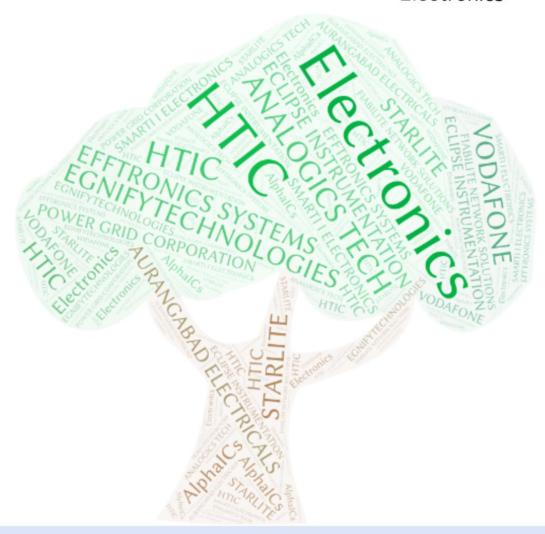# CHRONICLES

Electronics

PRACTICE SCHOOL - I

Summer - 2019

From the Desk of the Editor

It is my great pleasure to bring forth the inaugural edition of the PS-I Chronicles. This edition features over 2243 articles from PS-I students sharing their experiences during summer 2019.

The basic premise behind the release of PS-I Chronicles is to document the PS-I learning experience of students keeping the below objectives in view.

➢ To provide more information on the learning experiences by immediate senior students and PS-I faculty about stations, and thereby enlightening the learning opportunity among the student community.

➢ To provide the faculty with the enhanced information about the type and nature of work carried out at the organization.

➢ To transform the knowledge gained at the organization into class room teaching and also to identify the scope of deepening the collaborations with organization.

The articles have been classified into six categories based on the industry domain.

➢ Chronicle 1: Information Technology

➢ Chronicle 2: Electronics

➢ Chronicle 3: Chemical, Mechanical, Cement, Textile, Steel, Infrastructure

➢ Chronicle 4; Health Care and other

➢ Chronicle 5: Finance and Management

➢ Chronicle 6: Government Research labs.

I would like to thank students for sharing their experiences during their stint at the organization. I would also like to thank Prof. Arun Maity and Prof. M. K. Hamirwasia for reviewing the articles and providing us the feedback. I would also like to extend my thanks to Mr. Om Prakash Singh Shekhawat, Prof. S Murugesan, Dr. G Muthukumar and Mr. Varun Singh of the Practice School Division, of BITS, Pilani – Pilani Campus for their help in bringing out this edition of PS-I 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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Domain: Electronics

PS-I station: Aurangabad Electricals , Aurangabad

Student

Name: Onkar Deshmukh (2017A3PS0255P)

Student Write-up

Short Summary of work done : There were 3 projects alloted. 1. ALARM TRIGGERING USING HUMIDITY SENSOR; 2.JOB LIFECYCLE MANAGEMENT AND TRACKING;3.COOLANT OVERFLOW CONTROL SYSTEM. The goal of the first project is the identification of the dehumidifier status by sensing the humidity of air and the subsequent notification of the user if it is found to be undesirable. This is to be implemented using a moisture sensor which will sense the humidity in the air to trigger an alarm if it is found to be outside user parameters.
The goal of the second project was to aid in tracking of the firm's inventory by exploration of solutions for the same. Each job produced in the plants and their performance test data must be recorded and stored for easy recovery when the jobs return in case of failure. This is to be accomplished by assigning each job a unique identification number and finding a solution to aid in the same.
The objective of the third project was to solve the problem of overflow of coolant from all three of the HMC machine coolant tanks, under the conditions prevalent.

PS-I experience: It was my first hands on experience in an industry. We were asked to solve the pain areas in the industry and these were problems which they faced since years. It was a great experience to do a project which will have a real life impact. Overall a nice e

Learning outcome: We learnt how to work in a team, we had to do extensive research and then come up with a feasible solution. Technically, too, I used the knowledge of EEE in the projects. We understood how an industry functions.

PS-I is an exposure oriented course: Yes, because this is the first experience of and exposure to an industry for most of the students.

Name: Kaustubh Atul Yawalekar (2017A4PS0417P)

Student Write-up

Short Summary of work done : Observation of processes in more detail in an HPDC(High Pressure Die Casting) plant to make brakes,crankshafts,engines.Figured out the key processes of the plant and then thought of the areas that can be improvised.Made a flowchart of the processes.Studied the plant layout. Also observed the hierarchy of executives and jobs in the company.

We learnt about each section of the plant,namely Pressure die casting,assembly and paint shop working.We tried to reduce the involvement of labour who are exposed to high risk due to steam and molten aluminium in HPDC machines.I Co-related well with the theory learnt in 2nd year Mechanical enggineering. Assembly line working, differenciation of areas/process where human/machine use will be efficient and economic.

I gave proposals to deploy Monorail systems and thus replace forklifts.

We Proved and suggested that Electric forklifts are economical than diesel ones. Suggestion of an alternate electric machinery that can completely replace Forklifts was the biggest task we accomplished.We analysed:

DC 12 PDC Machine

EDC Machine;

Furntek & Striko furnaces; Ventilation pumps of 1&2HP capacity;Forklifts

We observed industrial processess that are involved in manufacturing of automotive parts. e.g. front and rear brake plates, engine casings etc. Mapping of the process and identifying areas where it is possible to optimize it to reduce cost or time.

We intend to analyze the processes involved for high pressure die casting and try to optimize the costs incurred in the processes.

Conveyor belt mechanisms is also the area we worked on.

PS-I experience: My PS 1 experience was good and satisfactory one.I believe that it was good for all those who seriously devoted attention and earnestly worked to bring about a change.I could co-relate well with the Mechanical Engg Theory of 2nd Year.

Learning outcome : We learnt about the assembly line production;Monorail systems;Ventilation pumps of 1&2HP capacity;Electric,Gas,Diesel Forklifts of 1.0,1.5,3.0,4.0 Ton capacity;Various equipment related to molten metal handling;Cranes and conveyor belt systems.

PS-I is an exposure oriented course : Indeed, this is what helped me to clearly figure out what a Core Mechanical Company Job could be like. I am grateful to BITS for such program.My instructor was strict and he motivated us to do something productive.His urges and pushes helped us in being discipline.

PS-I station: Faregeo Technologies , Bangalore

Student

Name: Vinay U. Pai (2017A3PS0131P)

Student Write-up

Short Summary of work done :
Development of a Wireless Server Network for application in IoT to collect and share sensor data. The objective of the project was to implement a wireless sensor network on given platforms such as the TI CC2650 and the TI TIVA C development boards. The CC2650's were to be implemented as nodes connected to a temperature sensor via UART communication. The gateway TIVA C then had an ethernet port via which the data could be transmitted to the cloud or to any particular IP address. The wireless communication is done via 6loWPAN, implemented in C language.

PS-I experience: PS-I gave very good exposure to embedded systems industry and IoT applications. Employees at organisation helped us understand the various aspects on how to approach the problem and building a Wireless Sensor Network.

Learning outcome : We explored several ways of sending this data, and successfully implemented UDP, TCP, and Modbus TCP on Tiva C for transmission of this sensor data.Over the course of this project, the development of a basic WSN was learnt. While the number of nodes used

PS-I is an exposure oriented course : This is a true statement as we gained a lot of exposure on the IoT and the embedded systems industry. We got hands on practical knowledge that can't be gained by a course in college.

Name: Rittvik Saran J (2017A8PS0251P)

Student Write-up

Short Summary of work done : The main aim of the project given to us was to implement a Wireless Sensor Network(WSN) which can be connected to a cloud server through the gateway .Each node in the network has a sensor attached whose data would be sent to

the router and from there to the gateway. The latter uses a serial link over which standard Modbus protocol was implemented.

PS-I experience: Quite enriching and informative. Since it was a startup the scale may have been small but the people were easy to approach and hence helpful in clearing doubts and learning .

Learning outcome : Exposure to the field of Embedded with focus on Iot and its practical applications.
Also worked on implementing of standard protocols which gave an idea on the standards followed in the industry.

PS-I is an exposure oriented course : Agree with the statement as it allows us an idea of what careers paths are availaible and what a job actually entails and what a company expects from us.

PS-I station: H.B.L. Power Systems Ltd. , Hyderabad

Student

Name: Aditya Joshi (2017A1PS0027P)

Student Write-up

Short Summary of work done : The work was related to optimizing a industry production process of Battery Grade Nickel Hydroxide production especially the mass transfer operations in the reactor tank and filter press, required a bit of knowledge from separation processes and then it was all experimental work and literature survey. It also required knowledge of reaction rates and kinetics and how industrial factors affect those and how you can tweak little things to change the overall process rates.

PS-I experience: It was a good experience to see the application of basic Chemical Engineering principles, but mostly the work will require you reading and understanding other principles with a bit of experimental work.

Learning outcome : To learn how the lab scale experimental results are translated into industrial scale considering all sorts of factors.

PS-I is an exposure oriented course : It is an exposure to the real world job experience in whichever sector you have chosen and can help you decide whether that work environment is right for you or not all the while exposing you to the application of the principles in your courses.

Name: Preeti Ganesh (2017B1A30512P)

Student Write-up

Short Summary of work done : The title of our project is 'test zig for single phase full wave half-bridge rectifier'. A single phase full wave half-bridge rectifier is the working principle for battery charger in H.B.L. The rectifier has two diodes and two thyristors(and hence half controlled). The gate current is controlled by a pulse voltage which is controlled by the control card. A replica of the control card circuit was made in MATLAB (Simulink) and simulation was run for the same. The output firing pulse voltage was then extrapolated in the input sin waveform of the single phase full wave half-bridge rectifier and firing angle can be calculated.
PS-I experience: The industrial exposure was first of its kind and helped in building an experience, team work, and presentation skills.

Learning outcome : Learnt MATLAB Simulink

PS-I is an exposure oriented course : PS-1 definitely helps in providing an industrial exposure

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Name: C Mohan (2017A3PS0330H)

Student Write-up

Short Summary of work done : I was given the PS I in HBL Power Systems, in Hyderabad. The project was on test zig for thyristor controlled full wave half bridge rectifier. I was supposed to find the output rectified voltage and the firing angle. I started out analysing the given circuit and used Matlab software to simulate the circuit to get the desired output. I divided the circuit into five sections and then I simulated it and got the output. In the process I got to learn about many ICs used in the circuit and understood

the application of theory of power electronics. Thyristors was a new concept which i learnt here in HBL. I studied all sorts of microelectronic devices like BJTs which will be useful for my work and prepared a circuit model in Matlab simulink.

I will now describe about the circuit in detail, the first circuit is main which comprises of the thyristors which controls the direction of current in the circuit.

The final circuit comprises of pulse transformers and rest are all amplifying and filtering circuit. The design is being modified in certain places to get a significant output.

PS-I experience: It was more on practical usage of theory. The analysis is same and as per modern methods discovered the way of doing simulation changed to digital in matlab simulink rather than individually calculating the output.

Learning outcome : I learnt the professional approach of working. How to optimize and how industries take decisions by group discussions, and how to gather and analise information and prepare a report.

PS-I is an exposure oriented course : Yes indeed. I got a very good opportunity to learn how an industry works. I got some experience how a firm is managed. I got introduced to new software which is being used for industrial purposes. It has been a nice exposure oriented course.

PS-I station: HTIC , Chennai

Student

Name: Shreyas Murthy (2017AAPS0367G)

Student Write-up

Short Summary of work done : My project was about autofocusing a camera lens. I needed to achieve an accuracy of upto 0.1mm while focusing the lens. As an example, a lens might come into the market rated as having a focal length of 8mm. But, the exact focal length might be around 8mm, varying between (let's say) 7.5mm and 8.5mm. I designed a system that employs a feedback mechanism, to identify the point of highest focus for the lens. A stepper motor was coupled to the lens, to rotate the lens in very small steps, and images were captured simultaneously, to verify if the focus of the image has peaked.

PS-I experience: It was an interesting project, where I performed simulations related to optics to verify of the experiment would be feasible or not. I used a software called LabView, to control the feedback system that I designed. I learnt and implemented image processing.

Learning outcome : I got a better understanding of the concepts surrounding feedback, which is introduced to us in the subject Control Systems. I learnt about how image processing algorithms work, and implemented them as well.

PS-I is an exposure oriented course : Yes, it is true. I implemented concepts that I studied in my second semester of second year. And, I got exposure to work culture, and interacted with Ph.D. students of IIT Madras. The mentor that I was assigned to, was specialized in biomedical research and slightly more inclined into work related to optics. The experience was wholesome, and I learnt a lot in terms of technical knowledge, and work ethics.

Name: Aditya Ramachandran (2017A3PS0339P)

Student Write-up

Short Summary of work done : We built a functional search tool using a custom NLP pipeline built on top of spaCy to extract the functional relationship between two brain regions entered by the user from the given medical corpus. We used Google's PageRank for extractive text summarization, and applied coreference resolution through neuralcoref for state-of-the-art results. We also gained insight on cleaning data to extract relevant features, for doing the same in unstructured medical reports.
We tried our hands at web development to implement the search tool, using the Flask framework and Bootstrap. We also experimented with mongoDB as it was used to store the corpus, resulting in efficient and quicker user experience.
PS-I experience: My PS-1 experience was pretty good. The work the other guys are doing here was impactful and we had good work coming our way too. The work culture was pretty chill, and we had full freedom to go about our work as long as we completed it.

Learning outcome : Learnt how to code, which I had no previous experience in apart from the courses on campus. Dabbled in cutting edge research and built a base in Deep Learning. Got an insight into academia here.

PS-I is an exposure oriented course : I agree with this statement, as it gives you an idea of how all the theory you learn in college is actually used in the industry. Opens your eyes to certain fields and gives you a taste of work culture.

PS-I station: Power Grid Corporation of India , Gurgaon

Student

Name: Keshav Saini (2017A3PS0240P)

Student Write-up

Short Summary of work done : The organization first introduced us to the work culture of the corporate world, before briefly explaining critical technologies related to the transmission sector. We were sent on various site visits to centers like NTAMC, HVDC Station(Bhiwani) and R&D center(Manesar). Afterwards, we presented a ppt on what we had learned till then to the organization. This was followed by the PS 1 first presentation on the organization.
My Project was on effective integration of Renewable energy. I had to research on various technologies such as HVDC lines, FACTS and projects like GEC. My focus had been on the southern region(Andhra Pradesh in particular) as that region is expected to have the highest generation and penetration, and currently has inadequate infrastructure to transmit it.

PS-I experience: PS was a decent learning experience. The main aim of exposing us to the corporate world was successfully accomplished but it could have been better.

Learning outcome : Learning outcomes include:
1. Thorough knowledge about India's Power sector.
2. Basic principles of Power electronics
3. Basic principles of HVDC transmission
4. Flexible AC transmission systems.
5. Knowledge about key government legislations governing th

PS-I is an exposure oriented course : I agree with this statement. Exposure to the corporate world is the single most important aim of PS and , for me, it was successful in accomplishing this.

Name: Ishika Kumar (f2017A3PS0320H)

Student Write-up

Short Summary of work done : Undertaken various site visits to enable knowledge on the function of the power transmission sector. Learnt about various equipments such as transformers, relays and SCADA technology. Also learnt how a substation functions and what are the components. Moving on to the asset management part, my project is a study case of the role of Image processing in detecting defect in power lines and in general in the Power Transmission sector.

PS-I experience: It was very intuitive. Not only did we learn theoretically, but also visited the sites to get the actual knowledge on functioning of the equipments. Besides, we also saw the managerial aspect of the company through orientations.

Learning outcome : Management aspect and Image Processing

PS-I is an exposure oriented course : Yes, I have gained quite a lot of confidence in speaking after I gave multiple presentations and orientation. Besides, the GD not only helped me open up, but gave me an intuitive stance on the importance of work place.

PS-I station: Power Grid Corporation of India Limited , Bangalore

Student

Name: AASHYA (2017B5A30981P)

Student Write-up

Short Summary of work done : Our work here focused on the different components available in a substation. It is based on the function performed by each component .We learnt about the role that a component plays in the proper and efficient functioning of a substation.
In an electrical grid, the flow of power takes place through electrical substations. These substations comprise of different components such as busbars, transformers, isolators,

circuit breakers, lightning arresters, reactors, wave traps etc. This system has a lot of incoming and outgoing circuits. The incoming circuits supply power to the substation and the outgoing circuits represents the power delivered by the substation. The different components are arranged in a particular design depending on the different parameters of the substation, such as the power of the substation, the duties performed by the substation etc.

Here we focused on the different types of components in a substation to understand their functions and applications. The different variations of each component available in the market is discussed and studied. Through this we got an understanding of the advancements made in the field which has enabled for the efficient working of the substation.

So our main work areas included studying components like lighting arrestor, circuit breaker, isolator, earth switch, wavetrap, bus bars, line reactors and Transformers.
Since it is an electrical substation and everything is insulated, so most of our work was study oriented and not of any field work. Hence we learnt major concepts of the above mentioned equipments and we also worked on online dissolved gas analysis for Transformers along with oil drying mechanism.

PS-I experience: I got to learn about many things about a substation. PSI gives an opportunity to experience real time working in a corporate arena. It helps in the overall personality development. Also group discussions helped me to learn about some new stuff.

Learning outcome : We learnt about the different components in detail that comprise a substation. Basically we learnt about how an electrical substation works.

PS-I is an exposure oriented course : Definitely. It exposes us to the real time work that is going on in the corporate sector. Each evaluative of PSI is designed in a way that it contributes in the overall personality development of a person.

Name: Hardik Saxena (2017A3PS1504H)

Student Write-up

Short Summary of work done : The topic of our project was different protection schemes used in a substation which mainly focus on three major equipment used in a substation, viz., transformers, transmission lines and bus-bars. Firstly, we learnt about the switchyard equipment used in a substation like current transformers, capacitive voltage transformers, wave traps, isolators, circuit breakers, shunt reactors and many more. Then we studied

in depth about the transformers, transmission lines and bus-bars, what faults can occur, what are the causes behind the faults and what should we do to protect the damage to the component.

PS-I experience: PS-1 is a short term experience about what the professional life is going to be. It has group discussions, seminars, presentations etc which can improve your speaking skills, helps to know how to interact with new people and develop your overall personali

Learning outcome : As the name of the topic suggest we learnt about the protection schemes used in transformers, transmission lines and bus-bars and what all faults are there which can occur in these instruments. I think this will be helpful while doing the power systems course.

PS-I is an exposure oriented course : I support the statement, since its helps to understand how things work in professional life after our graduation.

PS-I station: Pyrotech Electronics Pvt. Ltd. , Udaipur

Student

Name: ANUJ HYDRABADI (2017A8PS0420P)

Student Write-up

Short Summary of work done : The project allotted to me was 'Automated drone maneuvering using ML and IoT'. The work was mainly research-based. We were supposed to build a framework for the project which the company would implement in the future in case they found it viable. It was based on the 'Smart City' project of Udaipur that the company has undertaken.

PS-I experience: PS I is a good way to bridge the gap between theory we learn in the institute and what we face in an industry. But at my station, not enough work was given that could help me bridge this gap. The company did not provide a technical mentor.

Learning outcome : I learned some necessary life skills, like communication, and how to deal with different kinds of people. I also learnt the working and heirarchy of a company as large as Pyrotech, and how all the units need to work together for the company to function effectively.

PS-I is an exposure oriented course : I agree with the statement. PS1 bridges the gap between theory and practice. We get exposed to the realities of working in a company, and can act as an eye-opener for many students.

Name: Dhawal Jain (2017A8PS0832H)

Student Write-up

Short Summary of work done : Project title is IOT based GSM Controlled Smart Street Lighting. We wanted to make the toggeling, dimming and controlling street lights completely electronic. As in with the use of a microcontroller, drivers, switches and a GSM module so that the light could be controlled via a private cloud service.
PS-I experience: Eye-opening. Got to know how different practicalities are.

Learning outcome : Learnt IOT mainly. Microcontrollers, GSM modules. Setting up a GPRS network using AT commands. UART communication. Setting up a private cloud. And then integrating all these.

PS-I is an exposure oriented course : Depends on the individual. It's definately exposure oriented, however may also be learning oriented if an individual is ready to put enough efforts.

Name: Nishtha Agrawal (2017A8PS0528G)

Student Write-up

Short Summary of work done : In PS-I, I worked as a Market Analyst for the Marketing department of the company. Pyrotech is basically a customized company which has its headoffice in Udaipur and various offices all over India.
Firstly, I was asked to make a flowchart which shows how actually the marketing department works for the company. Also got to know about the importance of marketing department for any industry.
I even got a hands on experience in tender filling. And has also surveyed the manufacturers and users of the products produced by Pyrotech.

PS-I experience: My PS-I experience was really nice. I wanted to experience a completely different field thats not technical and was able to do that so well. The company I worked for, did live upto my expectations.

Learning outcome : Got to know about a new website for the survey of manufacturers and users of the products produced by pyrotech.
Got hands on experience ith temder filling.

PS-I is an exposure oriented course : Yes, I would like to fully agree with the fact that PS-I is an exposure oriented course. As it actually exposes us, who are just the second year college students to the industrial work and pressure of deadlines.

PS-I station: SeeTech Solutions , Nagpur

Student

Name: Ashish Singh (2017ABPS1572H)

Student Write-up

Short Summary of work done : My work included making process flow charts, list of energy consuming equipments , list of energy efficient technologies and case studies for forging, foundry, die-casting and automotive industry.
PS-I experience: It was a learning experience for me.

Learning outcome : Working on this project and researching about process flow charts, energy efficient technologies and case studies has helped me in expanding my knowledge base about general manufacturing processes and industries.

PS-I is an exposure oriented course : Yes, definitely it is an exposure oriented course. One can get a taste about corporate world and how rules and regulations of a corporate office are different from college rules.

PS-I station: Smarti i Electronics Systems Pvt.Ltd , Pune

Student

Name: Siddharth Purohit (2017A3PS0351P)

Student Write-up

Short Summary of work done : Graphical user interface development and integration with the back end of a image capture system developed by the company based on Orange-Pi. Image push implementation using MQTT protocol from one cliemt to another client using conversion of image to base64 and converting back. I worked on and learned Java script, HTML, Python, MQTT protocol, CSS.
PS-I experience: IT was a good experience the company was very supportive and helpful uin all of our work from project allotment to project completion. Also the instrictor and SME helped and guided usnthrough the whole program.

Learning outcome : Learnt programming on HTML,Java Script, CSS,Python and studied amd worked on MQTT protocol.

PS-I is an exposure oriented course : Yes I got good company working environment exposure. How to meet the deadlines and worked according to a work plan were some important skills I honed while being on my PS-1

Name: Sparsh Wairya (2017A3PS0115P)

Student Write-up

Short Summary of work done : The project assigned to me and my friend was FACIAL RECOGNITION FOR VARIOUS RETAIL APPLICATIONS USING CLOUD SERVICES. Our project aims to design a platform to implement facial recognition and simultaneously maintain a database using a remote cloud server. We have implemented this idea by designing a Python Application Programming Interface to interlink our facial recognition application and different database management systems like MySQL, etc. As an output to a customer, we will be generating different reports based on the data collected in the database. As soon as an image is captured, operations like adding, updating and extracting of data will take place.

PS-I experience: Overall it was a great experience. The people in the organisation were very helpful. The project assigned to me was related to designing a framework for a system using python and it was pretty interesting.

Learning outcome : I learnt about various topics related to database management and back-end/framework development of a system. I also learnt how one works in an organisation.

PS-I is an exposure oriented course : Yes, I totally agree with the given statement. Working in an organisation is something completely different than working in a college team. It contributes a lot towards one's personality development.

Name: Sumukh Nitundil (2017A3PS0375P)

Student Write-up

Short Summary of work done : Worked on two projects :
1)Developement of a Modbus-MQTT based IoT framework for office automation using OrangePi. The framework polls multiple modbus devices and sends the data to a remote dashboard which can be viewed on one's phone, with access restrictions on both sides. The entire system is determined by 2 config files and the user_config file can be edited remotely by the user to set the parameters for each sensor (upto 15 parameters) which changes the dashboard accordingly. The program also sends historical data to an InfluxDB time series database which is visualised in Grafana. It is a back-end framework which gives a large number of user defined options for various applications and allows for expansion as nothing is hard coded and parameters are used to control all aspects of the system. The final framework was submitted to Smart I Electronics as a ZIP file complete with all required programs, config files and documentation so that it can understood and used by anyone with ease. The company will build an android based front-end on this framework and use it for office-automation.
2)Design, simulation and optimisation of a precision current source bias for RTD based PT100 temperature sensor. This is an analog project I took out of interest after I completed my first project. In this I took the existing current source used by Smart i, simulated and understood the circuit. I then proceeded to try several other designs using different op amp configurations and compared the performance of each using LTSpice. Along with this I also learnt basic PCB design from the PCB design engineer in Smart i and made a 555 timer based PCB for LED blinking on Eagle.
PS-I experience: Good experience. Great company with an immersive working environment and helpful mentors to guide you, not only in your main project but also with any other technical interests you may have.

Learning outcome : IoT system design (Python, Raspberry Pi, Modbus, MQTT. general IoT system design), PCB design (Eagle CAD), Analog circuit design (Opamp-Transistor based current source, LTSpice), Soft skills

PS-I is an exposure oriented course : TRUE

Name: Gargi Milind Patil (2017A8PS0408G)

Student Write-up

Short Summary of work done : I had to implement encryption in embedded devices. The encryption algorithm used was AES and had to be tailor made to protect data transmitted from one of the company's products on an ARM compiler. The challenges faced were lack of support for external libraries - no dependencies, and limited memory and power.
PS-I experience: Smart-i gives exposure to industry requirements related to IT and electronics. It gave a realistic glimpse into the corporate world. The projects were allotted according to our skill set and areas of interest.

Learning outcome : Encryption algorithms, networks and communication, C#, HTML, CSS,

PS-I is an exposure oriented course : I agree.

PS-I station: Vodafone Idea Ltd , Mohali

Student

Name: Ayush Mittal (2017B3A30793G)

Student Write-up

Short Summary of work done : I was briefed about various verticals of the company and their role and contribution for the successful working of this company.

Working under the transmission vertical, I studied the major modes of transmission used by the company, their complete mechanism using real-time data (of 3 states) and real-life examples. I studied the network circuit of a telecom company, the planning area, various criteria looked upon for expanding and improve their services and also the methods to monitor the existing services. The major areas of my project were Optical Fiber Operation and Transmission Planning for the states of Punjab, Himachal Pradesh and J&K.

A part of my project was to research on the network circuit of Punjab and propose new POP sites that can help in increase the productivity and efficiency the services provided by the company using various tools and criteria studied during the course of this PS. Surveying and testing the network circuit of Himachal Pradesh also helped the company in its proper functioning.

PS-I experience: My PS-1 experience was great. Working in such a professional environment gave me an opportunity to explore new domains in terms of areas I worked on and also the way of conducting your work.

Learning outcome : I got a deeper insight of the various verticals of a telecom company. Under the transmission vertical, I learn the mechanism used in transmission planning in terms of monitoring, improving and expanding the network services.

PS-I is an exposure oriented course : Yes, PS-1 is an exposure oriented course as you get an opportunity to explore new domains using real-life examples.

Name: Harkaran Singh Tandon (2017AAPS0259G)

Student Write-up

Short Summary of work done : We did a project on "Evolved Packet Core Gateway" in our PS station. Initially we went through the different departments in that office, then our mentor at the PS station gave us some topics to learn and understand about the call flow in 2G, 3G, 4G networks, gave us some introduction to cloud computing, IP networks etc. Then moving on to the project we had to analyze the traffic of data bandwidth flowing through different devices in an EPC network in Punjab, on a daily basis, for that we also had to study about the GPRS architecture in telecommunication. We analyzed the maximum data bandwidth of a device and to see that not too much of traffic of data flows through a device as it can affect the speed and efficiency of the data flow.

PS-I experience: The experiences of working as an intern at the Vodafone Idea Ltd., Mohali were very fascinating. I got to learn a lot of new things about my field and also that how a corporate office works. The employees there were very friendly and interactive.

Learning outcome : I got to learn a lot of new things about my field and also that how a corporate office works. I also learned how to balance work and life after interacting with

the employees there. Learned a lot of new topics of my branch also. It improved my presentation skills.

PS-I is an exposure oriented course : Yes it is indeed, I got the exposure as to how a corporate office works in real, and also learned a lot of new things about my field and improving presentation skills.

Name: Shivangi Sharma (2017A1PS1050H)

Student Write-up

Short Summary of work done : First of all we introduced to a lot of new terms from telecom . So the initial weeks were spent self studying and learning from the heads of various verticals in the company . We went for site seeing as well. Later we were aligned with a team below the vertical of our project, in our case it was network planning. They taught us how to plan the sites in an area.

We then first analysed the HP INTERCITY POP CIRCUIT to develop our understanding of transmission planning. Next we went on to propose new POPs for Punjab circle . We proposed over 40 POPs for Punjab.

PS-I experience: It was a great experience. We learnt everything from how an organization runs to what's new in telecom. The environment is very positive and productive. It has helped me improve my social skills as well.

Learning outcome : Although I am not from electronics ,I am a chemical engineering student , I have realised that there is a similar basic structure in each organization. I would also like to thank my teacher ,Mr Karthik Chetan who ,during our classes at BITS, always taught us the basics of engineering and different perspectives.

PS-I is an exposure oriented course : I agree. It is a new experience to learn outside the classrooms. The work assigned is also just enough for us to understand the basics of that vertical.