listen to new ideas which you propose and is willing to experiment on them too. Their expections are on the dot. You cannot stretch too much from the preset time frames.

**Academic courses relevant to the project :** Principles of management
Supply chain management
Optimisation
Probability and statistics

## Name : Sanskriti Sinha (2014B2A80865G)

**Student Write-up**

**Tool used (Development tools - H/w, S/w) :** SQL, Python

**Objectives of the project :** Prediction of orders of a restaurant in a day and DE-zone clustering on the basis of batching.

**Major Learning Outcomes :** Working in Swiggy has given me a great working experience. I learnt various modelling, analytical and coding skills throughout my internship. I learnt that data-driven scientific decisions are more efficient than the intuitive ones. I used SQL and python in my project which improved my coding skills. I got hands-on experience on implementation of machine learning models in real life scenario which gave me clarity of concepts . I got to observe and understand the working supply of the organisation.

**Academic courses relevant to the project :** Machine learning, Data mining

### Name : Keerti P (2014B1AB0777P)

**Student Write-up**

**Short Summary of work done during PS-II :** Forecasting, benchmarking and cross-functional reviews

**Tool used (Development tools - H/w, S/w) :** Sql, Excel, Power BI, Tableau

**Objectives of the project :** Order projections and Competition Benchmarking

**Major Learning Outcomes :** Proficiency in Sql, conflict management

**Brief Description of working environment, expectations from the company :** Amazing learning experience.

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## *PS-II Station: Symantec Software india, Pune*

## Faculty

### Name : Sonika Rathi

# Student

## Name : Aakash Jain (2015A7PS0107P)

### Student Write-up

**Short Summary of work done during PS-II :** 1. Designed a hardware model of Intel processor pipeline to mitigate the meltdown vulnerability.
2. Developed a machine learning model using recurrent neural networks(LSTM) to identify malware based on tri-grams from disassembly of windows PE files.

**Tool used (Development tools - H/w, S/w) :** Python, Keras, scikit-learn, IDAPro

**Objectives of the project :** Malware identification using disassembly of executables

**Major Learning Outcomes :** Machine Learning, Computer architecture

**Brief Description of working environment, expectations from the company :** The company and work environment are pretty relaxed. We were given individual projects to work upon. There are not many good projects here though. The company was going through cost cutting process and we saw many of our colleagues leaving the company and so no one was offered PPO.

**Academic courses relevant to the project :** Machine Learning, NNFL, Computer Architecture, MuP

## Name : Mulay Manas Yogesh (2015A7PS0042G)

### Student Write-up

**Short Summary of work done during PS-II :** My work initially involved malware classification by modelling streams of API / system calls (by executables) as a language, and using Word2Vec to check for similarity between the API Calls. Then it was pivoted to a binary classification problem using the same streams of System Calls. The System Calls were maintained by a company DB and an RNN (LSTM) model was created to classify the input stream into clean and malware files. Results obtained in the latter part were much pronounced than the former Word2Vec implementation, with accuracy going as high as 96%.

**Tool used (Development tools - H/w, S/w) :** Python, Gensim, Cuckoo Sandbox, Keras, SKLearn

**Objectives of the project :** Malware Classification by using API Calls

**Major Learning Outcomes :** I got to learn about a completely new field (Machine Learning) which I had not explored before. Worked in Python and used the keras and sklearn libraries to build a LSTM model.

**Academic courses relevant to the project :** Machine Learning, Neural Networks

## Name : Vidushi Gupta (2015A7PS0011P)

**Student Write-up**

**Short Summary of work done during PS-II :** 1. Worked on development of web application which finds vulnerabilities in firmware of IoT Devices.
2. Build a RNN-model which detect anomalies in network traffic.

**Tool used (Development tools - H/w, S/w) :** AWS Cloud, Flask, Python, Jquery, Javascript, Anaconda, Keras, Pandas, Scikit learn.

**Objectives of the project :** 1. Providing vendors of IoT devices with a platform where they can keep check on firmware's vulnerabilities. 2. To detect anomalies in network traffic.

**Major Learning Outcomes :** 1. Learnt Web application development and get good command in API calls, python language, AWS cloud.
2. Machine learning model designing and Product designing from the very scratch.

**Brief Description of working environment, expectations from the company :** The working environment in Symantec is very friendly. People here are knowledgeable and always ready to help you. But projects offered to interns in Symantec are not well planned and might end up on dead end.

**Academic courses relevant to the project :** operating system, computer networks, machine learning.

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# *PS-II Station: synergiz global*

## Faculty

## Name : Mahesh Kumar Hamirwasia

# Student

## Name : MOLUGURI AKHIL (2015A2PS0799P)

**Student Write-up**

**Short Summary of work done during PS-II :** Work can be summarized as a blend of civil and analystics.The project work includes interpreting the ongoing site data to yield insights of progress in the form of dashboards which only demands a basic civil knowledge to grasp things easily.Apart from this it also dealt with business development strategies and development of monitoring tool.On the whole it serves as platform to get feet wet in analytics.

**Tool used (Development tools - H/w, S/w) :** Tableau

**Objectives of the project :** product development and project monitoring.

**Major Learning Outcomes :** Analytics

**Academic courses relevant to the project :** Project management

## Name : Mayank (2015A2PS0840P)

**Student Write-up**

**Short Summary of work done during PS-II :** project management consultancy services, like manipulating client's data into charts, graphs , dashboards etc. business development works.

**Tool used (Development tools - H/w, S/w) :** MS Excel, Tableau, primavera

**Objectives of the project :** To create interactive visuals from the client's data with the help of tools

**Major Learning Outcomes :** understand and learn different project management softwares and tools and implement them to modify client's data.

**Academic courses relevant to the project :** construction planning and technology (CPT).

# *PS-II Station: TAPCHIEF*

## Faculty

### Name : Annapoorna Gopal

## Student

### Name : Mukundan Singh (2015A20771P)

**Student Write-up**

**Short Summary of work done during PS-II :** My work revolved around engagement, and growth of TapChief Professionals. I also shared, grew and drove traffic to TapChief Blog by pushing content via different channels. Apart from this I closely tracked the metrics, and analyzed the impacts.

**Tool used (Development tools - H/w, S/w) :** Drip, Google Analytics, Excel, Google Adwords, Rebrandly.

**Objectives of the project :** Growth of TapChief Community

**Major Learning Outcomes :** - Understood the process to manage a community, and way to expand a community.
- My vocabulary and grammer has improved drastically.
- Learnt whole work process of content marketing.

**Brief Description of working environment, expectations from the company :** Friendly environment, flexibility, supportive seniors.

**Academic courses relevant to the project :** Digital Marketing

### Name : Abhyudai Mishra (2015A1PS0579H)

**Student Write-up**

**Short Summary of work done during PS-II :** Implemented Onboarding Process for Agencies that signup on the platform and maintained monthly supply analysis for the same.

**Tool used (Development tools - H/w, S/w) :** MS- Exel, Drip

**Objectives of the project :** Streamlining Agency Onboarding Process

**Major Learning Outcomes :** Communication Skills, Operations planning, Using Drip and running Mail Campaigns

**Brief Description of working environment, expectations from the company :** Overall environment supports work but not Much Value Addition.

## Name : Nisanth Varma (2014A8PS379P)

**Student Write-up**

**Short Summary of work done during PS-II :** I handled community outreach at TapChief for the first 3 months and shifted to handling Network Development and Storytelling. I was instrumental in User acquisition having acquired more than 20,000 new users in my time here. I shaped their LinkedIn marketing strategy and contributed to their overall marketing roadmap.

**Tool used (Development tools - H/w, S/w) :** Google Analytics, Heap, Amplitude, Proprietary TapChief tools etc

**Objectives of the project :** 1)User Acquisition 2)LinkedIn reach 3)Traffic 4)Conversions

**Major Learning Outcomes :** 1)LinkedIn Marketing 2)Community Management 3)Storytelling 4)UI/UX Principles 5)Customer Journey Mapping

**Brief Description of working environment, expectations from the company :** Great place to work at, especially if you're passionate about the mission. An amazing set of colleagues (quite a few of them being BITS Pilani alumni). Flexible timings, incredible mentorship.

## Name : Kuldeep Singh Naruka

**Student Write-up**

**Short Summary of work done during PS-II :** Worked in the Fulfillment Team of the Operations Department at TapChief. Fulfillment is the core team of company which handles all the projects which comes to TapChief. It includes sourcing profiles on TC Platform, Client and Expert(TC User) communication, Negotiation about the financials, conforming the projects and fulfilling them. The work at TapChief gives you a lot of challenges on a regular basis as Its a early stage startup which is working too hard to grow faster. The work at TapChief is not related to any particular technologies, so on that part you might not learn anything new here related to the technological part. Also, The workload at TapChief is too much that you can't even focus on other things if you want to. The PS platform shows that it has Saturday Sunday holidays but in my Team Fulfillment, there was no holiday on Saturdays.

**Tool used (Development tools - H/w, S/w) :** No tool was used as such.

**Objectives of the project :** Working in the fulfillment Team of TapChief

**Major Learning Outcomes :** You learn about the startup culture and how to work with your seniors and colleagues. Other than that there is no major outcome related to your skills and all.

**Brief Description of working environment, expectations from the company :** The company is the company about which you should be worried because they doesn't have any projects particularly. They don't mention the correct details over the PS Portal. Their is no HR who can take care of PS Interns and you can't talk to anyone to whom you can talk about your worries. There is no particular procedure for the PS Interns. To give you an example, our stipend wasn't transferred to our account for the first month until we asked our respective team leads about that. On the 3rd of August, our bank details were taken when we raised the question about the stipend. You should expect only bad things at TapChief if you have got allotted this station.

**Academic courses relevant to the project :** Nothing is required to work in this company. You can work if you are educated.

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## *PS-II Station: TATA Autocomp SystemS, Pune*

## Faculty

### Name : Mr Dinesh Wagh

## Student

### Name : Vatsal Agrawal (2015A4PS0295H)

**Student Write-up**

**Short Summary of work done during PS-II :** I ran the operations of the iEDGE vertical, one of the departments in the company. The work was in no way related to my branch; anybody with a working knowledge can learn the necessary functions in a short span and do it. However, to do it well, and also in order to handle the entire operations independently, you would also require quick decision making and great problem solving as well as sound communication skills. You would be dealing with suppliers, vendors, users and company HR on a daily basis.

**Tool used (Development tools - H/w, S/w) :** Microsoft Excel

**Objectives of the project :** To streamline the operations of the department and provide sustainable solutions to current roadblocks.

**Major Learning Outcomes :** Sales, Vendor management, User account management, Operations

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# *PS-II Station: Tata Chemicals Innovation Center*

## Faculty

### Name : Santosh Khangave

## Student

### Name : Sanket Chhajed (2015A1PS0727G)

**Student Write-up**

**Short Summary of work done during PS-II :** Comparative study of processing of Mung and Chana : Water Absorption and Drying with Different thermal treatment.

**Objectives of the project :** Modelling to predict Behaviour

**Academic courses relevant to the project :** Thermodynamics, Numerical methods

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## *PS-II Station: Tata motors limited*

## Faculty

### Name : Prof. Samatha Mujumdar

## Student

### Name : Potturi Surya Teja Varma (2015A4PS0346P)

**Student Write-up**

**Short Summary of work done during PS-II :** Eliminating rework for new model vehicle's that rolled out from D3 or H3 block by improving process maturity of production line

**Tool used (Development tools - H/w, S/w) :** Info fitment drawings, MS Excel

**Objectives of the project :** Eliminating rework on vehicle trucks

**Major Learning Outcomes :** Management process, Manufacturing process

**Brief Description of working environment, expectations from the company :** Working environment was good and very helpful

**Academic courses relevant to the project :** Material science

### Name : Awaneesh Shukla (2015ABPS0864P)

**Student Write-up**

**Short Summary of work done during PS-II :** Working with industrial experts, I worked on reducing the throughout time for Tata Winger assembly line. The project involved data analysis of T.T.T. for past months and doing a bottleneck analysis. Following which I studied the operations and stations which could add most to TTT. The next phase involved working on defect elimination and making design changes to make the process more efficient and less time consuming.
Overall the experience taught me the practical application of some of my discipline courses, helped me build professionalism and improve my ppt skills.

**Tool used (Development tools - H/w, S/w) :** Lean Manufacturing

**Objectives of the project :** Reduction of throughout time of Tata Winger Assembly Line

**Major Learning Outcomes :** Practical knowledge of assembly line operations and application of lean tools, design reviewing and change procedure

**Brief Description of working environment, expectations from the company :** Work environment is very professional and all the industry experts I interacted with guided me for my project.
Tata Motors provides a number of avenues for learning every aspect of automobile manufacturing and I am glad I could make the most of my time at the company.

**Academic courses relevant to the project :** Supply Chain Management, Lean Manufacturing

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## *PS-II Station: TATA Motors Limited , Lucknow*

## Faculty

### Name : Dr. Arun Maity

## Student

### Name : Pranjal Srivastava (2015A4PS0411P)

**Student Write-up**

**Short Summary of work done during PS-II :** I worked on proposing layouts for

the improvement of Gearbox-Clutch Housing assembly area, learning about the process, man-material movements, the tools involved and performing time studies for the same and also preparing Gantt charts. Making the current layout of the area on AutoCAD and proposing new ones to reduce the current commotion and man-material movements, and hence removing the bottlenecks.
I worked on my 2nd major project of Kitting Store Shifting. So there was a lot of cross movement when it came to Trim Line 2 and 3. The whole objective was to relocate the stores (zone wise) and pull the sub-assemblies to the area between the 2 lines so as to improve supervision and communication with the production team. A lot of data collection was involved in this project, post which the new layouts were proposed and the implementation of the same took place during the Diwali holidays.

**Tool used (Development tools - H/w, S/w) :** AutoCAD , MS-Excel

**Objectives of the project :** Propose a new Kitting Store layout for Trim Line 2 and 3 area. The project had multiple objectives; firstly to reduce the distance moved by kitting trolleys from the Kitting Stores to the feeding station, secondly to segregate the sub-assemblies from the Kitting Stores and relocating them at an appropriate place and thirdly to ensure that only moving parts are being stored in the Kitting Store. At present the Kitting Center besides line 2 caters to cabs of both Trim Line 2 and Trim Line 3 whereas Kitting Center beside Trim Line 3 caters to cowls of Trim Line 2. There's a lot of unnecessary movement of man and materials in this case. The objective was to shift the contents of the kitting centers in a planned and phased manner.

**Major Learning Outcomes :** The learning outcomes were immense, specifically how organisations of such large a stature work at the ground level, the inter-departmental dependence involved in its working. Coming to the project, I learnt to learn about Logistics management - how it is the most important pillar of a manufacturing industry. Being in the Planning Department, I had to communicate to a lot of people from other departments which even helped me to up the confidence in me which was lacking before.

**Brief Description of working environment, expectations from the company :** The working environment is quite conducive. It's good for the people who want to work, plus a lot depends on the mentor that is being allotted to you; I was fortunate enough to get an excellent mentor. The work timings (8:30 - 5:00 for 6 days a week) sometimes felt a bit harsh, but all over the working environment is good with no major disappointments. Be ready for a number of line visits, spending hours on a stretch on the production line.

**Academic courses relevant to the project :** Engineering Graphics
Production Planning and Control

## Name : Deepankar Shahi (2015ABPS0862)

**Student Write-up**

**Short Summary of work done during PS-II :** • Collection of fitment drawings related to the processes.
• Preparation of a Critical to Quality (CTQ) list of the processes studied.
• Analysis of all the gauges and machines installed for the process.
• Standardization of all the processes using Process Observation Check Sheet (POCS), Standardized Work Combination Sheet (SWCT), Spaghetti Diagram.
• Preparation of a modified Process Flow Diagram (PFD).
• Preparation of PFMEA for the processes involved on the station.
• Modifying the Control Plan (CP) and Work Instruction Sheets ( WIS).
• Analysis of torqueing data through Process Performance Analysis (Pp_ppk) and Process Capability Analysis ( Cp_cpk).
• Process Validation and defect monitoring after implementation of suggestions.

**Tool used (Development tools - H/w, S/w) :** • Standardized Work Combination Table(SWCT)
• Process Observation Check Sheet (POCS)
• Process Failure Mode and Effect Analysis (PFMEA)
• Spaghetti Diagram
• Process Performance Analysis (Pp_ppk)
• Process Capability Analysis (Cp_cpk)
• Process Validation ( Turtle Diagram)

**Objectives of the project :** To declare 3 stations at Assembly Line 2 as Zero Defect Stations

**Major Learning Outcomes :** • Information regarding part numbers, functions and specifications of all the parts and tools involved in the process and the drawings for the same.
• Torqueing values for all the bolts.
• List of Critical to Quality (CTQ) parameters
• Original Work Instruction Sheets (WIS) and Control Plan (CP)
• Movement of operators on assembly line( non-value adding activities)
• Time analysis of processes
• Defects occurring in the fitment.

**Academic courses relevant to the project :** Manufacturing Management and PPC helped me in carrying out the project. QCAR would have helped me in enriching the quality of my work.

## Name : Pranjal Sarin

### Student Write-up

**Short Summary of work done during PS-II :** Firstly I Studied what is PFMEA.Then I did the PFMEA(Process Failure Mode effect and Analysis) Gas Shutoff Valve and Wheel Balancing.

Then I Studied about the critical Parts of LPO-1515 55 and LPO-1618.I then saw where all the critical parts and main parts like Suspension mounting, axle fitment Engine Mounting etc are done. Firstly I checked the mode of Tightening(Impact Gun or Impact Gun with torque wrench or DC tool or Pulse Gun) Then I checked whether the tightening torque is followed as per torque specification or not.
Along with Torque study I am also responsible for testing the new beading which has an extra tube inserted at the A pillar and B pillar upper and lower end respectively. This change is made because as per flange made in Cabin is not as per design. Flange is generally bent or is at a wrong orientation angle. Apart from these 2 issues flange at b pillar lower side is outside the B pillar side while it should be inside as per Design. Due to new beading's there is a drastic change in water leakage.

**Tool used (Development tools - H/w, S/w) :** MS Excel

**Objectives of the project :** Testing and Analysis of Production Procedures for source identification and mitigation of defects.

**Major Learning Outcomes :** i)PFMEA of Various Processes-Gas Shutoff Valve,Wheel Balancing
ii)Torque Study of Critical and Major joints-of Vehicle LPO (Long Platform Overhanging)-1515
iii)Analysis of Newly Designed Beadings in Shower Test

**Brief Description of working environment, expectations from the company :** The Plant is divided into 2 parts eastern complex and western complex. Western Complex consists of Trim line-1,Assembly Line1 and Integral Bus Factory and Assembly Line4(Special project Line). While Eastern Complex consists of Trim line-2,3,Assembly Line-2,3.There is also a training Center in which we all had a 3 day training session and also a induction program of a week which we all attended. Except of Assembly Line4 each line has a conveyor belt. The plant has a Transmission Factory.It is responsible for Gear parts, crown wheel and pinion, and heat treatment facility. The plant also has its own Engineering Research Centre which focuses on buses. Facilities include a digital prototyping lab, use of PLM software, Catia etc.There is a testing site in the eastern complex. The Eastern Complex houses state-of-the-art facilities like a paint shop, BIW shop, and TCF factory with automated lines.
A day at Tata Motors Limited, Lucknow starts with a SDT (Self Directed Teams) meeting where focus is given on taking safety while performing operations and discussing a recent case (maybe on the road, at home, in the plant) where an accident had occurred and pondering upon the reasons why did it occur and how could it have been avoided if the victim had followed the appropriate safety procedures. TATA Motors' target metrics reads as SQDCME (Safety, Quality, Delivery, Cost, Morale,Environment) thus giving Safety a priority over above metrics.There are SQDCME display boards displayed up all along the lines,making it easier for a visitor to gauge the level of safety being followed in carrying out the operations. Each day, everyone gets an email on the news of TML , Lucknow which contains a safety tip without fail.
The Expectations of the company from employee is to work efficiently so that error

occurrence can decrease and also to increase the profits by increasing the amount of Vehicles produced.For this to happen every engineer is given a project to decrease Muda,Muri and Mura .Why Why Analysis is done in every project and also Fishbone Diagram is made in most of the projects.

**Academic courses relevant to the project :** Machine Design and Drawing,Engineering Graphics,PPC

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# *PS-II Station: TATA motors Ltd., Pantnagar*

## Faculty

### Name : Dr. Naga Vamsi Krishna Jasti

## Student

### Name : Yashashvi Tiwari (2015A4PS0181P)

**Student Write-up**

**Short Summary of work done during PS-II :** Work involved deep understanding of the assembly line which makes one capable to think of the relevant process parameters regarding your project. My project was about a chronic problem of timing belt failure in one the engines which was costed company almost INR 20 lacs p.a. Project will help gain knowledge of some industrial tools which are used to ensure quality of a product. Project requires multi-dimensional thinking and data analysis to predict potential failure modes , validation of those failure modes and implementaion of precautionary measures capable of completely eradicating a part or process issue. You'll in the end enhance your observation skills as well

**Tool used (Development tools - H/w, S/w) :** Structured problem solving advanced, VBA programming

**Objectives of the project :** Failure analysis of Timing belt in 800cc DICOR engine which to help company ensure reliability on their product and reduce experience expenditure on repairs for the same.

**Major Learning Outcomes :** Industrial methodologies, Observation skills, Critical thinking, Team spirit

**Brief Description of working environment, expectations from the company :** To get a work done for an intern here is pretty challenging as most of them instead of taking interest towards your work take it as a burden and irrelevant. Always keep in touch with senior most authority mentoring you. That will help one keep the project on the right track otherwise one can end up wasting a lot of valuable time

**Academic courses relevant to the project :** Automotive vehicles, QCAR, I C Engines

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# *PS-II Station: Tata Motors, Pune*

## Faculty

### Name : Samata Majumdar

## Student

### Name : Anurag Rallapalli

**Student Write-up**

**Short Summary of work done during PS-II :** Implementation of partial/fully automated, in-house developed machines to improve on the following factors -
Safety
Fatigue
Quality
Cost

**Tool used (Development tools - H/w, S/w) :** Machine Tools, Machining equipment, AutoCAD,

**Objectives of the project :** Multiple Projects with different objectives

**Major Learning Outcomes :** Industrial Professionalism, Corporate Bureaucracy, Production Line operations and maintenance,
Project management

**Brief Description of working environment, expectations from the company :** The department allotted was LOW COST AUTOMATION (LCA) under BUSINESS EXCELLENCE SERVICES (BES).
I was with one other student from Goa.
Being in a automation centric department we expected the work and the work culture there to be highly advanced and professional.
But, we were sad to see that it was not the case at all.
Our projects were really great and interesting and we enjoyed working on them. But, the problem was the people there (our tata motors mentor), they were too much to deal with.
It has been one of my worst work experiences, solely because of the work culture.

If you need more details contact me on the provided mail id

**Academic courses relevant to the project :** EG, Machine Design and Drawing, Mechanics of Solids, Kinematics and Dynamics of Machines

## Name : Saurabh kumar (2015A4PS0337G)

### Student Write-up

**Short Summary of work done during PS-II :** Worked **in** Low Cost Automation dept. which mainly focuses on automating different in-line processes to improve safety, fatigue, cost and quality.
I worked on 5 main projects including 2 individual projects and 3 team projects.
Individual projects include (i) Washing and a drying unit for proper disposal of hazardous waste of used gloves at ETP. (ii) 3-axis slider for visual inspection of engraved serial no. on cylinder block and mb caps.
Team projects include: (i) Automation of cab tilting process (ii) Automation of Spot weld gun tip dressing process (iii) Cable wire insulation stripper

**Tool used (Development tools - H/w, S/w) : AutoCad**, Festo, and various H/w tools including Lathe machine, Drilling machine, various welding tools, etc.

**Objectives of the project :** Automating different in-line processes to improve safety, fatigue, cost and quality.

**Major Learning Outcomes :** Professional environment, knowledge of different processes involved in vehicle development, various automation tools, etc.

**Brief Description of working environment, expectations from the company :** The work/project assigned to me was very challenging and satisfactory but the work environment was not that good and need to be improved a lot mainly on professional grounds.

**Academic courses relevant to the project :** Automotive vehicles, Production Technique II

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# *PS-II Station: Techture Structures Pvt. Ltd, Nagpur*

## Faculty

### Name : Mahesh Kumar Hamirwasia

## Student

### Name : Chanakya Cherukumalli (2014A2PS0577H)

**Student Write-up**

**Short Summary of work done during PS-II :** I worked on BIM (Building Information Modelling) during the Practice School - II period. I worked on ASI & MEP Modelling.

**Tool used (Development tools - H/w, S/w) :** Autodesk REVIT

**Objectives of the project :** MEP 3D Modelling & ASI 3D Modelling

**Major Learning Outcomes :** Thoroughly learned about the REVIT software

**Brief Description of working environment, expectations from the company :** There were no big expectations from the company, just need to learn the software required for the project & the work environment was healthy.

**Academic courses relevant to the project :** No courses are needed to do the project.

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# *PS-II Station: Tejas Networks*

# Faculty

## Name : Vishwanathan Hariharan

# Student

## Name : Shriya Gune

**Student Write-up**

**Tool used (Development tools - H/w, S/w) :** Open Air Interface, C

**Objectives of the project :** To optimise the LTE architecture

**Major Learning Outcomes :** In detail about the LTE networking architecture

**Academic courses relevant to the project :** MTN, TSSN

## Name : Anish Kumar (2014B4A30406G)

**Student Write-up**

**Short Summary of work done during PS-II :** We worked in the domain of upcoming 5G network. Our work involved understanding key elements involved in the network architecture and identifying the scope for improvement in any area that may directly or indirectly benefit Tejas Networks. For this, we worked on designing and implementing a Relay Node proposed in a patent that was given to us and to make sure it is LTE compliant and/or suggest any changes/modification if required. The nature of work was related to open source code development for the implementation and simulation of the network elements involved along with proposed changes.

**Tool used (Development tools - H/w, S/w) :** OpenAirInterface, WireShark, GIT, Netlink

**Objectives of the project :** To design and implement a 3GPP LTE complaint Relay Node that should work in the upcoming 5G LTE network without making significant changes to the other network elements involved in the LTE architecture.

**Major Learning Outcomes :** 1)Open Source Code Development 2) Knowledge of LTE architecture 3) Knowledge of OpenAirInterface 4)Knowledge of GIT

**Details of Papers/patents :** Details of Patent are confidential under the NDA

signed with Tejas Networks.

**Brief Description of working environment, expectations from the company :** The working environment is good, if one himself/herself takes the initiative. Tejas Networks is a telecommunications company, so at the end of the day, its work focuses on developing products for telecommunications service providers, internet service providers, utility companies, defence companies and government entities. It's a good PS2 station for ECE students who want to pursue a career in telecommunications domain.

**Academic courses relevant to the project :** Communication Networks, Mobile and Telecom Networks

## Name : Venkatesh S (2015A3PS0275P)

### Student Write-up

**Short Summary of work done during PS-II :** Our project was to build an oscillator characterization environment in order to test the performance of oscillators with variation in temperature. We sense the temperature of the environment using an analog temperature sensor. This signal
is then passed through a RC damper circuit to filter out noise and fed to the input of an analog-to-digital converter(ADC). The signal is converted to the digital domain and sent to the Raspberry Pi controller. The controller uses a control algorithm to generate a control signal. This control signal is in the form of a PWM signal of 3.3V. This signal is stepped up to a 12V PWM signal by the control element. The temperature of the heating element (Thermoelectric module) is then controlled by this signal.

**Tool used (Development tools - H/w, S/w) :** LTSpice, Raspberry Pi, Python

**Objectives of the project :** To build an oscillator characterization environment in order to test the performance of oscillators with variation in temperature.

**Major Learning Outcomes :** Interfacing to Raspberry Pi, Coding in Python, Tuning a PID loop, Parameters used to Characterize Oscillators.

**Academic courses relevant to the project :** INSTR F343
Industrial Instrumentation &
Control

## Name : Tushar Kaushik (2014B2A80349P)

### Student Write-up

**Short Summary of work done during PS-II :** High-voltage DC-DC converters are used in various equipment, like medical X-ray
imaging, traveling wave tubes, RF generation, and electric vehicles. Buck PhaseShifted (PS) full-bridge (FB) converter featuring high voltage attenuation, immunity from transformer flux imbalance, simple structure for multiple outputs, and zero output inductance are the preferable choice for such output voltage applications. Tejas Networks uses analog IC controlled DC-DC converter for its server power supply. Due to various drawbacks of using analog control; for example the aging of components, bulky design, less flexibility as analog schemes require a lot of modifications to adapt to different requirements etc, the power engineers have realized that the industrial trend of digital power has to be now adopted.
I worked on designing a DC-DC converter for server system.

**Tool used (Development tools - H/w, S/w) :** PSIM, **MATLAB**, SIMULINK, powerSUITE

**Objectives of the project :** Design of digital control scheme for Phase Shifted Full Bridge DC-DC Converter

**Major Learning Outcomes :** Control System Design for Power Electronics Applications

**Brief Description of working environment, expectations from the company :** Knowledgable mentors but not too interested in working with interns.

**Academic courses relevant to the project :** Control Systems, Power Electronics, Analog Electronics

## Name : SRI HARSHA VIGNESH KASAM

**Student Write-up**

**Short Summary of work done during PS-II :** Synchronisation of systems by characterization of crystal oscillators

**Tool used (Development tools - H/w, S/w) :** Hardware labwork

**Objectives of the project :** To create a chamber in which temperature can be controlled so that it can be used for oscillators testing.

**Major Learning Outcomes :** About various hardware components like tem and aslo get to know raspberry pi usage in advance level

**Brief Description of working environment, expectations from the company :** Working hours are flexible but work environment is not so friendly, but a

very decent office.

**Academic courses relevant to the project :** Analog electronics, measurement techniques, industrial instrumentation & control

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## *PS-II Station: TESCO*

## Faculty

### Name : Dr. Annapoorna

## Student

### Name : Akshay katta (2014B5A40860P)

**Student Write-up**

**Short Summary of work done during PS-II :** Work was good and required analytical knowledge to continue.

**Tool used (Development tools - H/w, S/w) :** SQL server, teradata,VBA,Excel microstrategy

**Objectives of the project :** To develop a forecasting model

**Major Learning Outcomes :** Data science

**Brief Description of working environment, expectations from the company :** People are good and helpful and managers push you learn more inorder to deliver

**Academic courses relevant to the project :** Statistics

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# *PS-II Station: TESCO*

## Faculty

### Name : Annapoorna Gopal

## Student

### Name : Abhishek Bhardwaj (2014B2A10826P )

**Student Write-up**

**Short Summary of work done during PS-II :** Automating & Creating tableau dashboard and working on the work flows required for the automation

**Tool used (Development tools - H/w, S/w) :** SQL, Alteryx, Adobe analytics, tablleau

**Objectives of the project :** Automation of Titan Dashboard

**Major Learning Outcomes :** Tableau and Alteryx

### Name : Yashwant Chourasia (2014B5AB0603P)

**Student Write-up**

**Short Summary of work done during PS-II :** Project was regarding store level range performance. Extracting the store data from data warehouse and creating a visualization of major KPI'S in tableau was the task. As I was directly involved with the stakeholders, got to learn alot about what goes in store and the process behind it. All the major concepts of supply chain becomes relevant.

**Tool used (Development tools - H/w, S/w) :** Teradata, Tableau, Hadoop

**Objectives of the project :** Range performance post an event launch.

**Major Learning Outcomes :** Varoius tools that are used by an analyst. The store level detail of range and their display.

**Brief Description of working environment, expectations from the company :** The environment in Tesco is very friendly and the teams are very

helpful.

**Academic courses relevant to the project :** SCM, Project Appraisal, Engineering Optimization.

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## *PS-II Station: Texas Instruments*

## Faculty

### Name : Satya Sudhakar

## Student

### Name : Ria Doshi (2015A3PS0283G)

**Student Write-up**

**Short Summary of work done during PS-II :** Design of Auxiliary Power supply unit

**Tool used (Development tools - H/w, S/w) :** Altium

**Objectives of the project :** Used in end Equipment of Server Power Supply

**Major Learning Outcomes :** Practical exposure through work at high voltage lab

**Brief Description of working environment, expectations from the company :** Very comfortable, no strict timings, judged on the basis of enthusiasm and deliverables

**Academic courses relevant to the project :** Power Electronics

### Name : Vishal Asnani (2015A8PS0392G)

**Student Write-up**

**Short Summary of work done during PS-II :** All the devices in today's world communicate with each other using standard protocols. To test whether the data sent is correct or not can be very cumbersome. The protocol commands are called into the test program of the chip to vary different characteristics of the device. These commands generate different test patterns at the run time of the program thereby increasing testing time. I made a Perl script which will create the test patterns for the corresponding command. These patterns can then be appended in the test program beforehand thereby decreasing testing time.

**Tool used (Development tools - H/w, S/w) :** Perl, Labview

**Objectives of the project :** Pattern based testing

**Major Learning Outcomes :** script and labview code making

**Academic courses relevant to the project :** ADVD

### Name : Vidhan Jolly (2015A3PS260P)

**Student Write-up**

**Tool used (Development tools - H/w, S/w) :** Cadence Allegro, Labview, teststand

**Objectives of the project :** Post Si Validation of Z1914 Test chip which incorporates low power analog Ips used in supervisors products.

**Major Learning Outcomes :** Design of Test circuits and boards
Automation using Labview and Teststand
Understanding and debugging of critical low power analog IPs used in power management ICs
Debugging and finding flaws within circuits using schematics

**Academic courses relevant to the project :** Analog electronics,ADVD, Microelectronics circuits,Digital design

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## *PS-II Station: Thinkerbell Labs Bangalore*

## Faculty

## Name : Satya Sudhakar Yedlapalli

# Student

## Name : Niyati Agrawal (2015A8PS0468P)

### Student Write-up

**Short Summary of work done during PS-II :** Designed a new PCB, starting from the analysis report on power requirements, the schematic, PCB layout and gerber. The entire design team included of 3 people. But the electronics design was completely monitored by me. The design was done on KiCAD for the pcb-so understanding the software and tools for simulation was also entailed in this project.The design required a complete study of the product and it's design. The new battery management system that was installed with the battery in the product not only charges battery but gives a real time report on the performance of the product. It is programmable so can be altered as per future use. As a part of the project it was also entailed that we use this design to make a prototype and test it. the testing process and methodology was also devised by me under the quality assessment project. The product is an electronic device and to be market ready it should follow certain international standards-CE/FCC/IEC. a detailed research about under what directives of these standards does the product come was also carried out ,to ensure the design is safe for use.

**Tool used (Development tools - H/w, S/w) :** KiCAD, Ms Excel,

**Objectives of the project :** Design a PCB for smart battery management system

**Major Learning Outcomes :** PCB Designing
Smart Battery management system
software- KiCAD
Testing methodology

**Brief Description of working environment, expectations from the company :** Thinkerbell Labs is a perfect example of a startup environment which provides you the time and right guidance to learn and pursue your interests while being beneficial to the company. The entire team of Thinkerbell Labs is a group of fantastic engineers working towards making the education inclusive for all. Their constant enthusiasm to work hard, their accuracy in the work even under extreme pressures motivated me a lot. The company expects you to work efficiently and complete the tasks provided before deadlines, while simultaneously working with other members of the team and helping them with other projects. The company welcomes any suggestions for improving efficiency, productivity and improving the

work environment.
As a part of professional development, I had a few chats with my team, colleagues which were very encouraging. I was communicated to on places where I need to hone my skills further. This was very helpful for me both professionally and personally.

**Academic courses relevant to the project :** Analog electronics, power electronics, microelectonic circuits

## Name : Swaraj Budhavaram (2015A4PS0329P)

### Student Write-up

**Short Summary of work done during PS-II :** The nature of works I have done are Market research to identify the beneficiaries of the product in India and Public policy, financial budget analysis. This enables the company to have a smooth process of sales with the Governments of different states. Minor project works include:
1. Handling the entire process of participation in startup competitions and accelerator programs which basically provide funds, a network of investors, marketing and sales leads.
2. Public policy analysis and financial budget analysis of different states for the benefit of visually impaired for B2G sales.
3. Setting up and managing the Customer Relationship Management process.

**Tool used (Development tools - H/w, S/w) :** CRM software, MS Excel

**Objectives of the project :** The objective behind this project is to generate ideas that will increase the Sales of Annie – Braille teaching device. We want to sell the device and install smart Braille classes in all Govt. schools for the blind and the Pvt. Schools aided by Govt. For that to happen, one must have a good idea about the schemes, policies and budget allocations by the Govt. for the visually impaired. We also want to sell our device through CSR projects of other companies and also to individual customers. In order to achieve this, we have to organize all the existing leads, set up and manage customer relationship management processes. We conduct market research to identify leads in various sectors including schools, NGOs, Govt., CSRs and for other strategic partnerships.

**Major Learning Outcomes :** Key Learnings and their respective domains are:
1. Leadership – process setting and internal management
2. Sales - Customer Relationship Management
3. Sales - Market research
4. Public Policy - Government budgets, policies, and schemes
5. Soft skills - Team Working, Presentation skills, and decision-making skills
6. Fundraising process of Startups, Startup environment.

**Brief Description of working environment, expectations from the**

**company :** Thinkerbell Labs is a perfect example of a startup environment which provides you the time and right guidance to learn and pursue your interests while being beneficial to the company. The entire team of Thinkerbell Labs is a group of fantastic engineers working towards making the education inclusive for all. Their constant enthusiasm to work hard, their accuracy in the work even under extreme pressures motivated me a lot. The company expects you to work efficiently and complete the tasks provided before deadlines, while simultaneously working with other members of the team and helping them with other projects. The company welcomes any suggestions for improving efficiency, productivity and improving the work environment.

As a part of professional development, I had a few chats with my team, colleagues which were very encouraging. I was communicated to on places where I need to hone my skills further. This was very helpful for me both professionally and personally.

**Academic courses relevant to the project :** Technical report writing, Public Policy

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# *PS-II Station: Thorogood Associates*

## Faculty

### Name : Annapoorna Gopal

## Student

### Name : Aritra Chowdhury (2014B5A30602G)

**Student Write-up**

**Short Summary of work done during PS-II :** I was responsible for the back end and front end development of an entire Business Intelligence system. Raw data would come from business which would be loaded and transformed into meaningful data. This would then be generated in the form of dynamic reports which would be sent to the business for analysis. My work involved lots of technical and business development, along with a lot of client interaction.

**Tool used (Development tools - H/w, S/w) :** S/w - SQL, SSIS, Tableau, PowerBI, Excel Power Pivots

**Objectives of the project :** The build of an entire Business Intelligence system for a client.

**Major Learning Outcomes :** Technical skills, Communication skills, Management skills

**Academic courses relevant to the project :** DBMS

## Name : Rahul Bansal (2015A8PS0522G)

**Student Write-up**

**Short Summary of work done during PS-II :** Developing end to end business intelligence solutions for multi national corporations. Work involved creating systems on databases on SQL all the way till the front end in the form of dashboards that the clients could see. Work was client facing with regular client calls at least twice a week to give updates and discuss the progress. The work is very logic oriented and gives you a good insight into the working of multi national corporations. A lot of problem solving skills are needed to come up with solutions for the problems that the clients face. Work culture is great and everyone really helps you grow and develop. No pre requisite knowledge of any software is needed as the company trains you in all the involved technologies.

**Tool used (Development tools - H/w, S/w) :** SQL Server, SSIS, SSAS, SSRS, Tableau

**Objectives of the project :** Analysing point of Sales Data

**Major Learning Outcomes :** Great business insights and growth in technical understanding of business intelligence softwares.

**Brief Description of working environment, expectations from the company :** The work environment is extremely friendly and everyone is willing to help you out in case of any issues that you face. The company follows a flat hierarchy and the senior level consultants are also extremely approachable and friendly. Each person is assigned a line manager who ensures that the person is properly fitting into the company and not facing any problems. The line manager also keeps a track of the performance of the individual through the course of the internship. The company expects you to have strong logical reasoning and analytic skills, be diligent regarding your work and be a fast learner as a lot of learning happens on the job. The work environment is very fun with lots of fun activities happening through the course of the internship. Each and every consultant is a part of these activities. Thorogood employees are hard workers but also know how to have fun. Overall a great place to start off your career.

**Academic courses relevant to the project :** As such no courses are needed. But taking the course "Database Management Systems" may be of help.

### Name : Pranay Karnawat (2015A8PS0501G)

**Student Write-up**

**Short Summary of work done during PS-II :** Thorogood Associates is a business Intelligence and Analytics consulting firm and mainly deals with data. People with good enough experience teach all the softwares you would require during your internship and help you apply that knowledge practically as well.

**Tool used (Development tools - H/w, S/w) :** SQL, SSIS, SSAS, Tableau, QLIK

**Objectives of the project :** Deliver BI solutions to clients

**Major Learning Outcomes :** New softwares, Client relationship

**Details of Papers/patents :** Cannot be disclosed

**Brief Description of working environment, expectations from the company :** The working environment is amazing. People here actually encourage you to maintain a good work-life balance and to not work more than 8-9 hours during a day. Majority of the people in Thorogood are in the age bracket of 25-30, so it is very easy to connect and mix with them

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## *PS-II Station: U.S.T Global, Trivandrum Campus*

## Faculty

### Name : Prof S. Sindhu

## Student

### Name : Shreyash Anand (2014B4A10803P)

**Student Write-up**

**Short Summary of work done during PS-II :** Developing a platform that allows third parties to execute algorithms deemed secure by data providers like Google, Facebook etc. on the data bases of those of those data providers, and obtain responses that do not disclose any personal data of the individuals. This ensures privacy of users remains intact by making sure data never leaves the data provider's server, as third parties might be vulnerable to security breaches, or unethical practices.

**Tool used (Development tools - H/w, S/w) :** Flask, Python, MySQL, HTML,CSS

**Objectives of the project :** Making a Trust Platform

**Major Learning Outcomes :** Learnt Open ID connect and OAuth , vetting of signatures and improved the python skills.

**Brief Description of working environment, expectations from the company :** Pro-- Good amount of projects are available here, there is a lot to do if you have prior knowledge. The pressure is not that much.
Con- Some Mentors are from non tech field and their attitude might be frustrating for some people.

**Academic courses relevant to the project :** Computer programing, Object oriented Programming, DSA, Machine Learning

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## *PS-II Station: UBS*

## Faculty

### Name : BV Prasad

## Student

### Name : Ashwin Shirbhate (2014B3AB0509P)

**Student Write-up**

**Short Summary of work done during PS-II :** I worked in reporting and analytics

services, Finance

**Tool used (Development tools - H/w, S/w) :** Excel

**Objectives of the project :** Prepared a report to be used by higher management to gauge team performance.

## Name : Yash Jain (2015A1PS0741H )

**Student Write-up**

**Short Summary of work done during PS-II :** We, as a part of Data Integrity team, are currently trying to employ new techniques to
automate the time-taking reporting processes and also trying to reduce the errors that can
occur, to zero.
We were given numerous reports that were generated on daily/weekly/monthly basis. The
main goal will be to automate the reporting part of the work and focus more on the analysis
of the work. Automating increases the quantity of the work and manually focusing on the
reports and data.
Most of the automation work was based upon the Visual Basic. It is an event driven programming language and associated development environment created by Microsoft. It is
used to develop programs that control the Microsoft Office application. It has one of the
largest user bases in business programming. VBA is easy to learn and the applications are
infinite.
VBA keeps performing the very same way each time it is executed. This reduces the chances of any deviation from the desired function. Moreover, VBA can also be modified
to control outlook.
Through VBA, we have worked on umpteen excel based function such as creating and
navigating through files and folders, importing the data files, scraping data through SQL
server, going online and fetching live data, drafting an email and so on.
This has enriched our understanding of how the processes work in the background and gave
us a systematic approach of all such applications.

**Tool used (Development tools - H/w, S/w) :** VBScript, SQL, MS Office

**Objectives of the project :** My work at UBS is currently under the guidance of

the senior lead as a mentee to understand the Day to Day business requirements and work expectations within the Data Integrity Team. I work on specific daily work assignments which are related to creation and publication of Reports along with analysis. I'm also assisting automation of many reporting processes right from downloading the data to publishing it.

**Major Learning Outcomes :** In the last 5 months, we have gone through a vivid experience where we have enhanced not
only the technical skills of ours, but the soft-skills and personality traits as well. We have
learnt that the blend of business understanding and the technical background can work
wonders in this industry and thus, is very reputed. Because getting the numbers is one
thing, but only making sense out of it gets the job done.
This was presented in front of the senior management who not only applauded us for the
work that we had put in, but also wished the best for us. They were expecting us back at
office as soon as we can make it, which is a big thing for us.

**Brief Description of working environment, expectations from the company :** The working environment is very flexible and at the same time, everyone is dedicated to work. This is something we found different from the regular corporate settings.

**Academic courses relevant to the project :** SAPM, FRAM.

## Name : Barun Mohapatra (2015A5PS0958P)

### Student Write-up

**Tool used (Development tools - H/w, S/w) :** Excel, R solutions,Bloomberg Entity Exchange, BOXI, RDC, Fenergo ,DOCStore

**Objectives of the project :** Periodic Review of UBS-IB clients

**Major Learning Outcomes :** As this was my first experience in the corporate world the first major takeaway has to be understanding the protocols on which any large corporation works ranging from work culture & expected ethical standards to bottomlines . Our project environment is very similar to that of a startup, so the volatility in the day to day process flow as well as management will hold me in better stead in the future. As for technical knowledge I got to know a whole lot of information about the different types of products & client engaged,as well as the regulatory & Anti-Money Laundering guidances followed by investment banks. The types of client dealt with by these banks can range from pretty straightforward to extremely complicated which helped me get an idea about interacting with people

from varying geographical backgrounds. As most of the client information is is 3rd party restricted, so data management & secrecy is also pivotal.

## Name : Ashwin Shirbhate

### Student Write-up

**Short Summary of work done during PS-II :** First part of my internship was with Service Management team in Reporting and Analytics (Finance). The team manages access to the internal report sharing tool. This team does not work with any sort of financial data and usually does not generate reports for the company. However, the team has access to metrics from the report sharing tool which can be collated to present an overview of the various RAS teams.

As an intern, apart from BAU team activities, I worked under the Executive Director of RAS (Finance) on developing a report from scratch, that would be helpful for higher management to assess team performance and take key decisions. I worked on developing KPIs using available data, to be used for assessing teams. As the report generation process is lengthy, I also created a macro to automate the process. The report was also presented on a global level to Managing Directors of various regions.

If this model succeeds, this would be emulated for teams in other countries.

**Tool used (Development tools - H/w, S/w) :** Excel Macro

**Objectives of the project :** Developing a report for management

**Major Learning Outcomes :** I got an opportunity to look at the management side of banking.

**Brief Description of working environment, expectations from the company :** The working environment is not too good in this team. The usual work is not hectic and so I got a lot of free time to go through their internal courses, the team however has practically no scope of learning, the systems/applications are internal and any learnings in this team would not be useful outside the team. Allotment to the team was random, I was the only one who was allotted a non-reporting team in RAS. I requested for a change but they didn't for this semester. Working under the Executive Director was a good experience and I got to learn a lot under him. PS experience here would depend on the kind of relations you develop with people.

**Academic courses relevant to the project :** Principles of Management

# *PS-II Station: UBS BSC, Investment Bank- Hyderabad*

## Faculty

### Name : Prof Krishnamurthy Bindumadhavan

## Student

### Name : VISHAL SURANA (2015A5PS093P)

**Student Write-up**

**Short Summary of work done during PS-II :** 1st Phase of Internship (First 2 months) - I was asked to learn end to end work flow of an investment bank by working with different teams associated with the Trade Life Cycle of various financial instruments like Equity,CDS(Credit Default Swap),SBL,Derivatives,Bonds& PB.
2nd Phase of Internship- I was involved in a team which was tasked with reducing the amount of breaks occurring in the process of reconciliation of securities.

**Tool used (Development tools - H/w, S/w) :** MS Execl, Settlements & reconciliation Software-TLM

**Objectives of the project :** Reconciliation of Securities & Breaks Reduction

**Major Learning Outcomes :** 1. In-dept experience of how an Investment Bank works and carries out it's day to day operations.
2.Detailed understanding about Trade life cycle, different types of Financial Instruments,Securities reconciliations & settlements.
3. Ability to streamline one's thoughts in a structured & logical manner.
4.How to write a Business case.
5. Data analytics using MS excel.

**Brief Description of working environment, expectations from the company :** Organization's culture is too good. My co- workers were friendly & supportive. They were ready to help me out even when they were super busy .
My line manager made sure that i was doing the right things in the right place at the right time even though he had a super busy schedule. Overall a pretty good experience.

**Academic courses relevant to the project :** DRM , Fundamentals of Finance & Accounting, SAPM

# *PS-II Station: UBS BUSINESS SOLUTIONS Mumbai*

## Faculty

### Name : BV Prasad

## Student

### Name : Pallavi Trivedi (2015A1PS0721P)

**Student Write-up**

**Short Summary of work done during PS-II :** My work in UBS was automation.I automated many manual processes of the bank.There are many departments in UBS.My department was Credit Risk Data Integrity.I enjoyed my work as I got to learn how one can use VBA,Html and JavaScript for the purpose of automation.The people here were very friendly and supportive.

**Tool used (Development tools - H/w, S/w) :** VBA, HTML, JavaScript,my sql

**Objectives of the project :** Since my work involved automating manual processes,the main objective was to reduce overall time and cost.

**Major Learning Outcomes :** I automated various processes.I learnt web scraping with the help of visual basic,HTML and JavaScript.

**Brief Description of working environment, expectations from the company :** The working environment is good.The people are friendly and supportive.

**Academic courses relevant to the project :** A little knowledge of SAPM and FRAM is sufficient.

# *PS-II Station: UltraTech (Ahura Centre), Mumbai*

# Faculty

## Name : Mrs. Preeti NG

# Student

## Name : Vishal Lavania

**Student Write-up**

**Short Summary of work done during PS-II :** Cybersecurity is an important concern for any organization. Two of the most common approaches to managing and monitoring network events are SIEM (security information and event management) and log management. These applications log, process and analyze data in order to give better insights into what's going on within a company's network and IT infrastructure. While SIEMs and log management tools are valuable in any company's security toolbox, they can also be a challenge to use effectively. My work entailed coupling a traditional SIEM and log management system with Behavioral Analytics to increase the efficacy of the system in risk mitigation.

**Tool used (Development tools - H/w, S/w) :** Hadoop database, Graylog, ElasticSearch, Recurrent Neural Networks

**Objectives of the project :** To enable Information Security team to quickly identify anomalous activities for timely incident response and to archive the security events logs for forensic analysis.

**Major Learning Outcomes :** Learned how to:

- Capture security event logs from IT systems
- Analyze logs to identify probable incidents
- Archive logs for longer periods to aid forensic analysis
- Develop intelligence to identify anomalous/risky behavior and alert generation

**Academic courses relevant to the project :** Machine Learning, Artificial Intelligence, Recurrent Neural Networks, Behavioral Analytics

## Name : Vishal Lavania (2013B1A80774G)

**Student Write-up**

**Tool used (Development tools - H/w, S/w) :** Python libraries, ElasticSearch, Graylog, VM Red Hat Enterprise Linux Servers

**Objectives of the project :** To build a Security Event and Incident Management System with Artificial Intelligence using Recurrent Neural Network to raise security alerts mitigating business risk

**Major Learning Outcomes :** Information Security, ELK stack, Graylog, NXlog, Python

**Academic courses relevant to the project :** Artificial Intelligence, Machine Learning

### Name : Trupti Shet (2015A4PS404H)

**Student Write-up**

**Short Summary of work done during PS-II :** Predictive Analysis

**Tool used (Development tools - H/w, S/w) :** Python,PI Sdk

**Objectives of the project :** Generating smart alerts for failure Prediction

**Major Learning Outcomes :** Making of Regression Models using time series analysis

**Brief Description of working environment, expectations from the company :** Working environment is quite strict and punctuality is important.

**Academic courses relevant to the project :** Machine Learning,C programming

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## *PS-II Station: United Airlines Business Services Pvt ltd*

## Faculty

### Name : Sandeep Kayastha

## Student

## Name : Srinivasan G (2015A4PS0283P)

### Student Write-up

**Short Summary of work done during PS-II :** Started with extensive training in spotfire, Excel and SQL, with basic training in R, Python and Using teradata. After that was allotted to a small project where we can apply our knowledge from training.
Worked on developing an artificial intelligence model for personalized destination recommender for employees.
Presented it to stakeholders.
Quality checked the data between data transferred to a newly created palintir database and current teradata database and reported the anomalies.
Analysed the stability of the network planning prediction model by comparing the predicted vs actual data.
This is an ongoing project, and will continue even after the PS ends.

**Tool used (Development tools - H/w, S/w) :** Spotfire, hive, SQL, R

**Objectives of the project :** To build an artificial intelligence model for personalized destination recommendations for employees. To check the stability of future prediction model of the network planning team.

**Major Learning Outcomes :** SQL, Data analytics, Hive, R, Spotfire, Communication skills**.**

**Brief Description of working environment, expectations from the company :** Excellent, Professional atmosphere with lot of knowledge transfer sessions. People are extremely friendly and will help in every aspect possible. Can really expect to improve in professional behavior.
Speaking to Stake holders from United States of America will improve our communication skills.

**Academic courses relevant to the project :** Database Management Systems, Machine Learning

## Name : Soumya Sharma (2015A4PS0261G)

### Student Write-up

**Short Summary of work done during PS-II :** Prepared data tables using Teradata and SQL to analyze these metrics and develop insights into volatile markets
having low efficiency and productivity
Performed exploratory data analysis using SQL & Spotfire and helped Revenue

Management team to devise cost-cutting strategies and optimize market utilization.
Created 2 dashboards for data visualization
Performed linear regression modeling to understand metrics like load factor and market yield to forecast changes;

**Tool used (Development tools - H/w, S/w) :** R, SQL, Teradata, Spotfire, Excel, Palantir

**Objectives of the project :** to build a dataset that could be used as a 'Fingerprint' for markets

**Major Learning Outcomes :** data analysis, visualization, automation

**Academic courses relevant to the project :** Principle of Economics, Any course related to the data analytics

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## *PS-II Station: UpGrad*

## Faculty

### Name : Swarna Chaudhary

## Student

### Name : Machunuru Venkata Subbaiah (2015A7PS0029H)

**Student Write-up**

**Short Summary of work done during PS-II :** My work is to prepare interview content on Data Structures and Algorithms for an online course on Software Development Engineering (Full Stack). Apart from that I redeveloped some previous modules in the course.

**Tool used (Development tools - H/w, S/w) :** IntelliJ IDE

**Objectives of the project :** The objective is to prepare an online course on Software Development Engineering (Full Stack).

**Brief Description of working environment, expectations from the**

**company :** The work environment in my team is very friendly. My mentor is very supportive until and unless you completed the work which is allotted to you. No one questions you for anything. Flexible working hours is an added advantage for a city like Mumbai. I expect that the company can enroll the interns in one of their online course which can also be part of the evaluation and it helps the student to make this time even more productive by acquiring new skills. The company expects a sound knowledge of Data structures and algorithms and good at content writing.

**Academic courses relevant to the project :** Object-oriented Programming, Data Structures and Algorithms

### Name : Nausheen Akhter (2015A7PS0023P)

**Student Write-up**

**Short Summary of work done during PS-II :** The main task of my project was to design content for the course BLOCKCHAIN. For which I did some research and designed a core blockchain using JS. Then I created decentralized application by writing smart contract using Solidity. After it I developed a blockchain using Hyperledger Fabric.

**Tool used (Development tools - H/w, S/w) :** Nodejs, npm, virtual machine, docker, visual studio code, remix editor, metamask, Ethereum Wallet.

**Objectives of the project :** Creating content for the course BLOCKCHAIN.

**Major Learning Outcomes :** Learnt in depth about the new technology, blockchain.

**Academic courses relevant to the project :** Computer network, cryptography, data structure and algorithm.

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## *PS-II Station: UST GLOBAL*

## Faculty

### Name : SINDHU S NAIR

## Student

## Name : SINDHU DAVULURI (2015A8PS0509G)

**Student Write-up**

**Short Summary of work done during PS-II :** Web Development

**Tool used (Development tools - H/w, S/w) :** Node js

**Objectives of the project :** Website launch

**Major Learning Outcomes :** Web development

**Brief Description of working environment, expectations from the company :** Good

## Name : Harika Kothapalli (2015A3PS0364H)

**Student Write-up**

**Short Summary of work done during PS-II :** This project deals with the deployment of various JavaScript API's which are programmed to task the different use cases of the Ethereum Blockchain. API's have been developed for 3 such use cases. The first use case includes the Proof of Existence which is an API designed to prove the existence of a document or a string in a private blockchain so as to prove the rightful ownership of the document based on a timestamp and block number. The second use case deals with the telecom industry by preventing the usage of stolen phones by making sure they cannot register to mobile network providers. The third use case can be used to solve the common fraud found in the finance industry which involves invoice financing. Various technologies and databases have been used which are listed below.

**Tool used (Development tools - H/w, S/w) :** Docker, MongoDB, Ethereum, MySQL, Truffle, Ganache, Android Studio, Expo

**Objectives of the project :** Proving the existence of data at a certain point in time can be very useful for educators, entrepreneurs, and attorneys. Timestamping data in an unalterable state while maintaining confidentiality is perfect for legal applications. The Proof of Existence project is based on the concept about proving the ownership of a certain document/file/media which was created on a date and time. The Proof of Existence API allows the users to store the hash of data securely within the Ethereum Blockchain so that in future no claims can be raised regarding the ownership of the data. The second API is the Prevention of theft.The Prevention of Theft platform aims at bringing all Telecom Companies and other authorities such as Police Department into a consortium, so that the IMEI blacklist can be shared

among them. This means that an IMEI number blocked by one member of the consortium will be considered blocked by every other parties under the network. This is implemented using Blockchain Technology (Ethereum Platform) using the concept of 'Proof of Existence'. This API aims at preventing the usage of stolen phones by making sure it cannot be registered to any network provider or even if they do try to register with a stolen phone, the location of the phone is found. The 3rd API is the trade finance API which is used to prevent fraud in invoice financing.

**Major Learning Outcomes :** Learnt Blockchain concepts, Server side coding, Database Management, UI development, Team work, Communication

**Academic courses relevant to the project :** Computer Programming

## Name : Anand Vishnu K (2015A1PS0580G)

**Student Write-up**

**Short Summary of work done during PS-II :** Software Development, Marketing Research

**Tool used (Development tools - H/w, S/w) :** Pycharm,Python, Excel, Powerpoint

**Objectives of the project :** Develop application, Find the market and competitors of softwares

**Major Learning Outcomes :** Development using python.

**Brief Description of working environment, expectations from the company :** Good learning environment. Got enough help from project leaders.

## Name : Archa R I (2014BA80900G)

**Student Write-up**

**Short Summary of work done during PS-II :** Hands on experience on making a humanoid robot for a textile firm

**Tool used (Development tools - H/w, S/w) :** Open CV software, OpenGL library

**Objectives of the project :** To make a humanoid robot for a textile firm which could preview the product on the customer without him actually wearing it.

**Major Learning Outcomes :** Experience in OpenCv, OpenGl libraries.

**Brief Description of working environment, expectations from the company :** Working environment is cordial and stress free compared to usual IT firms. Employees are friendly and supportive. Most of them give us ideas to proceed with the project from their experience.

**Academic courses relevant to the project :** Computer Programming

## Name : Vamsee Krishna Padala (2015A4PS0349G)

**Student Write-up**

**Short Summary of work done during PS-II :** My work was to build a data streaming and analytics platform for Trade Funds related affairs.The platform was based on Apache Kafka and Elk Stack.The main use of the Framework is analysis of the data coming from point of sales machines across retail stores and thus aid in decision making regarding offers made by manufacturers.Other use cases include Shelf Performance Analysis and New Item Setup.

**Tool used (Development tools - H/w, S/w) :** S/w-Apache Kafka,ELK Stack,Java and Python Programming (Basic)

**Objectives of the project :** To build a data streaming and analytics platform for Trade Funds related affairs

**Major Learning Outcomes :** An introduction to Big Data analytics ,Got to work on latest industry relevant software.

**Brief Description of working environment, expectations from the company :** It was a pleasure working under Mr.Ashok Nair who was my mentor for the project.He always encouraged us to come upp with innnoviate solutions whenever he presented us with an idea.All of my colleagues were cooperative and understanding.Overall,the company provided us with a relaxed and productive environment.

**Academic courses relevant to the project :** Computer Programming,Object Oriented Programming

## Name : Sindhu Davuluri (2015A8PS0509G)

**Student Write-up**

**Short Summary of work done during PS-II :** Web Development and UI/UX

**Tool used (Development tools - H/w, S/w) :** programming IDE's like atom, C++ Visual Studio

**Objectives of the project :** Web Application Launch

**Major Learning Outcomes :** Web Development

**Brief Description of working environment, expectations from the company :** non-flexible office hours and hierarchy

## Name : Nihal Reddy Barla (2014B1A80792H)

**Student Write-up**

**Short Summary of work done during PS-II :** We created usecases of blockchain. We used solidity to write smart contracts on Ethereum Blockchain. We also wrote API'S and dockerized the software in container. We used ec2 instance to host it.

**Tool used (Development tools - H/w, S/w) :** JavaScript , nodeJS, solidity,docker,AWS,ReactJS,HTML,CSS

**Objectives of the project :** To create different use cases of blockchain (Prevention of Theft, Proof of Existence) using its properties of immutability and decentralization.

**Major Learning Outcomes :** I have learnt JavaScript , nodeJS, solidity,docker,AWS to do the given projects.I worked exclusively working in backend field. I learned different types of computer and networking architecture when using IPFS and ethereum to upload our files into a decentralized network.

**Brief Description of working environment, expectations from the company :** The working environment was great. Mentors were supportive and they expect a lot of passion,enthusiasm and hard work from bitsians. We do some real time projects, working alongside the UST employees. They have great expectations from us. The employees were cooperative. It is good PS for an internship.

**Academic courses relevant to the project :** Cryptography

## Name : Anshul kumar (20150443)

**Student Write-up**

**Tool used (Development tools - H/w, S/w) :** Python

**Objectives of the project :** Making a trust platform that would provide more data security and returns only safe answers.

**Major Learning Outcomes :** Python

**Brief Description of working environment, expectations from the company :** The work load in this ps station is not much. If you want to study someother course (say datascience or finance) on udemy or other website then this is the perfect ps. There will be less work load and you will get atleast 1-2 hrs daily for studying. City is cheap so 20k stipend is decent.

## Name : Shalvak Mittal (2014B3AA0723H)

**Student Write-up**

**Short Summary of work done during PS-II :** I was a part of number of projects. At first, almost everyone has get familiar with HTML, Javascript and the basics of web development. I was a part of the backend team. My work initially was with GET, POST requests using POSTMAN. Since it is a R&D department, a lot of new technologies like Blockchain, Hashgraph are being researched and experimented on. They encourage the learning of new programming languages also like golang.

**Tool used (Development tools - H/w, S/w) :** Languages - HTML, Javascript, Java, PHP

**Objectives of the project :** Web Development

**Major Learning Outcomes :** New programming languages learnt.

**Brief Description of working environment, expectations from the company :** The working environment is quite laid back. The managers are not really bothered if you finish your work on time or not. You can learn a lot in the 5 months if you have the determination.

**Academic courses relevant to the project :** OOP, Operating System

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# *PS-II Station: UST Global, Chennai*

# Faculty

## Name : Dr. Padma Murali

# Student

## Name : Athul Prakash (2015A3PS0171P)

**Student Write-up**

**Short Summary of work done during PS-II :** Machine Learning Project in the area of computer vision. Given input of photos of a crashed car, detect the different damaged parts and the extent of the damages. Object Detection and Classification libraries were utilized.

**Tool used (Development tools - H/w, S/w) :** Python(Anaconda,Spyder), Tensorflow API, Keras Library, Mask_RCNN repo for Object Detection, VGG-16 Neural network for classification.

**Objectives of the project :** Create a PoC tool for detecting Damages to Car's exterior from Photos

**Major Learning Outcomes :** Mastery of image based Machine Learning, using Neural Networks.

**Brief Description of working environment, expectations from the company :** UST Chennai does not give PPOs. No LORs either, for sure. Company has no value for BITS students. Most of us were made to do projects that were not well thought-through and there is no technical help from anyone. Learning outcomes were limited because of lack of support. They still expect all deadlines to be met by us, figuring everything out on our own. The only positive thing is that you can be sure of getting a project and doing some work; also, company generally allots projects suited to your area of experience (as per submitted CV). I was happy to work on Machine Learning.

**Academic courses relevant to the project :** Neural Networks and Fuzzy Logic

## Name : Akash Goyal (2015A2PS0811P)

**Student Write-up**

**Short Summary of work done during PS-II :** The first project was aimed at

building a web application using Spring Framework and JAVA as the coding language, MySQL was used to maintain the database and the second project was aimed at building chat bots using the company tool ICE-XD and one using Amazon Developer Account which was integrated with Amazon Alexa to build a voice chat bot.

**Tool used (Development tools - H/w, S/w) :** Spring Boot, MySQL, ICE-XD, Amazon Developer Account, Amazon Web Services

**Objectives of the project :** To build web application and Chat Bot

**Major Learning Outcomes :** The learning about the Spring framework was the highlight as that will help anyone to build any kind of application web or mobile.

**Brief Description of working environment, expectations from the company :** The work environment was good overall and the company is very active in cultural and sports activities. People here are very friendly and the experience is very good.

**Academic courses relevant to the project :** Object Oriented Programming

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## *PS-II Station: UST Global, Kochi*

## Faculty

### Name : Dr. Sindhu S

## Student

### Name : GEETHKRISHNA R (2014B5A80587G)

**Student Write-up**

**Short Summary of work done during PS-II :** We developed a testing framework with features such as file validation, database validation, web testing etc using python and robot framework, with continuous delivery using Jenkins and Jira. We also worked on completing a web application for an ROI calculator of various tools using java, jsp, html, css etc.

**Tool used (Development tools - H/w, S/w) :** Pyhton, Robot Framework, Java, Eclipse, HTML, Jenkins, Jira

**Objectives of the project :** To create a complete testing framework with CI/CD

**Major Learning Outcomes :** Learned about creating an actual project, and learned

**Brief Description of working environment, expectations from the company :** Friendly environment

**Academic courses relevant to the project :** CPP, OOP

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## *PS-II Station: UST Global, Trivandrum*

## Faculty

### Name : Dr. Sindhu Nair

## Student

### Name : Harsh (2015A3PS0258G)

**Student Write-up**

**Short Summary of work done during PS-II :** I worked on the problem of traffic flow optimisation using quantum computing.

**Tool used (Development tools - H/w, S/w) :** python, qbsolv(python library by D-wave Systems), maps(to plot output of the vehicles' paths)

**Objectives of the project :** To find the routes between a source and a destination, such that traffic is minimised in each path, using quantum computing

**Major Learning Outcomes :** I learnt about quantum physics and quantum computing and its application in real life problems.

**Brief Description of working environment, expectations from the**

**company :** The working environment is very friendly with flexible office hours and I learnt and enjoyed a lot throughout my PS-2 project.

**Academic courses relevant to the project :** C(for basic programming), Quantum Computing

## Name : Abhinav Taneja (2014A8PS0463G)

### Student Write-up

**Short Summary of work done during PS-II :** We created 2 applications on blockchain (ethereum). One of them being Proof of existence use case. In this web service, a person could upload an idea/music/video/pdf or any file, it will be taken an uploaded in a decentralised way on IPFS and sha256 hash of it will be recorded immutably on ethereum smart contract with a timestamp to prove your ownership of intellectual property/land registries or similar contracts like bonds, insurance .
The 2nd Project being the prevention of theft use case. We developed a decentralised databse of blacklisted numbers so that no carrier in any region of world (if in consensus) will provide service to that phone.
Other project I took up single handedly was developing an Alexa enabled feedback Response app using amazon's services for buiding voive front-end and AWS lambda and DynamoDB. It was completed in 3 days and taught me how to take a boiler plate code and turn it into a useful app overnight. Also it taught me how to take design decisions. This was one of the most challenging tasks i completed which build my confidence.

**Tool used (Development tools - H/w, S/w) :** Blockchain Team: Ethereum [Solidity to code Smart contracts], NodeJs to write API's in backend, React Native (front-end), Docker (Containerisation), Linux, AWS to host/deploy (EC2 Ubuntu instance), Web3 Module, Infura service (Replaced Geth - local node), GitLab - for Version Control
Alexa: Amazon developer console, AWS Lambda (NodeJs), AWS DynamoDB

**Objectives of the project :** To leverage properties of blockchain like Immutabiltiy and Decentralised Nature

**Major Learning Outcomes :** Mostly there are philosophical learnings to adapt to tech world rather than merely getting hands on with tech stack provided, as it's the major difference between a student and an employee. How to dive in completely new technology and create deliverable out of it filtering just the necessary stuff to speed up the process, simultaneously spending weekends to read for diving into depths to innovate.

**Brief Description of working environment, expectations from the company :** This company has one of the best campuses (office) in country. The place (Trivandrum) is really peaceful which gives Bitsians the necessary reboot they

need which is not possible in crowded and polluted cities where other IT hubs are formed like bangalore/hyderabad/Gurgaon etc.
Coming to work culture, working in an MNC teaches us a lot of things which are were organised in an extremely efficient and interesting way. Mentors are one of the greatest teachers I've ever had to brought in a lot of ideas which I might not even have imagined. They listen to you and appreciate you. There's a lot of flexibility in terms of projects which you want to use. The best part is that they are using the latest technologies which I going to be greatly useful in our careers. This place hosts plenty of technical, cultural events to stimulate our creativity and impose liveliness in employees. This place is heaven for a nature lover who is a technology freak as well! Just to add to it: I got my job off-campus solely on the basis of projects done here, which saved my time from competing in on-campus placements and landing into different projects which I might not like. I got an opportunity as a blockchain developer at a decent pay.

**Academic courses relevant to the project :** Cryptography (Only if you want to understand the research part), Object oriented Programming, Data Structures and Algorithms (minimally used), C programming

### Name : Saurabh Sharma (2014B4A40801G)

**Student Write-up**

**Tool used (Development tools - H/w, S/w) :** Python, R, Apache Kafka, ELK Stack

**Objectives of the project :** To create a real time data analytics architecture for a US retail chain

**Major Learning Outcomes :** R, Python

**Academic courses relevant to the project :** C Programming, OOP

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## *PS-II Station: UST-GLOBAL, CHENNAI*

## Faculty

### Name : Dr. Padma Murali

## Student

## Name : ABHIN MR (2015A3PS0276G)

**Student Write-up**

**Short Summary of work done during PS-II :** Machine Learning Project(ALPR) , DBMS

**Tool used (Development tools - H/w, S/w) :** OrientDB,MongoDB,Elastic search, Outsystems

**Objectives of the project :** To make a working model of Automated License Plate Recognition and verifying the license plate with the existing database. 2. Making an app to maintain the log details of the user.

**Major Learning Outcomes :** Database, REST API

## Name : VENIL REDDY (2015A4PS401P)

**Student Write-up**

**Short Summary of work done during PS-II :** Created a payment automation mechanism software ,Worked on graph databases and mobile application development

**Tool used (Development tools - H/w, S/w) :** Mongodb,Outsystems,ALPR

**Objectives of the project :** To create a payment automation mechanism software

**Major Learning Outcomes :** Java,Outsystrmd

**Brief Description of working environment, expectations from the company :** The working environment ws encouraging and projects were engaging but the manager had no knowledge of IT and that was an issue.

## Name : Vaibhav Goswami (2015A8PS0413G)

**Student Write-up**

**Short Summary of work done during PS-II :** Machine Learning project in the field of Image Analytics & Computer Vision. Our Supervisor gave us complete

freedom to research about the new technologies to try out in the course of learning. We had an amazing feedback from others in UST-Chennai.The project was completed and was taken over by Trivandrum Center.

**Tool used (Development tools - H/w, S/w) :** Machine Learning, OpenCv, Convolutional Neural Networks, Image processing libraries like keras .

**Objectives of the project :** To create a machine learning capability to automate Car Damage Detection and Estimation.

**Major Learning Outcomes :** Proficient in Python & Mastery in Computer Vision and Image Analytics domain.

**Brief Description of working environment, expectations from the company :** The organisation does not care about BITS students, if you compare this station with others, this station does not give any perks and incentives. Working environment is good, they just want the tasks to be completed with the allotted time. We were lucky to be allotted to this project, other students of this station were not given good projects and were not assigned any technical mentor. No PPO offered.

**Academic courses relevant to the project :** Machine Learning, Neural Networks And Fuzzy Logic

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## *PS-II Station: UST-GLOBAL COCHIN*

## Faculty

### Name : SINDHU NAI

## Student

### Name : ARJUN ANIL

**Student Write-up**

**Short Summary of work done during PS-II :** Modified the website ROI_Calculator to incorporate real time changes.Completed automation testing of website magento using NoSkript by creation of 185 test cases.Created a programme for the automation of a QR-Code reader from generation to reading of it in using a physical device.

**Tool used (Development tools - H/w, S/w) :** NoSkript,Eclipse,Java,Selenium.

**Objectives of the project :** Automation of the complete flow of the website magento.

**Major Learning Outcomes :** Learned Java and automation testing.

**Brief Description of working environment, expectations from the company :** Working environment was very employee friendly.

**Academic courses relevant to the project :** OOP

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## *PS-II Station: Vasant Chemicals Pvt Ltd*

## Faculty

### Name : Prof. Samir Kale

## Student

### Name : Amol Joshi (2013A1PS0487G)

**Student Write-up**

**Short Summary of work done during PS-II :** Developed a uniflow process for MANCAT production

**Tool used (Development tools - H/w, S/w) :** ASPEN

**Objectives of the project :** Streamlining an existing process

**Major Learning Outcomes :** Proficiency in ASPEN

**Academic courses relevant to the project :** Process Design Principles I and II

# *PS-II Station: Viacom18 Media Pvt Ltd, Mumbai*

## Faculty

### Name : Pawan Kumar Potdar

## Student

### Name : Rachit Agrawal (2014B1A30373P)

**Student Write-up**

**Short Summary of work done during PS-II :** Data Analytics, Business Intelligence, Product Testing & Development, Sales Pipeline Optimization

**Tool used (Development tools - H/w, S/w) :** R, JQL (JS), Mixpanel, VBA, Excel, BARC-BMW, Power BI, Lotame, Power-point.

**Objectives of the project :** 1. Sales Process Efficiency through Automation and Re-engineering, 2. Management of Voot Audiences through Data Enrichment

**Major Learning Outcomes :** 1. The business dynamics of Media Industry.
2. Utilization of Data Analytics for Client Acquisition and Strategy Planning.
3. Excel/VBA (Advanced), R, JQL, Data Visualization Techniques

**Brief Description of working environment, expectations from the company :** Ultra chill company culture, can't expect for a better PS station in terms of learning and chill balance. But NO PPO, as they only hire IIM/ISB grads.

**Academic courses relevant to the project :** Probability & Statistics, Set Theory (Highly used)

### Name : Bhavya Gujral (2014B1A40860G)

**Student Write-up**

**Short Summary of work done during PS-II :** Generation of key performance indicator reports for the leadership team of viacom18 and automating this weekly MIS

procedure using macros in excel reducing the human intervention to a bare minimum. Gained basic knowledge of the metrics used in the media industry to judge the success of a TV show or a channel and fundamental working knowledge of the media software like BARC and Mafras. Enhancing the usage of organization wide business intelligence dashboards for a quick and better analysis that can be done by all the business units of the entire company has helped in reducing the entire manual data extraction and analysis (multiple times) for individual analysis. The episode tagging code written has reduced the complexity of reading data as manual filtering of original and repeats has been omitted and the ratings for original programs is not affected by the lower ratings of the repeats thus helping in streamlining the data more and funneling to a better insight from the analysis.

**Tool used (Development tools - H/w, S/w) :** Microsoft Excel, VBA, R programming, BMW (BARC Media Workstation), MAFRAS Audience report generator, Power BI

**Objectives of the project :** To automate the weekly MIS process and generate meaningful BI dashboards

**Major Learning Outcomes :** Automation using macros in Microsoft excel, Power BI tool dashboard creation, Analysis using R programming

**Brief Description of working environment, expectations from the company :** The working environment is very organic in nature. There is no lock in period and working hours are also flexible. The company is a highly data driven media organization and the insights from the analysis done by the data science team are taken seriously by the business units of the company. In all, the work culture is pretty great enhance the productivity of the employees and at the same time isn't bothering with the work life balance. The policy of hiring in the company is such that they don't offer pre-placement offers and have a placement procedure that an intern has to follow to get a full time offer.

## Name : Sameer Kumar Singh (2014B3A10747P)

### Student Write-up

**Short Summary of work done during PS-II :** Worked in the Corporate Strategy and Data Sciences Team. Utilized data week-on-week to predict the optimised ad break patterns for the coming week for Viacom18 portfolio TV channels viz. Colors Kannada PT and Colors NPT. Post-analysis of the performances of Sonic Nickelodeon episode scheduling project, Rishtey Cineplex movie scheduling project and Break-in-Break-out impact isolation on the pilot channels. Generated trends for Audience Retention, Program and Ad viewerships, Adherence of recommendations, Impact, Uplift, Market Share, among others for various projects of the team.

**Tool used (Development tools - H/w, S/w) :** Excel, R, VBA, BARC,

Powerpoint

**Objectives of the project :** To improve various viewership metrics for Viacom18 TV channels so to generate improved ad revenues in our TV vertical

**Major Learning Outcomes :** Data analytics, how a media company functions

**Brief Description of working environment, expectations from the company :** High ownership, encouraging work culture, supportive team

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# *PS-II Station: VMware*

## Faculty

### Name : Chandra Shekar RK

## Student

### Name : Kshitij Sharma (2014B5A70770H)

**Student Write-up**

**Short Summary of work done during PS-II :** Worked on the UI & Backend for SDDC-Manager and solved some bugs

**Tool used (Development tools - H/w, S/w) :** UI :Angular , Typescript . Backend : Java , Spring-Boot

**Objectives of the project :** Software-Development

**Major Learning Outcomes :** Working with angular & spring-boot

**Brief Description of working environment, expectations from the company :** The environment is apt for work , the company is leader in cloud virtualisation
you can expect a friendly environment , work may vary depending on the team you are assigned to ( testing , backend , ui ) . The conversion rate is pretty good even if there is no opening in your team you will be given numerous opportunities to get mapped into other teams .

**Academic courses relevant to the project :** OOPS , Principles Of Programming Language

### Name : Diwanji Vedant Milind (2015A7PS0107G)

**Student Write-up**

**Short Summary of work done during PS-II :** Worked on the development of SDDC Manager which is a proprietary of the VMware Cloud Foundation. Developed various pages as part of the UI team using the Angular Framework.

**Tool used (Development tools - H/w, S/w) :** Javascript, Spring boot, Angular

**Objectives of the project :** Software Development

**Major Learning Outcomes :** Spring Boot, Angular, Development Testing

**Brief Description of working environment, expectations from the company :** Working environment is good. The people are very friendly and help solve your doubts. They also believe in having a healthy discussion in relation to developing designs. The company expects one to have a good programming background and willingness to learn as the products require a good amount of time to review.

**Academic courses relevant to the project :** Object Oriented Programming, Computer Programming

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## *PS-II Station: Wealth India Financial Services Pvt. Ltd*

## Faculty

### Name : Anjani Srikanth Koka

## Student

### Name : Vikram Singh Chandrawat (2015A2PS0852P)

**Student Write-up**

**Short Summary of work done during PS-II :** SIP with Insurance, being an exclusive product, everything had to be done from scratch for the investment in portfolio. Though there was option to invest in single AMCs, it wasn't good in functionality, usability and visuals. So it needed a new design too. Firstly, the product requirement document was created and all the requirements were extensively written considering all the use cases, back-to-forth. This included Quickreg flow and existing user flow on all our platforms- web, mobile, android app and ios app.

**Tool used (Development tools - H/w, S/w) :** GA, GAMOOGA, JIRA, etc.

**Objectives of the project :** The objective behind this project is to create concept designs for existing product modules. It includes generating ideas that will increase the user engagement and retention on our platform be it either app or web. This is done through benchmarking, conducting usability studies with customers, identifying customer pain areas and some other steps. On the basis of these steps, we focus on improving the design and functionality of the product.

**Major Learning Outcomes :** Building any product is an extensively iterative process. We have to first understand the product requirement end-to-end, including the happy flow, exception and edge cases. Following this we devise the strategy of approach as how will we solve the problem. In case of a design-oriented project, we begin with a wireframe and then produce a first cut of the design and after numerous iterations, alterations, final design is selected and forwarded to developers. As a product manager, you have to look at all the aspects, all the impact it will cause to other products and the impact other products will cause to yours.

## Name : Arghae Singh (2015A4PS0351P)

**Student Write-up**

**Short Summary of work done during PS-II :** Work done on referral marketing and Search Engine Optimization. Worked on the User Interface, data, mails, notifications etc. Improved the ranking by using various SEO techniques in the company's blog.

**Tool used (Development tools - H/w, S/w) :** Google Analytics, Gamooga, Ahrefs, Jira

**Objectives of the project :** Top increase the referral numbers of the website as well as mobile and increase organic traffic to the site

**Major Learning Outcomes :** Learned about UI design, How to make a product easy to use and improve SEO of any website

**Academic courses relevant to the project :** Had to learn everything from scratch

## Name : Akshat Srivastava (2014B3A40548G)

**Student Write-up**

**Short Summary of work done during PS-II :** Studied and analyzed the Onboarding Workforce of FundsIndia and provided necessary recommendations and suggestions for innovation.Identified advisor specific factors that affect lead count and estimated the lead count, connected and total calls that should be made by an advisor per day. Studied the relevance of different connectivities especially attempt connectivity. Submitted daily reports representing the 5-minute calling status for the onboarding advisors. Proposed a point calculation system for ranking advisors based on their performances.

**Tool used (Development tools - H/w, S/w) :** R, MS-Excel, SQL

**Objectives of the project :** To study and analyze the Onboarding Workforce of FundsIndia and provide necessary recommendations and suggestions for innovation. It majorly focuses on developing metrics to measure the efficiency and productivity of an advisor.

**Major Learning Outcomes :** The Workforce Management Role at FundsIndia involved a lot of independent data analysis to suggest ideas for innovation capable of incorporating within the division's process. These include advisor specific lead count allocation, identifying unique customers from calls, finding the attempt connectivity for dialer and landline, Calling regusers within 5 minutes of registering and also gamification and leaderboard.

**Brief Description of working environment, expectations from the company :** Working environment is good and encourages independent working. Wealth India should focus more on developing systems that make interns more inclusive in the company.

**Academic courses relevant to the project :** Data Analysis Using R & Excel

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# *PS-II Station: Worley Parsons India, Hyderabad*

## Faculty

## Name : Vinay Belde

# Student

## Name : Saksham Fotedar (2014B3A80659G)

**Student Write-up**

**Short Summary of work done during PS-II :** Conversion of scanned images to CAD files involved template matching, optical
character recognition, and line segment detection. Template matching finds templates(reference) in small parts of an image which match the template. OCR helps converting images of typed, handwritten or printed text into machine-encoded text, to be placed later in the CAD file at appropriate coordinates. LSD is a API of OpenCV-Python, used to detect lines in an image with false detection control.
For Document Classification we made use of Natural Language Processing, which involves the interaction between computers and human (natural) languages.
For Flaw Detection in placement of Document Tags, we used CNN, trained in-house on images converted from PDFs, to differentiate between right and incorrect placement of Document tags (overlapping text, figures etc.).

**Tool used (Development tools - H/w, S/w) :** Python, tesseract, OpenCV, Natural Language Processing, Convolutional Neural Network

**Objectives of the project :** Automating processing of documents

**Major Learning Outcomes :** Worked using Python for Computer Vision, Optical Character Recognition, Language Processing

**Brief Description of working environment, expectations from the company :** Colleagues and Supervisors are quite friendly and helping. There is always enough time to learn new stuff which you are asked to work on or implement for the ongoing project.

**Academic courses relevant to the project :** Machine Learning, Neural Networks, Artificial Intelligence

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# *PS-II Station: WorleyParsons, Mumbai*

# Faculty

## Name : Pavan Potdar

# Student

## Name : Vaibhav Sanghi (2014B5A80634G)

**Student Write-up**

**Short Summary of work done during PS-II :** During the development of the chat-bot, for understanding of the language and give correct results for every user input, we have used Microsoft's LUIS API. We trained the AI to understand the intent behind a given user input and give the desired result based on the entity it recognizes.
To develop the architecture for deployment of Machine Learning Programs on the Geographic Information System, we created our own sample program, and developed the architecture using that as the basis. It will be able to support other programs in the future.
For development of Access Control on the Geographic Information System (GIS) web application, we used database to store the access level of a particular user. Meanwhile log-in was handled using Microsoft Azure, which WorleyParsons already avails service of, and it was incorporated in the web-app.

**Tool used (Development tools - H/w, S/w) :** NodeJS, Python

**Objectives of the project :** Built GIS based Health and safety application

**Major Learning Outcomes :** Learnt Web Development

**Brief Description of working environment, expectations from the company :** Working Environment is conducive. They support you to complete your task in all ways possible. They also provide all the resources you need to complete your task.

**Academic courses relevant to the project :** Machine Leaning

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# *PS-II Station: Xilinx*

# Faculty

## Name : Vinay Belde

# Student

## Name : Siddhant Thakuria (2014B1A30466P)

**Student Write-up**

**Short Summary of work done during PS-II :** I worked on performance analysis tools development. My work was on noc analysis. Besides this I worked on DDR, AXI.

**Tool used (Development tools - H/w, S/w) :** Python, C++, System C, MYSQL, SQLite

**Objectives of the project :** To develop efficient tools so that the performance of noc could be evaluated

**Major Learning Outcomes :** Learnt python, c++,cmake ,perforce and corporate politics

**Academic courses relevant to the project :** C programming.

## Name : ADITYA VISWAKUMAR (2015A8PS0457H)

**Student Write-up**

**Short Summary of work done during PS-II :** ENGINEERING DESIGN AUTOMATION.
Developed tools to monitor various parameters of FPGA devices. The tools to monitor following parameters were developed.
1- Leakage Current .
2- Failure In Time.
3-Trend analysis of device models.
4-Device selection subject to resource constraints.

**Tool used (Development tools - H/w, S/w) :** S/W - Linux, Apache , MySQL , PHP, Vivado. jQuery, High charts, Google Charts. chart.js

**Objectives of the project :** Development of tools to monitor various device

parameters.

**Major Learning Outcomes :** 1- Got an insight to Full Stack Development.
2- Learned about FPGA architecture.
3- Leaned various webpage developemnt frameword

**Brief Description of working environment, expectations from the company :** Working Environment - Cubicles where alloted with allow necessary resources need for work.

**Academic courses relevant to the project :** c programming.

### Name : Sri Harsha Kariveda (2015AAPS0196H)

**Student Write-up**

**Objectives of the project :** PERL scripting

**Brief Description of working environment, expectations from the company :** The people here are really nice. Managers are extremely kind and friendly. Overall a very good environment to work in.

**Academic courses relevant to the project :** Computer Programming , ADVD

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## *PS-II Station: Zinnov Management and Consulting, Bangalore*

## Faculty

### Name : Anapoorna Gopalan

## Student

### Name : Srishti (2015A5PS0868H)

**Student Write-up**

**Short Summary of work done during PS-II :** Zinnov is a strategic consulting firm, while working in zinnov I got great exposure to consulting projects and learned about different industries like automotive, healthcare etc.I really liked the work and my team MESP (Market expansion for service providers) helped various service providers like Wipro,Quest global,TCS etc with strategies to enhance their revenue and help them grow. Apart from work, the office culture was just amazing, everyone was very helpful, patient ,understanding & acknowledged the work. We were exposed to client calls as well and got the essence of consulting. It was a great experience working in zinnov.

**Tool used (Development tools - H/w, S/w) :** Excel, PowerPoint

**Objectives of the project :** The project was Merger and Acquisition, helping service providers to acquire the required firms helping them to grow

**Major Learning Outcomes :** How consulting firms actually work, industry knowledge, confidence, believing in your work

**Academic courses relevant to the project :** Fundamental of finance & accounting.

## Name : MOHINI PANDEY (2015D2TS0991P)

**Student Write-up**

**Short Summary of work done during PS-II :** I had a totally new experience with an exposure to professional world and a team where every team member was ready to listen to your challenges and achievements and come up with better projects for you.

**Tool used (Development tools - H/w, S/w) :** LinkedIn search, Data analytics

**Objectives of the project :** Zinnov Zones IoT rating and Smart Manufacturing opportunity analysis in Automotive

**Major Learning Outcomes :** Data analysis tools, Data Collection, Opportunity insights

**Brief Description of working environment, expectations from the company :** The team was really really supportive in every way. One of the key features is there is no hierarchy and thus it makes you comfortable to approach team people with any problems.

**Academic courses relevant to the project :** POM, FundaFin, DRM

## Name : Rashi Singhal (2015A5PS0940P)

**Student Write-up**

**Short Summary of work done during PS-II :** Talent and Sales Analysis. Work with a team to prepare talent and sales decks according to market research, in accordance with clients' description

**Tool used (Development tools - H/w, S/w) :** MS Powerpoint, MS Excel, Linkedin

**Objectives of the project :** Talent and Sales Analysis

**Major Learning Outcomes :** Excelled in MS Powerpoint and Excel, Learnt new tools like CartoDb and more features of Linkedin, sales navigator and recruiter. Learnt to do market research effectively and get insights from various sources

**Brief Description of working environment, expectations from the company :** Friendly, flexible hours, helpful seniors. Have to learn on your own through experience while working

**Academic courses relevant to the project :** Principle of Management, Current Affairs

## Name : Rashi Singhal (2015A5PS0940P)

**Student Write-up**

**Short Summary of work done during PS-II :** I did market research to make talent and sales enablement decksaccording to client's specifications and provide insights on the same

**Tool used (Development tools - H/w, S/w) :** MS Excel, MS PowerPoint, CartoDb, LinkedIn, Sales Navigator, Recruiter

**Objectives of the project :** Talent analysis and Sales Enablement

**Major Learning Outcomes :** New features of MS Excel and PowerPoint, basic functioning of consultant, CartoDb, doing market research effectively

**Brief Description of working environment, expectations from the company :** Friendly people, flexible hours, helpful seniors
you can learn the basics of being a consultant while working in the firm. you can get a pretty good idea of corporate working culture here

**Academic courses relevant to the project :** Current Affairs, Supply Chain Management

## Name : Vedant Navandar (2014B4A20610P)

**Student Write-up**

**Short Summary of work done during PS-II :** GIC Landscape report:
Involving secondary research to find out data, analyze data and prepare a report on the current landscape of GICs in India.
Second phase included mapping ongoing works on new age digital talent for these MNCs

**Tool used (Development tools - H/w, S/w) :** Excel, Powerpoint

**Objectives of the project :** Preparring the complete GIC report.

**Major Learning Outcomes :** Excel, Research skills, Powerpoint, Decision making, Location Analysis, Verticals

**Brief Description of working environment, expectations from the company :** You'll be expected and taught to have a good knowledge of the Microsoft Suite. Working environment is cool and no one bothers you to keep on working all day. Need to stay full time and cannot leave if you have completed your assigned tasks. Chances of PPO are high, provided you work and present yourself well. Projected as management consulting but job is basically to do market research. Taking more leaves can be an issue.
You will improve on your soft skills, presenting abilities and MS office skills.

## Name : Kaushal Kisshor (2015A4PS0421P)

**Student Write-up**

**Short Summary of work done during PS-II :** The work was related to report building and presentation deck development.

**Tool used (Development tools - H/w, S/w) :** Microsoft office

**Objectives of the project :** To build report on GIC landscape in India

**Major Learning Outcomes :** Knowledge about various industries and digital technologies, deck designing and Microsoft Excel. Aaprt from this, soft skills were developed.

**Brief Description of working environment, expectations from the company :** Very healthy working environment, no heriarchy, everyone is very helpful and approachable.

## Name : Binoy A Sen (2015A1PS0604G)

**Student Write-up**

**Short Summary of work done during PS-II :** Work on providing talent analysis to key locations and key job roles according to the client's interest.

**Tool used (Development tools - H/w, S/w) :** Data Miner, Excel, Powerpoint, Carto,

**Objectives of the project :** Talent Analysis and Sales Enablement

**Major Learning Outcomes :** Attrition study, Data Visualization, Data Mining, Data Analysis,

**Brief Description of working environment, expectations from the company :** Working environment is pretty good , and makes you feel comfortable

## Name : Sudhir Gupta (2015A1PS0575P)

**Student Write-up**

**Short Summary of work done during PS-II :** 1. Consolidation of Startup Database
2. India Startup Landscape Report 2018

**Tool used (Development tools - H/w, S/w) :** Excel, Powerpoint

**Objectives of the project :** Help Client understand Indian Startup Ecosystem

**Major Learning Outcomes :** Startup functioning, focus area, technology focus, funding stages etc.

## Name : Shruti Verma (2014D2TS0973P)

**Student Write-up**

**Short Summary of work done during PS-II :** Worked to enable corporate to engage and collaborate with start-ups to drive tangible and meaningful business impact, helped with the outreach of two GIC's Corporate Accelerator Programs, helped with the speed-dating process of corporate and start-ups, standardised the workflow of the Speed Dating process, worked with a client to conduct their hackathon and created out-reach presentation for sessions

**Tool used (Development tools - H/w, S/w) :** Microsoft Excel, Microsoft Powerpoint

**Objectives of the project :** It was to help the client conduct a detailed analysis of Tech Start-up Landscape in India and to see where India stands in terms of Startup Ecosystem

**Major Learning Outcomes :** Data Aggregation
Data Curation
Data Analysis
Presentation Skills

**Brief Description of working environment, expectations from the company :** The working environment of Zinnov is extremely supportive, helpful accommodating. Every doubt because of road blocks have been entertained with utmost patience and timely feedback to help the overall growth and efficiency was provided.

**Academic courses relevant to the project :** Derivatives of Risk Management

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## *PS-II Station: Zinnov Management Consultancy Pvt. Ltd. - Gurgaon*

### Faculty

**Name : Sandeep Kayastha**

### Student

**Name : ANKUR JAIN (2015A2PS0450P)**

**Student Write-up**

**Tool used (Development tools - H/w, S/w) :** MS PowerPoint, MS Excel, MS Word

**Objectives of the project :** Acquired a good market knowledge of Digital practices and Market

**Brief Description of working environment, expectations from the company :** The word Zinnov is actually an amalgamation of 'zeal' & 'innovation'. To understand what kind of work Zinnov does, it is a mix of Gartner and McKinsey. Gurgaon station is a small team presently it has around 45 employees including interns. So I got to work here in small teams of 2-3 people which gave me a lot of exposure in its own way. The work is engaging here unlike big companies where you would do a little work some days. Gurgaon office offers consulting services in Digital Practices. It is more of research based work than front end consulting unlike most roles in PWC etc. It was however, a good learning experience none the less. I'm confident the social skills I picked up here will help me a long way in my career. I got to work on a lot of short assignments here. In a short span of 4.5 months, I got the opportunity to work on a total of 8 projects here. My role at Zinnov was more or like similar to the role of a Business analyst.

## Name : Mitali Jain

**Student Write-up**

**Short Summary of work done during PS-II :** Extensive primary and secondary research to make professional presentations, white paper for clients.

**Tool used (Development tools - H/w, S/w) :** MS Powerpoint, MS Excel, MS Word

**Objectives of the project :** To shortlist top 5 technology use cases in the Financial Services industry for the clients business.

**Major Learning Outcomes :** Gained the knowledge of Financial Services industry and that of the Retail industry.
Also learned making professional presentations.

**Brief Description of working environment, expectations from the company :** Work environment is fine; could sometimes be a little harsh, depending on the Manager and the project.

**Academic courses relevant to the project :** Fundamentals of Finance and Accounting

## Name : Saniya Dasot (2015A5PS0926P)

**Student Write-up**

**Short Summary of work done during PS-II :** Worked on 4 client projects -
1. Global IoT Security : Market Opportunity Assessment
2. Strategy to Accelerate Enterprise Digital Products in the Healthcare vertical
3. Setting up of a Global Development Center for a global Shipping company
4. India GIC Opportunity Analysis for RPA

**Tool used (Development tools - H/w, S/w) :** Microsoft Excel, PowerPoint

**Objectives of the project :** 1. Identification of the available and addressable market size of IoT Security segment, deep dive across key verticals i.e. Energy/Utilities, Manufacturing, Auto, Smart Cities/Buildings, Retail and Healthcare and identification of current and future use cases 2. Helps the client in Industry Prioritization, Industry Use case analysis and subsequent opportunities, and developing a business plan and roadmap 3. Analysis of opportunities and threats in setting up of a Global Development Center in India 4. Identification and analysis of relevant GICs in the BPM space to target for automation specific opportunities

**Major Learning Outcomes :** Analytical skills, Problem solving, Customer retention and success, Ability to take initiatives, Professionalism

**Details of Papers/patents :** -

**Brief Description of working environment, expectations from the company :** Work environment is good. Zinnov follows an open door culture and the senior leadership is very approachable.

**Academic courses relevant to the project :** Principles of Management, Principles of Economics

## Name : Neeraj (2015A2PS0654P)

**Student Write-up**

**Short Summary of work done during PS-II :** The work was quite interesting. It included secondary research, primary research, making deck for presentations.I got a number of projects here. Zinnov is not much bigger firm so the exposure i got here was quite good. I learnt many things through my projects.

**Tool used (Development tools - H/w, S/w) :** MS Excel, MS Power point

**Objectives of the project :** To study the performance of Large Enterprises in India

**Major Learning Outcomes :** Large enterprise are a major contributor to Indian economy. Digital adoption is increasing at a very rapid pace vertical-wise. Major evolving technologies are - AI, IoT, RPA, Blockchain,AR/VR.

**Academic courses relevant to the project :** Financial Management, Principles of Management