Birla Institute of Technology & Science, Pilani
Pilani | Dubai | Goa | Hyderabad
Practice School Division

CHRONICLES

Information Technology

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: IT

PS-I station: AFour Technologies Pvt. Ltd. , Pune

Student

Name: Sandesh Thakar (2017A7PS0181H)

Student Write-up

Short Summary of work done : Employee Resource Portal(ERP)
It is an asset project for the company. It aims to streamline the process of managing employees and projects. The objective of the project is to make allocation of resources to projects more efficient and to help employees manage their schedule.

PS-I experience: It was a nice experience working with AFour Technologies. I met some wonderful mentor who helped me learn relevant things for the project. Apart from just providing the resources, they also helped me to understand how the project worked and then assigned tasks to me.

Learning Outcome : I gained knowledge about JavaScript and React. I also learnt about best practices that should be followed while writing the code.

PS-I is an exposure oriented course : I completely agree with this statement.

Name: Prateek D Hiranandani (2017B4A70578H)

Student Write-up

Short Summary of work done : The company was working on a asset project, i.e., developing an ERP portal, to combine all the micro-services being developed. This was being done keeping in mind the company's plans to grow to a larger scale, and thus, automating the work which is currently manual was crucial. The tasks such as collecting customer, employee and project data, allotting projects to employees, billing the

customers, maintaining employee schedules, etc. are some of the micro-services. I was allotted in the team working on Back-end services. I was involved in creating, modifying and testing APIs for various micro-services. Based on a few APIs already existing, which I studied, I created binding tables and APIs to handle the data coming from Front-end services. Since Front-end development was being done simultaneously, we had to use dummy data to test our APIs. We worked Python, PostgreSQL and Postman to write and test our code. The APIs involved CRUD operations, and I created APIs which involved Get, Post and Patch request. The project is in development, and will continue to be worked upon, after my PSI ends.

PS-I experience: My PS-I experience can be divided into three parts - first one being learning new languages and tutorials, second being completing tasks in web development, and last being getting started with competitive coding. The first three weeks were spent on learning new languages and topics from tutorials provided by the mentors. I learnt the basics of Python, C++, PostgreSQL, Git, Flask, etc. This helped me understand the requirement and utility of each one in the project. The next three weeks I was given tasks on the ERP project which involved working with APIs. Although I struggled with this part, I am happy for the experience I gained on these topics. The last two weeks, I started problem solving on online platforms to build my logical thinking skills and speed up my implementation skills. I got into competitive coding because of the Hackathon culture in my PS station and the other students from BITS.

Learning Outcome : I learnt a lot of things, from how an organization functions to how teams co-ordinate on projects. I studied various new languages and topics, which will be of great help in my future courses and projects.

PS-I is an exposure oriented course : I completely agree with this statement. From my experience, I have spent more time learning new things than working on tasks, which I think was a conscious effort from the employees as well

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Name: NIshant Raman (2017A3PS0226P)

Student Write-up

Short Summary of work done : Back-end development and integration of the services into the company's internal Employee Resource Portal.

PS-I experience: Flexible work hours. Time was given to learn the topics for the project. Along with the project, there was time to do some self-study as well on other topics.

Learning Outcome : Python, Git, API development, using PostgreSQL, developing apps using Flask (all in brief)

PS-I is an exposure oriented course : A valid statement. The project itself needed an understanding of the company's functionings and structure. Apart from that interactions with peers working on client projects helped as well.

Name: Tanmay Khandelwal (2017B3A70725P)

Student Write-up

Short Summary of work done : Worked on an asset project of the organization . Project was to make Employee Resource Portal of the company, which basically requires Web Development.
So, half of the students were assigned frontend development and the other half were assigned back end development . I was assigned frontend development .
I learned react- redux Javascript library and worked on the project which was based on React, Redux, HTML , CSS.

PS-I experience: It was good experience to see how an IT organization works and it was great to learn tools to do frontend development

Learning Outcome : Learnt frontend development using react-redux

PS-I is an exposure oriented course : Its true ,PS 1 is more of exposure oriented rather than learning new technical skills.

PS-I station: AlmaConnect , New Delhi

Student

Name: Shray Mathur (2017A7PS1180P)

Student Write-up

Short Summary of work done : I was involved in content curation and moderation, operations, recruitment, product development, feedback collection and analysis.

PS-I experience: Great learning experience. Improved communications skills, attention to detail, soft skills. Made some great friends.

Learning Outcome : Improved communications skills, attention to detail, soft skills

PS-I is an exposure oriented course : Yes definitely. My PS-1 was with a startup so really got a feel of what all a growing company or startup has to do.

PS-I station: Bhaskaracharya Institute For Space Applications And Geoinformatic , Gandhinagar

Student

Name: Dhruv Gupta (2017A7PS0108H)

Student Write-up

Short Summary of work done : GEOPROCESSING IN OPEN SOURCE GIS

1st part of the project

With no such pre-existing model to clip and analyze the continuous features such as roads,railways,rivers,streams etc, this project aims at solving this issue by using geoprocessing.
Given a map ,this web application not only finds the boundaries of a bounded region (example– state boundaries inside the country map), it also highlights the continuous features within the boundaries specified by the client. For this purpose various tools such as Openlayers ,PostgreSQL , GeoServer , JavaScript, PostGIS , along with multiple data formats including PostGIS database and GeoJSON have been used. This project also uses various web rendering services such as Web Map Services(WMS) and Web Feature Services(WFS).After the rendering procedure is done, the clipping out of features in the map is done using Cassandra Query Language (CQL) filters.
2nd part of the project
While working with maps, it is a common requirement of having the capability to find out the shortest distance between two points or to be precise the source and destination . While getting the normal Euclidian distance is quite easy and straightforward, the complications arise when there exists restrictions on the kind of route or road network that has to be followed definitely .This project
aims on finding :
1)Shortest distance between source and destination.
2)Shortest distance between source and destination when a list of middle points or halt points are specified that must be covered in the travelled path.
For this purpose,various tools have been used such as PgAdmin4,PostgreSQL, PostGis, and PgRouting . This project provides with the relevant PostgreSQL functions that can be directly used in building APIs for the same problem.

PS-I experience: PS1 experience was overall good .The quality of the project given was fine.It was a good experience for a web development project.

Learning Outcome : The project helped me in understanding how a research organisation like BISAG works and allowed me get a good learning about web development.The web development focussed mainly to provide solutions for map-based and navigation systems so it was also useful in learning how the navigation systems in our day-to-day life works.As there were several components of evaluation during the course of PS1, I also learned how to prepare ourself for group discussions and seminars.
So overall the learning was good.

PS-I is an exposure oriented course : Yes it certainly an exposure oriented course as it helped me understanding how research organizations function.It also provided a hands-on experience on how big the scale of data to be evaluated is and how to manage such vast data.

It also helped me in learning how my PS station (BISAG) works in various fields like agriculture,defense,infrastructure etc and how it provides efficient solutions for the same.The maps that they process to extract useful information was really helpful in understanding what kind of jobs can be done using simple web mapping techniques.

Name: Saarthak Jain (2017A7PS0083H)

Student Write-up

Short Summary of work done : There were two parts to the project which were expected to be done by us.
With no such pre-existing model to clip and analyze the continuous features such as roads,railways,rivers,streams etc, the first part of the project aimed at solving this issue by using geoprocessing.The clipping of continuous features within the defined boundary was something that BISAG specifically needed as a openlayers web application which could be easily used by anyone as this technique was not previously available .The goal of this first part was to create a web application which allows you to select the layers you want to display on the base layer and clips out the continuous or discontinuous features within the boundary specified by the user ,with the help of using Node Package Manager.
Routing techniques such as finding shortest paths is important in many of the navigation based and delivery system companies.But the only major solution provided in this domain is by Google Navigation API,which not only requires a verification key,but also charges amount to the user .Therefore a cheaper solution is required. Building such API was the motive of BISAG.
Our task was to create a set of functions which allow the user to give lat,lon values for the starting and ending point of the route,and the function should be able to return the shortest route for the requested parameters.This was further enhanced to acommodate further middle halt points that the user wanted to cover in the journey.These functions will then directly be used by BISAG in creating required API.

PS-I experience: I had a good experience working at my PS station. I got the opportunity to learn a lot about how a government organisation works,gained a lot of knowledge through the guidance of such highly qualified mentors and the project provided me to explore a completely new domain based on mapping systems which I could not have done otherwise.

Learning Outcome : The learning experience was great.Learnt how to create a web site and host it on a server using Node Package Manager.Learnt what all back

processes are involved while dealing with map data and rendering the same for our website.Learnt about Openlayers,a javascript library used for rendering maps.Also learnt what PgRouting is and how a database of a road network can be used in finding shortest routest ,similar to how google maps work.

PS-I is an exposure oriented course : PS-1 is definitely an exposure based course.I learnt how different it is to work on a project while doing it alone in comparison to working in an organisation.I learned how just bookish knowledge is not sufficient in finding solutions to real world problems,getting a gist of how important it is to manage working and personal life,in order to a have a fruitful outcome.Learning as a team,the cooperation and understanding required between team members,all provided relevant skills required in the industry.

Name: Subham Kumar Dash (2017A7PS0004P)

Student Write-up

Short Summary of work done : We have worked on a chatting web application called Riot. It's an open source project. It is based on Matrix protocol. We had to add some more layer of security to the existing application and to develop an admin panel for the same.

PS-I experience: People here are very cooperative and helpful. There are good projects available here. Mentors will provide you necessary help whenever you need it. Overall a good station to gain some practical knowledge.

Learning Outcome : As we worked on a large open source project, we had to first go through it's entire codebase. So it was a project which requires a lot of research before further development.
I also learnt some new languages like jQuery, AJAX, Python 3 etc.

PS-I is an exposure oriented course : Yes as we don't have any other real world experience during our first two years of college, so PS-I is very much valuable for us to gain knowledge about how an organization actually works and also to work on a team is a skill that this program teaches.

Name: Vivek Soni (2017A7PS0173H)

Student Write-up

Short Summary of work done : My project was to develop a video conferencing website with custom administrative features. The project was given to us based on our interest i.e. Web development. We had to build a conferencing site such that the admin had full control over the proceedings of the conference like removing unwanted participants, setting password for the conference, muting one or more participants, giving permission of screen sharing to certain users, etc. My having control over the conference, one can prevent any unwanted content being streamed in the conference. In BISAG, it was aimed to be used for official government meetings that need to be secure and smooth. Though initially we faced many difficulties regarding the implementation of the above, our mentor was very motivating and understood our doubts and clarified them on time. We were also provided ample time to learn whatever was required by the project. The work given to us was appropriate for our qualifications and even gave us the opportunity to push ourselves to complete the project.

PS-I experience: My PS environment was very well suited for my and was up to my expectations. The mentors and coordinators were very helpful for settling us in the initial week. Overall, my experience was very good.

Learning Outcome : Learnt new languages: NodeJS, HTML, CSS, JavaScript
Also improved communication skills and presentation skills

PS-I is an exposure oriented course : In my opinion, it is a fair to say PS-I is an exposure oriented course

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Name: Sarthak Gaur (2017A7PS0250H)

Student Write-up

Short Summary of work done : We were allotted the project to build a custom web application for video conferencing with administrative features to be used for hosting guest lectures and stream group discussions to be held in BISAG.

PS-I experience: It was a good overall experience as I got a lot to learn from the technical as well as professional aspect.It felt nice to interact and be guided by a mentor

,to learn new technical stuff from him, to collaborate with a team and work together and get used to office environment.It felt nice to be able to work under a very supportive institution with sufficient equipments and facilities.

Learning Outcome : Team work and learning new technologies were amongst the most important learning outcomes.Some of the technical stuff we learned here were nodeJS, HTML, CSS, Javascript, WebRTC libraries, SocketIO libraries.It was a good overall learning experience since we improved upon communication skills & presentation skills also.

PS-I is an exposure oriented course : The statement stands for itself since it was a perfect platform for students for learning ,developing skills and exhibit their skills through the medium of very interactive projects .It definitely serves its purpose and the institute also played its role well.

PS-I station: Cateina Technologies Pvt. Ltd. , Mumbai

Student

Name: Aditya Vaish (2017A3PS0379P)

Student Write-up

Short Summary of work done : In the start few weeks we learnt web development on mean stack technologies and after that we are segregated into different projects in which we were introduced to various other technologies as needed for our project.
My project was regarding integrating update functionality in the existing company projects. So I learnt about ipfs and developed a nodejs API for transfer of existing file system to ipfs for company's existing project.

PS-I experience: I got to interact with company individuals and enhance my communication and presentation skills .

Learning Outcome : I got to learn about various technologies in the industry and had an hands-on experience with them. I got to engage with web development techs like ipfs, nodejs, git, angular, and mongodb

PS-I is an exposure oriented course : I completely agree with the statement , I was expecting more technical encounter but rather it was a much better work orientated exposure where I learnt to work as a team and explore the real life application of different technologies.

Name: Rahul Pillai (2017A7PS0099H)

Student Write-up

Short Summary of work done : Web developement projects using MEAN stack(Mongo,ExpressJs,Angular,NodeJs,)

PS-I experience: It was good learning experience as the things that I learnt in this period are going to be useful when I sit for placement.

Learning Outcome : proficiency in web developement

PS-I is an exposure oriented course : I got exposure to the work environment of a IT company,learnt how to communicate and contribute in a group project so I can say that "PS-1 is an exposure oriented course" was true for me.

PS-I station: Centre For Development Of Imaging Technology , Trivandrum

Student

Name: Metlapalli Venkata Sai Karthik (2017A7PS0260H)

Student Write-up

Short Summary of work done : CDIT is the Kerala Government's go to organisation for all in house software development. The project we have undertaken is in the realm of examinations, for the Public Service Commission and Department of Education. This was a Full Stack Web Development project, completely Free and Open Source Software and ideally extensible to all departments of the Kerala Government. Our project dealt with the issue of Hall Ticket Malpractice and Impersonation in examinations, so we designed a software application that digitizes and streamlines the process of Hall Ticket Verification and Authentication using Biometric Data.
The project comprised of two parts. The first part (Level 1) was to update the biometric details of the candidate (fingerprints) and store that data in a database. The web page designed for this purpose would first verify the student and their details based on roll number provided and then allow them to add a new photo and five fingerprints from any one hand. The second part (Level 2) was to verify the student in any further iterations of the same exam or even for college admissions if required. The web page built for this would also take in the roll number provided and print out the details stored before. Then, the candidate would need to present one of their fingers to verify their identity.
The scope of this project extends to all examinations being conducted by any organisation, it needs simple user requirements and is a secure application. There is room for improvement to make the whole process automated, but for now, we require human resources.

PS-I experience: Since it was founded in 1988, CDIT is the only State run organisation in India to have obtained the necessary qualifications to have an in house Holography Division. It will also be one of the first non-corporate organisations to have the credentials to serve independent clients in Full Stack Web Development. CDIT places a focus on work ethic and practical, attainable goals that has enabled us to understand how an effective workplace pushes employees to do their best.
At our PS station we were given exposure to the corporate industry as well as team management aspects of a project. Continuous review and discussion meets and group discussions helped us bond as a team and work as a collective force. Working in an industrial environment helped us learn and implement different technical terms and processes like Software Development Life Cycle (SDLC), Software Requirement Specifications (SRS) and User Requirement Document (URD). Our internship introduced us to new tools and software like IBM AppScan, Node.JS, and Sequelize and also gave us a better understanding of our skill sets and associated career options and opportunities. We had constant support of our PS coordinators, Mr. Rayson Alex

and Mr. Deepu Dileep, our station coordinator, Mr. N. Jayaraj and mentor, Mr. Shibu Manikkoth who were always ready to help and solve our problems.

Learning Outcome : During our internship at CDIT, we were able to learn about the technical as well as non technical aspects of working under a project. Working together under the project helped us build teamwork. Each one of us were allocated tasks based on topics we were individually comfortable with.This helped in the smooth progress of our project. Moreover we were also able to learn topics we weren't familiar with from our team members.
Coming to the technical aspects, we were introduced to Software Development Life Cycle which is a set of guidelines for a Software Development team on how to provide effective software solutions. We were given a brief session and demonstration on what are the various levels of testing undergone by a software before it is officially released. We were given a demo on IBM AppScan, a security testing tool. We also visited the CDIT Optical Image Processing unit, where we had a session on Hologram production. As part of our project, we learned to use front-end tools like HTML, CSS Bootstrap, JavaScript as well as backend tools like Node.JS. We also learned to use a MySQL database and connected it to the backend using the Sequelize Object-Relational Mapping Framework. We also learned to integrate external input devices like Fingerprint Scanners and Barcode Scanners to our web application.
From our mentors at CDIT, we also were able to learn several soft skills such as working in a team and managing time and deadlines. The amount of freedom and control they gave us over our project helped us achieve a realistic Software Application.

PS-I is an exposure oriented course : Back in college we approached any problem with only a single motive of achieving the required functionality without worrying about code maintainability, load and other complexities. After getting an exposure to real life problems through this internship, we realised how complex building and maintaining a software can be. Also in college we were never worried about questions like “How many users are going to use the software?”, “How much data will be processed?”, “What are the expected response times for a function?”. Our college projects were usually short-sighted. In real-world projects though, the above questions fundamentally affect decisions about hardware, technologies/tools to be used, system architecture, algorithms, and so on. We were exposed to different technicalities, processes and units involved in a project. Working in a team helped us realise the importance of teamwork, group discussions and review meets.

PS-I station: Centre for Railway Information Systems , New delhi

Student

Name: Sri Hari Chidella (2017A7PS0070G)

Student Write-up

Short Summary of work done : Our project is mainly based on the use of NLU and machine learning capabilities to create a chatbot for the Rail Drishti Website. It further involves creating a custom API service to provide a backend for the chatbot to get data from and then integrate the chatbot with twitter. For the machine learning and NLU, we have used the cloud based service by Google called DialogFlow. This is a software that helps in making chatbots by allowing developers to set different intents and hence different ways to interpret the entered data by the user and then classify information into some basic variable called entities. The identification of intents and entities then allows the developers to fulfill the requirements of the user in the form of response by the chatbot. The API service we created was a restful API service based on Jersey. The function receives the request from dialogflow in the form of JSON file. The backend java converts JSON into java classes. The parameters received are stored in the form of variables in java. The parameters are used to query, using SQL in java and then store results again in the form of java class objects. These objects are again converted into JSON and sent back to dialogflow. For fetching data from database we created the java code which fires SQL queries to fulfil user requests. The variable “period” stores the time period user wants earning for. The “commodity” variable stores the commodity user wants earning about. Then we fire query in SQL

PS-I experience: PS-1 at CRIS was a great experience for all parties invloved. The mentors we had at CRIS were wonderful to us at all times and always ready to help. Even the GM of the organisation took time out to meet all of us one by one which was a great gesture. The fellow batchmates were very helpful and all of us forged a great friedship by the end of our internship. All in all this was a great experience.

Learning Outcome : PS-1 at CRIS was a great learning experience for all of us involved. Specifically relating to our project we learnt about development of chatbots and all the basic properties of chatbots. Also we learnt about the development of APIs as we had to create a custom API service. Other than that working in a corporate firm we had a great exposure to how things work in the corporate world.

PS-I is an exposure oriented course : Having a Practice School in a corporate organisation helped us to understand how things work in the corporate world. We got to understand how a project is seeded, proceeded and finished in real world industry.

Name: Sumit Bisht (2017B4A70581P)

Student Write-up

Short Summary of work done : My project at CRIS was based on developing a migration strategy for their codebase. It was based on LoopBack - a NodeJS framework. The project involved studying LoopBack documentations, trying out different approaches for migration, develop some of your approaches and finally developing a proper migration strategy for that. The project in terms of workload was chill and was also interesting as you have to develop some of the algorithms yourself rather than just copying the code from StackExchange.

PS-I experience: PS-1 at CRIS was an awesome experience. You will get a chance to work in projects which will directly be used in the public sector. One of the projects that were assigned in our PS station - Rail Dhristi was directly looked by the Railway minister. The project allotment process is quite good. Our mentor asked us about different technologies we know about or have worked in or are interested to work in and tried his best to allot us project based on these inputs. The workload is not very tiring and you can prepare for coding competitions or internship season if you want.

Learning Outcome : -> Learned about how work in general is carried in IT organisations.
-> Learned about different technologies currently being used in IT sector in different domains like API development, Web Development, App Development etc.

PS-I is an exposure oriented course : Yes, I totally agree with it as it gave me a bit idea about how organisational work is carried about and also about different work ethics expected fromyou once you start working in an organisation

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Name: Samarth Jain (2017A7PS0067P)

Student Write-up

Short Summary of work done : The codebase for the project offered to us is based on LoopBack 3. In Loopback 3, models were responsible for accessing data as well as in providing application's REST API. This poses a difficulty in
customizing REST API for customers. The division of LoopBack model's responsibilities into Controllers, Repositories, Models and Services helps in tackling this problem. Loopback 3 uses callback function for asynchronous programming. This creates problems for programmers while chaining functions as callback involves nested loops. LoopBack 4 tackles this issue of clean and readable code by using Async/Await and Promise. LoopBack 3 uses JavaScript which creates problem for programmers to write clean object-oriented code . Loopback 4 is a solution to this problem as it uses object-oriented Typescript language. The current Loopback 3 based codebase pose problem in terms of clean, readable code and customizing REST APIs for the programmers. Therefore, the primary aim of our project is to migrate this codebase into LoopBack 4. Hero (Healthcare for Entire Railway Organization) portal has a 3 layered architecture with database setup in PostgreSQL, middleware in Loopback 3 and frontend in Ionic 4. We as a team had to work on middleware for the portal and were supposed to migrate the Loopback codebase. The project has given us a lot of insight into the process of RESTful APIs development and how LoopBack as a tool provides power to easily create powerful APIs. The project resulted in developing a proper migration strategy for HERO codebase. This will save a lot of time for the professionals that will be working on the migration strategy at a future date. The new updated Loopback 4 based codebase will help in easy maintenance of codebase and will help in developing powerful features for the API.

PS-I experience: practical skills, workplace experience and greater knowledge of that industry

Learning Outcome : 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.
Independence.
Making connections.

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

Name: Mayank Kakkar (2017A7PS0144G)

Student Write-up

Short Summary of work done : Migration of code base from LoopBack 3(Current LTS) to LoopBack 4(recently launched)
Work was based on Web Development.
LoopBack is a middle ware and our task was to develop a strategy for migration.

PS-I experience: It was good. Learnt about the basics od Web Development

Learning Outcome : NodeJS, LoopBack

PS-I is an exposure oriented course : Yes it is. Realised how industry is different from college

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Name: Sarthak Gupta (2017A7PS0222H)

Student Write-up

Short Summary of work done : We created an application to help keep track of the state of railway infrastructure, particularly stations, and make it convenient for employees upload onsite photographs. The application allows only authorized users to access pictures of predefined stations, giving them the ability to view, update or add pictures.

PS-I experience: PS-1 gave me an opportunity to experience working in a professional environment. Dealing with everything including deadlines, presentations, maintaining a professional interpersonal relationship etc, I've gained a new perspective of a working life

Learning Outcome : Apart from learning industry standard technologies and practices, I've also been exposed to working in a professional environment which has been a great learning experience

PS-I is an exposure oriented course : It certainly is.

Name: Mayank Chaturvedi (2017B4A70548G)

Student Write-up

Short Summary of work done : We have successfully developed a chatbot agent “Netra” which can be used to get statistics for different types of earnings of the Indian Railways with the help of data from the Rail Drishti website. The backend including the API service and the SQL queries for extracting data from the database have been developed in the process. We have integrated the chatbot with twitter so that the bot can be used in a more user friendly platform to help the users

PS-I experience: We have learnt various new technologies and had great learning experiences in
CRIS. CRIS is an amazing organization with helpful and cooperative employees.
They have helped us in every step we were stuck in our project. We got to
understand how a project is seeded, proceeded and finished in real world industry.

Learning Outcome : got industry exposure and learnt various new technologies

PS-I is an exposure oriented course : TRUE

Name: Shubham Agarwal (2017A7PS0126G)

Student Write-up

Short Summary of work done : The Assurances module for the raildrishti website is completed and will consists of two sections primarily. One, which shows
the number of pending assurances and matters. The other one, shows the Graphical and Tabular distribution of the matters under various people. Further information regarding any matter can be accessed by clicking on the particular bar on the graph. This will help the concerned authorities to have a detailed look regarding the matters of Parliament which had been missing
Learnt about various technologies and libraries including JSP, AJAX, Bootstrap, OpenLayer, flotchart, Modal class, and more.

PS-I experience: It was a good experience to start with. For someone who joined CRIS for a web development work, it has been a really good learning experience. I came across various technologies and their real life implementations. The people working over here are really helpful and always happy to help when approached.

Learning Outcome : I learnt more about the front end part of web development, more libraries, methods and technologies so that the user can have a better experience.

PS-I is an exposure oriented course :

Name: Jyotirmoy Pathak (2017B2A71032P)

Student Write-up

Short Summary of work done : My project is to design and implement a passenger attendance system which will be used by the Train Ticket Examiner to mark the attendance of the passengers who have booked the seats and also to allot the seats which are not booked during the journey of the train.This application will store this data and also send this data to the remote servers of Indian Railways whenever there is a network availability in the area through which the train is passing through.This way, we have digitized the ticket checking system and also real time updates of the seats allotment in the train has being provided to Indian Railways. Also a lot of paper is saved which is otherwise cumbersome to handle.
This application's GUI is made in Java Swing because of java being a platform independent programming language.Connection of the application to the local database was made using JDBC and h2 is used for local database.mySQL is used for remote database and is connected to the local database using symmetricDS which will

also help in syncing of the local database to the remote one whenever there is network availability.

PS-I experience: All my PSmates were of Computer Science Engineering who knew a lot more than me.This motivated me to learn and put my best effort in the project.Throughout the internship all my PSmates, my instructor and my mentor helped me in every possible way whenever I needed any help.The project provided me with the opportunity to learn a completely new programming language and also work with the databases.

Learning Outcome : My role in my project was to design the application's GUI and also to connect the GUI to the local h2 database. I designed GUI using Java Swing.For that I learned Java and also its framework Swing.Also i had to learn JDBC to connect the application's GUI to the local databas

PS-I is an exposure oriented course : Yes,indeed.Before PS i had little to no knowledge of how things work in a software company and how a project is handled in a team.It has taught me how to work in a team and communicate with the team members and the mentor in the company along with the technical skills.

PS-I station: Convergent Technologies , Gurgaon

Student

Name: Kunwar Rananjay Singh (2017B4A70504G)

Student Write-up

Short Summary of work done : We worked on Data Analytics using R language.
Our first job was to plot graphs between various parameters given in database.
Our second job was to make a GUI so that a user can choose the parameters between which he/she wants the graph to be made.

PS-I experience: I am happy that i got opportunity to work in a startup and learn about data analytics .

Learning Outcome : We got introduced corporate culture, Data analytics , R language .

PS-I is an exposure oriented course : Yes we got experience to be a part of corporate culture (more precisely to startup culture).

Name: Subhanjan Saha (2017B3A70713P)

Student Write-up

Short Summary of work done : I was assigned to the Data Analytics team at Convergent Technologies and were assigned to generate visualizations for the data collected and curated by Convergent Technologies into their databases. We were told you use a relatively less known Business Intelligence software called Microsoft Power BI. We spent the first half of PS I, getting familiarized with the software and practicing the Data Visualization features onto practice or dummy datasets created ourselves or fetched from the internet, and in the second half, we were supposed to plot multiple interactive graphs with Power BI on the datasets of Convergent Technologies.

PS-I experience: This was a new learning experience which was different from the typical course offered at BITS. This involved exposure to actual corporate culture and simulated a real-life job experience and was a test of how well we were able to solve the problems one would face in real life when starting a career with a company.

Learning Outcome : I was exposed to a new set of problems that forced me to have a practical outlook towards the scenario throughout my journey in PS I and it helped me better understand and have realistic expectations out of a job in the corporate world.

PS-I is an exposure oriented course : Yes, definitely. Its not anything like the typical classroom courses as there is very little theory and largely requires you to grasp onto the work of a company quickly and perform well enough to show results.

Name: Ashish Gupta (2017A7PS0056H)

Student Write-up

Short Summary of work done : The first 2 weeks were given to learn the basics of the R programming language then I was given 4 tasks related to data analytics of GoForFit database in order to explore the data analytics and R language.I completed it in 2 weeks.Then I was given a project in which I had to make web application so that users can give inputs and he/she can get output of data analytics of GoForFit database using a package in R called shiny in which user can select input which are dependent on previous input where all the input are optional and these inputs will be used to filter the data of different tables of GoForFit database .After filtering the data from the different tables ,merging and breaking the tables of database the resulting table will be used for making graph using a package called gglot and plotly (used for making plots of different types) and giving a summary that is doing the analytics which will be displayed on the frontend(Graphical User Interface) of the application.It took me 3 weeks to complete the project

PS-I experience: It was a good experience.Learned how to make real life application and my presentation skills improved a lot.Learned how to make applications in a group which this experience will be very much useful for me in the future.

Learning Outcome : Learned a new programming language R. Learned data analytics using R language. Learned how to make web application using a package of R called shiny .Learned many packages in R.

PS-I is an exposure oriented course : I got exposure to develop real life application.My presentation skills improved a lot. I got exposure working with peers to develop real life application and working under mentors was also a exposure for future.So yes I can say that PS1 is an exposure oriented course.

PS-I station: COUTURE AI PVT LTD., , Bangalore

Student

Name: NAHUSH HARIHAR KUMTA (2017A7PS0930G)

Student Write-up

Short Summary of work done : My work was based on two main aspects:
1) Optimizing queries for quicker rendering of data from tables which were to be used by Apache Superset (A visualization tool software) for implementing dashboards which contains charts. These charts will be then used to analyze data and outputs of various work done by the company.
2) Implementing Apache Ozone for Big data Analytics of small files such as images, multimedia files, etc and also to make an API (Application Programmable Interface) for deploying and retrieving data from ozone clusters by various programs. Ozone was used concurrently with the HDFS (Hadoop Distributed File System), as the HDFS fails to work efficiently with large number of small files on its own.

PS-I experience: The last two months (the summer of 2019) was a huge learning curve in my life and all credit for it goes to the company where I interned: Couture AI. I learnt a lot about industrial life, work culture, professionalism, etc. I also got to interact with veterans in their respective fields and gained a lot of maturity and knowledge. I would also like to thank my University BITS Pilani for having given me this wonderful opportunity to get a good experience in the corporate world and gain more domain knowledge.

Learning Outcome : The main learning outcomes were to learn the importance of practical experience by making use of the aspects we learnt in our courses to implement them in the real life situations. Apart from that, things such as what we like and what we don't became clear through this internship, which will definitely help me make better choices in the future and also to determine what field I would want to study in further.

PS-I is an exposure oriented course : Yes, I gained a lot of knowledge in my respective domain and also a lot about industrial culture.

Name: Pratik R Borikar (2017B3A70550P)

Student Write-up

Short Summary of work done : I did the following :
1. Understanding what is machine learning
2. In-depth analysis of machine learning algorithms
3. Studying Hadoop Distributed File System(HDFS)
4. Using Shell Script to automate the addition of a new node to HDFS cluster
5. Annotating Images using LabelImg

PS-I experience: It was good, resourceful. Employees were very supportive and friendly. Got exposure to corporate lifestyle along with newly acquired skills relating to the field of computer science.

Learning Outcome : - Exposure to corporate lifestyle
- Better understanding of ML and AI
- Versatile in shell scripting

PS-I is an exposure oriented course : Yes, it is an exposure oriented course as it gives you the opportunity to apply the theory in practical life. Gives you a taste of professional life.

Name: NAGA SIVA SAI REDDY (2017B3A70779P)

Student Write-up

Short Summary of work done : My work is related to Machine Learning. So I spent the first week familiarizing my self to it. I have completed two projects during my stay here. My first project is "Building a Flask RESTful API for a Machine Learning model".For this, I learned Flask and used the same to build my API. My next project is based on Feature extraction and feature matching. This one is related to Computer Vision. I spent a week researching the best methods and algorithms to use for feature extraction. Later I implemented 4 different algorithms. And used the features extracted for feature matching.

PS-I experience: In a sentence: "It's amazing".It boosted my technical skills, presentation skills, communication skills, and knowledge about the domain I am working on.

Learning Outcome : Introduction to Machine Learning,Computer Vision,APIs

PS-I is an exposure oriented course : The knowledge that any industry expects from a student is different from theoretical knowledge that is taught in college. PS-1 fills this gap. Here, in my internship, I was assigned good tasks in the domain, not the large ones which would have overloaded me. Thus PS-1 is giving exposure to the working environment, work culture of an industry.

Name: Rahul R Shevade (2017B3A70878H)

Student Write-up

Short Summary of work done : Our first task was to learn a few basics about machine learning. We did this from the course by Andrew Ng on Coursera. After getting familiarized with basic algorithms, we could try coding with few sample data sets. My first real work- Learning about evaluation metrics in informational retrieval. I learned about Mean Average Precision, Discounted Cumulative Gain, and terms associated with them like Recall, Precision etc. I had to implement Discounted Cumulative Gain on the data given to me. I had to create certain files with a particular Schema to feed into the dashboard to visualize the results. My second task was to learn about Topic modelling. It seemed like a very interesting and useful model. I began by looking at Latent Dirichlet Allocation (LDA). It could discover hidden features about the documents and then we could try and group them based on the topic distribution of the documents. We don't need to explicitly name the topics, they can be abstract. The most important part was to clean the text. It involved operations such as tokenizing, stemming, lemmatizing, splitting words, n-grams and spelling corrections. The order of all these had to be chosen carefully. After running this through a vectorizer, it was finally ready for the actual LDA algorithm. I had to use Grid Search to decide hyper parameters. I also ran K-Means clustering to cluster the documents after we got their topic distribution.Along the way I learnt basic table operations like joins, pivoting, melting, sorting, group by, etc,.

PS-I experience: My PS-1 experiences was one of the best ones so far. Since this was my first internship I was looking forward to it. I was very keen to observe how people

operate and communicate in an organisation, and how different pieces of work done by different employees all comes together to become a part something bigger and whole. Meeting new people from other colleges was a very nice feeling as well. The employees were very helpful and kind and they would guide us whenever we needed them. Everything, from the people, the work and the office, was wonderful here.

Learning Outcome : I wasn't a coding geek, neither did I know many languages, but that was okay, because the idea was not to learn any particular language, but being able to implement algorithms/logic through any one of them. Since, I wasn't very fluent in Python, it was a great opportunity for me to learn about Python's usability, it's ability to do so much in such little line of code. From generator expressions, to its various available libraries and their functionalities, they never ceased to amaze me. I encountered a few hiccups in beginning and had to look up the errors a lot of times to see if there were other people like me (and most importantly to immediately jump at the solutions to the errors posted on different websites). But in the end, when the code finally did what I wanted it to , it was all well and good.For the first time I could see a (relatively) modern machine struggling to produce an output, that otherwise, I reckoned, would only take a few seconds. This made me understand the importance of optimizing the code and the need for faster hardware.This also gave me an idea about the vastness of data that people work with.

PS-I is an exposure oriented course : Yes, PS-1 is an exposure oriented course. We can learn so much from just interacting with people who are working around us. We can learn new trends and new algorithms and technologies that are coming up. We can understand the problems faced in implementing certain things, and why we choose to proceed one way rather than another. We get to know the challenges involved only if we are exposed to the real world and we can then figure out how to overcome the challenge.

PS-I station: CtrlS Data Centre Pvt Ltd , Hyderabad

Student

Name: M.Arundhan Reddy (2017B3A70889H)

Student Write-up

Short Summary of work done : The aim of this project was to create a website for providing clients of the company with the information regarding the various teams at the organization and to integrate a functional Chatbot into the website's user interface that can provide suitable details upon request. The initial framework on the back-end is built based on Django framework written natively in python and integrated with the front end built on HTML, CSS and JavaScript. Furthermore the Chatbot is to be integrated into the user interface of the website and linked in the back-end with the server database to provide an interface for the clients to interact and get to know about the organization. Development of Chatbot is based on machine learning with the help of Natural Language Processing covering concepts such as data cleaning, vectorization, lemmatizing & amp; tokenizing. Finally the machine learning models are developed and tested with various evaluation methods and variations.

PS-I experience: New experience in a working environment which includes instant learning of concepts. Able to see how things and people actually work in the company, and how application of concepts is done, by working in groups.

Learning Outcome : Python programming language, Django frame work in web development, making Chatbot.

PS-I is an exposure oriented course : Yes, that's true. We also get experience.

Name: B G Vamsi K Reddy (2017B3A71083H)

Student Write-up

Short Summary of work done : The main idea behind the project was to develop a tool which could remotely monitor the status of applications on servers and subsequently display them on a website. So, we developed the back end part of the code in Python to capture the status of applications. Next, we used the concepts of IP addressing, ports and networking to extend the functioning of the tool by connecting multiple servers through a single server. To display the obtained information, we used HTML and CSS to design the front end of the website and then used Django framework to connect the front end with the back end.

PS-I experience: It was a first-hand exposure to the corporate world and I felt immensely benefited by interacting with employees of the organization.

Learning Outcome : I learnt the importance of working in a team to achieve the desired goal. I also got the opportunity to apply the knowledge gained in classroom on real-life projects.

PS-I is an exposure oriented course : It is definitely a golden opportunity to gain exposure to the industry after 2nd year itself.

Name: Bukka Sukesh (2017A7PS0008H)

Student Write-up

Short Summary of work done : We have been given a project Cloud monitoring tool in which we have to create a web site that shows about the different servers connected to the main server and different services running on each server should be captured.we should also show if there is any changes in the services running on server for the security purpose.

PS-I experience: Experience during the PS-I was very nice.we got exposure to the real world IT scenario.we got to learn many new things in the process of completing our project.it was good learning experience.

Learning Outcome : I have learned many new things.I have learned a new programming language python.i have learned how to build a website using Django framework.I have learned HTML,CSS and also socket programming in python ehich helps in connecting various servers.

PS-I is an exposure oriented course : Yes,for sure PS-I is an exposure oriented course.we got exposure to the real world IT scenario.

Name: Padakanti Rohith (2017A7PS0032H)

Student Write-up

Short Summary of work done : I have developed a cloud monitoring tool,which would extract that statuses of services from the client servers and would be monitored by a host server.

PS-I experience: It was a good experience where I got to learn new things and also got exposure to the live projects which would be very helpful in my future endeavors.

Learning Outcome : I have learnt new lanuages such as python and also socket programming which is essential in connection devices over a network.

PS-I is an exposure oriented course : Yes,we have got a wonderful exposure to the corporate world and got to know how the projects are handled by the companies.

Name: KOTIKALAPUDI VENKAT KARTHIK (2017B4A70927H)

Student Write-up

Short Summary of work done : Our project was to build a cloud monitoring tool for the organization through which we can keep track of the servers which are connected on a network. We were also asked to create a website with a smooth interface through which the tool can be controlled. The main aim was to ensure more security and for regular maintenance of the servers

PS-I experience: It was a good experience as we got to learn about how a corporate company works and many other technical related stuff. But we had to change our project quite a few times and the project was allotted a week later the PS started.As it is the first time for the company too they did not have an idea about what kind of project can be allotted to us. Other than that everything was fine and we could complete our allotted project within the specified time.

Learning Outcome : Through this course we got to learn how a corporate company works and we got learn Python, Django , web development , HTML , CSS, Socket programming and ip adressing. It was a good experience as we got learn a lot about languages and about creating a website and deploying.

PS-I is an exposure oriented course : PS-1 of course is an exposure oriented course as we got to learn the working of organizations and about how to interact and coordinate with others working in our team and it was also helpful in learning some basic technical things.

Name: Uppara Harshasri (2017A7PS0204H)

Student Write-up

Short Summary of work done : Worked on project based on Client-server application and web development

PS-I experience: Good learning and working experience

Learning Outcome : Got good working exposure in the industry and worked on real time projects

PS-I is an exposure oriented course : Yes ofcourse, it helped me a lot to know about the work culture of the company

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Name: Arundhan Reddy (2017B3A70889H)

Student Write-up

Short Summary of work done : The aim of the project was to create a website for providing clients of the company with the information regarding the various teams at the

organization and to integrate a functional Chatbot into the website's user interface that can provide suitable details upon request. The initial framework on the back-end is built based on Django framework written natively in python and integrated with the front end built on HTML, CSS and JavaScript. Furthermore the Chatbot is to be integrated into the user interface of the website and linked in the back-end with the server database to provide an interface for the clients to interact and get to know about the organization.

PS-I experience: Nice hands on experience and practical far from theory in academics, could see the culture in a company.

Learning Outcome : Python, Django, NLP, Chatbot

PS-I is an exposure oriented course : Yes, it's a brief exposure as in how things work in a company

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Name: Srinivas Naveen Laghuvarapu (2017A1PS0801P)

Student Write-up

Short Summary of work done : Development of a website using Django framework for the back-end and HTML, Javascript and CSS for the front-end. Further, integration of a chatbot made using NLP and deep learning tools, to that prior developed website.

PS-I experience: Quite good, useful and helped me learn new things. Many other things such as working in a group and also helped in improving communication skills

Learning Outcome : Helped learning different new languages and frameworks for web development. Got an idea of some machine learning and AI tools. Also learnt how real time projects occur and corporate exposure.

PS-I is an exposure oriented course : This is a valid statement as we will get to work in a corporate atmosphere for nearly two months and get to know how things happen in a firm. It is a hands-on experience overall.

PS-I station: Department of Planning, Statistics and Program Implementation , Kolkata

Student

Name: Anish Dey (2017A7PS0220H)

Student Write-up

Short Summary of work done : The work here was mainly centered around software development on some issues which the employees over here used to do manually or through old techniques like Microsoft Excel which was quite Time Consuming. Be it the calculation of the Consumer Price Index Calculator or Gini Coefficient. My job was to make 2 software. The first one was a user-friendly software to create graphs based on the data provided to us on the Unorganized manufacturing or service sector enterprises amongst the 29 states and 7 union territories. This was mainly to find any Trend Fit and impose any Regression formula on the Annual Gross Value added(GVA) or Estimated number of enterprises over several states. The Second Task was to calculate the Exponential Growth Rate coefficient for every state based on 3 years of data provided to us based on the formula y=A*(B^t). The main idea behind this software was to do something which could serve them in the near future as although only 3 years of data is available as of now, we can find this coefficient for several years of data as time passes by and I have made this software dynamic in this sense.

PS-I experience: I really had a great PS-1 experience. Be it the work environment, the mentors, the staff and my peers all were quite great. We enjoyed and had a great time working together. Our mentors were really helpful and keen to help us whenever we were stuck somewhere. Overall it was a great experience and I shall cherish these 2 months in my near future.

Learning Outcome : Learning outcome as in two parts:
In the first part, I got to know a lot about the Python language and its few among the vast number of libraries and its use.
Secondly, I came to learn about several statistical terms and how its values (which are calculated) affect the economy and GDP in the long run. The Consumer Price Index is a

measure of the inflation rate of a state, Gini Coefficient conveys information about the income equality and Exponential Growth Rate tells us about how the assets or inputs to enterprises transform to the Annual Gross Value added.

PS-I is an exposure oriented course : I truly agree on this as it for the very first time exposes us to the work filed and teaches how a person should manage their time in the office hours and tackle deadlines or criticism from others, overcome all difficulties and emerge successful in the end.

Name: Prajyot Kumar Garabadu (2017AAPS0327H)

Student Write-up

Short Summary of work done : Development of a GUI for windows. The GUI took in raw area data and manipulated it to give the Crop Diversification Index and Entropy Index. The obtained result was used to color a district level map (based on values) and plotting on a bar plot.

PS-I experience: PS-I helped me get familiarized with the functioning of a work environment. I was able to complete my first python-based project. Giving presentation in front of a professional crowd improved my presentation skills.

Learning Outcome : Python and the use of its libraries

PS-I is an exposure oriented course : Yes, working in a work environment is definitely beneficial for the future regardless of the work assigned.

Name: Samriddha Khamrui (2017AAPS0294H)

Student Write-up

Short Summary of work done : The main objective was to build the following data manipulation applications.

- Building an application that calculates the current price of an item, irrespective of the number of markets and shops from which its price has been recorded
- Building an application that calculates the multiplying factor for the house rent index and finally calculates the current index using the previous index. (Chain index method)
- Finally building an application that takes in the current house rent index and calculates the Consumer Price Index of a district.
- All the applications should have a user-friendly Graphical User Interface (GUI) that should be easy to use.

PS-I experience: The experience of working as an intern in this department was really helpful.The internship has provided me with an insight to office-culture and as helped me to understand some the role of economics in our life and how it is used to draw up conclusions and design/plan programmes for administrative purposes.

Learning Outcome : Gaining knowledge regarding data manipulation type app development using python.
Most of the work done here was completely new which was never taught in college. This gave me an exposure of what people do in industry. I understood how different the industrial exposure from classroom experience is.

PS-I is an exposure oriented course : Ps-1 is indeed an exposure oriented course. It is a good practice to involve ourselves in such internship programs in order to be in a position of understanding the important aspect of the work.

PS-I station: E pragati , Vijayawada

Student

Name: Illa Durga Vara Siva Teja (2017A3PS0570H)

Student Write-up

Short Summary of work done : Each application was build using different platform and different language.But in background communication between them takes places using XML.interconnection between these applications is called integration.we came across different integration platforms like Mule soft,Gitlab,Jenkins and how they were used for integration

PS-I experience: I personally had a wonderful experience at my PS station.Interacting with my mentors and project team members learnt me many things.I also came to know working as a team.i also got a chance to implement my classroom knowledge in real life situations.

Learning Outcome : I had both technical and personal learning outcomes.I came across new softwares and applications which were new to me.and the most importantly i learned how to work as a team.As in an organization working as a team was more important.it helped me to have a full picture of outside life.

PS-I is an exposure oriented course : Absolutely,i agree with the above statement.as i mentioned above it helped me to have a real time situations and problems to solve which completely changes our mind.i personally recommend this for my fellow juniors

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Name: D. Krishna Swaroop (2017A3PS0315P)

Student Write-up

Short Summary of work done : The project was compilation and curation of Data regarding various departments of the Government of Andhra Pradesh keeping in mind several guidelines that were formulated based on the Boston City e-Governance portal. This also included giving feedback and pointing out flaws in the present websites based on fundamental principles of interaction. This is essentially a content creation project which involves a case study to figure out the restrictions for the same.

PS-I experience:

Learning Outcome : The internship provided us with a different take on how product design takes place. As part of the project, we were asked to learn various graphic design software like Adobe Illustrator, Adobe XD, and Adobe Photoshop.

PS-I is an exposure oriented course : It depends on the project that students are assigned to and the stance that students take based on the project. Even though this was an IT station as per PSD, the project assigned to us was a content creation. If people stop having unrealistic expectations from PS and actually put effort into it, it is definitely a good experience that will help with future endeavors.

Name: DODDAKA SAI PHANI DEEPAK (2017A7PS0010H)

Student Write-up

Short Summary of work done : I was assigned with a task that involves the development of a dynamic web application of job registration form. Applicants have to fill in their details and skills they possess so that they will be available for consideration. It is developed using all the technologies we've learned which include servlet technology, restful web services, JPA, JSP, JavaScript. Each field in the form is provided with validation check so that the user inputs correct form of data i.e. the user may not enter a character in the mobile number field, mobile number digits are limited to 10, it is made sure that user fills in all the required fields. Data with particular specifications can be fetched by clicking view profiles button below the form and required parameters are to be specified. The data which meets the given specifications are displayed in the form of a table.
The second Task is to create an App which resembles the above web application. The App is developed with Android Studio and inbuilt SQLite database. The App has three activities Display Activity, Register Activity, Fetch Activity. Register Activity where an applicant enters his details such as personal details, education details, skill details, contact details. The details are stored in SQLite database. When the user clicks on the register button then Fetch Activity is called. Where user can verify his details by filling the necessary details. Display Activity shows all the details of job applicants.

PS-I experience: I am assigned to App Store Team. The Mentor provides us with prerequisite for the project. Even clarified doubts on prerequisites and help us strengthen concepts related to Prerequisites.

Learning Outcome : Developing Web application using Spring Boot IDE.
App Development using Volley Android library.

PS-I is an exposure oriented course : During PS-I, an intern can improve interpersonal skills such as Active Listening, Team Work, Responsibility, Flexibility, Dependability.

Name: Tejaswini Jupudi (2017AAPS0418G)

Student Write-up

Short Summary of work done : The objective behind this project is to come up with ways to bypass and resolve the issues which arise during the various steps involved with the integration, deployment, and use of APIs and CI tools.
Through the project, we deployed sample APIs on-premise through CloudHub for customization and control over the implementation process. We also aim to enable monetization for APIs, including configuration with MySQL database and manager analytics for overseeing and monitoring the usage of the APIs published in the store for monetization. Finally, we integrated Gitlab, Jenkins and Mulesoft to set up a project build with Jenkins and pipelined to GitLab where the output can be displayed, through plug-ins.

PS-I experience: It was very enlightening and an experience one of its kinds because it was the first time looking at working of a company.

Learning Outcome : I came to know about the software currently in use and how to use them. I also learnt about office culture and what is professional etiquette in the workplace.

PS-I is an exposure oriented course : Since it exposes students to the workplace culture in various parts of the country without bias, i would agree with the statement.

PS-I station: Ebek Language Laboratories Pvt. Ltd. , Chennai

Student

Name: Jayanth Tummalapenta (2017A7PS0075P)

Student Write-up

Short Summary of work done : The main objective of the project is to make the product Tutor365 more user-friendly and efficient by fixing bugs. New features and models may be added to the back-end and integrated into the production website. Other objectives include UX/UI refactoring to improve the client experience. The project also aims to finish the software with comprehensive unit testing to ensure complete robustness, and a 100% sound codebase.

PS-I experience: It was a good learning experience.

Learning Outcome : Learn software development with Django and Angular.

PS-I is an exposure oriented course : I think this statement is valid as PS1 gives one experience working in a real world environment with real world constraints.

PS-I station: Edifecs Technologies Private Ltd. , Mohali

Student

Name: Sanjeev Singla (2017A7PS0152P)

Student Write-up

Short Summary of work done : Machine Learning models , Chat bot using python libraries , amazon web services.

PS-I experience: It was a good experience in all. Good projects , good environment and helpful mentors.

Learning Outcome : Python , Machine Learning, Data Science and work-life balance.

PS-I is an exposure oriented course : Agreed , PS gave me an exposure to corporate life .

Name: Lavanya Soni (2017A7PS0151P)

Student Write-up

Short Summary of work done : Work was related to Data Analytics using Python Libraries and other tools. Although a live Project was not offered to us (we were 2 of us in our team), we were frequently asked to learn new tools and technologies and create small projects using them and then report it to the mentor.

PS-I experience: Overall experience was pretty good. The station offered free lunch and drinks in the cafeteria. It also had a play room which had TT table, Foosball, Pool Table etc. where we could refresh ourselves during the break.
The mentors were also very helpful. Company also provided us laptops to work on. Overall we got a taste of a proper Corporate Life.

Learning Outcome : Apart from the experience of a corporate life, we learnt the following tools and technologies:
Python Language, Pandas Library, NumPy Library, Spark Framework, MatplotLib Library, Tableau.
Basically we learnt tools related to Exploratory Data Analysis (EDA)

PS-I is an exposure oriented course : It's true, because in these 55-56 odd days you can only get acquainted with the company and the work it does and by the time you get prepared enough to handle bigger projects, PS comes to an end. But it surely gives you a taste of how things work in a company, what is the hierarchy that the company follows and other things such as Professional communication etc.

Name: Darshan Agrawal (2017A7PS0233P)

Student Write-up

Short Summary of work done : Software Testing and Chatbot

PS-I experience: Amazing and a lot of things to learn about the corporate. Lots of facilities available and a good working ambience.

Learning Outcome : Software Testing and making the chatbot which is based on Natural Language Processing and Machine Learning applications.

PS-I is an exposure oriented course : Yes it gives students the exposure to corporates and working knowledge.

Name: Vinayak Aggarwal (2017A7PS0008G)

Student Write-up

Short Summary of work done : In total there were 2 major projects which started after a training of 2 weeks. First one was to develop 2-3 java programs to produce data that followed the healthcare guidelines and could be a data for testing there existing softwares. Second project was based on Tableau which is a data analytics software and we were trained on it and were required to create dashboard for a client in Middle East.

PS-I experience: It was great. The office is one of the best we could have thought of. Health and wellbeing of the employees is the utmost priority of the company. Other employees are nice and easy to start a conversation with. Work environment is great and the mentors are also understanding enough and appreciate the work we have done. They gave us compliment saying that the java product we created was better than the one their employees had written some time back. We learnt few new softwares that the company uses and were trained on its usage by the mentors.

Learning Outcome : We learnt working on data analytics software and made generic production level codes so that it could be collaborated with their original code. We also

learnt to use various products developed by the company. And were trained on the various transactions that take place b/w the insurance company, hospitals and the patient, and how are they processed and sent to each other.

PS-I is an exposure oriented course : I agree with it as we learnt the way to talk to people in the corporate world. We got to know how a project happens with so many people working together and were made aware of the formal channels used for project collaboration. Real industry experience was provided and it was necessary because it is very different from the one we have in the college.

PS-I station: EgnifyTechnologies , Hyderabad

Student

Name: Giridhar Bajpai (2017B4A71451H)

Student Write-up

Short Summary of work done : The project work was based on front end web development. The main task was to make the front end of two new features for the Content Management System, which is a web app used by educational institutions to organize content and display it in a logical way. The first step of the task was to make the User Interfaces for both the features according to the provided designs.This step was accomplished using ReactJS. The second step was to integrate the developed UIs with APIs so that data from the database can be used by the user through the UI.

PS-I experience: Apart from the technical skills acquired, the overall learning experience was very good one. The experience gave an insight into the office culture and how things work differently here. Also, it gave an idea about the differences between student life and office life.

Learning Outcome : During the course of the internship, I learned a few new skills which are not a part of the BITS curriculum. Not only that, I learned about the production

flow and hierarchy of a company. Also, I learnt about the habits and practices of a good developer.

PS-I is an exposure oriented course : In my personal opinion, it is an unvarnished truth that PS-1 adds to the experience of an individual by giving an insight into the realm of the corporate world.

PS-I station: Eliptico IT Solutions Pvt. Ltd. , Hyderabad

Student

Name: Aditya Vishwakarma (2017B5A70954P)

Student Write-up

Short Summary of work done : I was assigned to a exercise project work that aimed towards learning of basic application of Machine Learning. The problem statement was to predict the length of stay at hospital at the time of admission using ML-models. The core mathematics behind the models were not taught but only the basic outline of ML implementation was told.

PS-I experience: The company's environment is good and people are very experienced and are very humble to interns. Overall it was a good experience

Learning Outcome : I have learnt the basic pre-processing of data and basic implementation of ML.

PS-I is an exposure oriented course : The statement is very true as one do get to learn a lot about the corporate work environment and how the things work in the corporate world.

PS-I station: Enixta Innovations Pvt. Ltd. , Hyderabad

Student

Name: Saketh Vishnubhatla (2017A7PS0167H)

Student Write-up

Short Summary of work done : Our project was to study existing deep learning texhniques and some open source tools for the task of text recognition from both printed documents as well as product images. For the former task we used tesseract OCR engine an open source utility provided by Google. For the latter part we integrated an EAST model for text detection and a CRNN model for text extraction from bounding boxes.

PS-I experience: It was a very good learning experience.

Learning Outcome : Not only did I get to know various deep learning methods and their applications but, I also observed a startup environment closely and the importance of communicating and networking with people.

PS-I is an exposure oriented course : Yes, PS did give me an idea of what is actually expected in the industry.

PS-I station: Geomitra Solutions LLP , Nagpur

Student

Name: Aman Badjate (2017B3A70559H)

Student Write-up

Short Summary of work done : Our project is to make a Web application that connects people to different NGOs so that people can donate their utilities easily and NGOs can save their resources of organizing huge collection drives. In our project, both the donor and NGO will have their own dashboard. Donor can donate his/her utilities and also see whether any NGO has claimed the donation. NGO can see how many donations are available for claiming and then claim the required donation. Donor can also see how many donations he/she has made till date. Donor can also see whether his/her donation is claimed by the NGO or not. If donation is claimed then in the donor dashboard, this particular donation is striked off. Donor can see the pending donations on a webpage and the claimed donation on another page. Similarly for a NGO, donor list can be seen and on clicking NGO can see the donations of the donor and then claim the donation. After claiming the donation, NGO gets the contact information of the donor and donor receives a notification and then this donation is striked off from the pending list of donation in the donation dashboard.

PS-I experience: I got to understand how a company actually works and how work is divided in a team. People here were very helpful and helped us whenever we got stuck.

Learning Outcome : I learnt Reactjs, Axios, Postman, Material UI, Springboot

PS-I is an exposure oriented course : Yes, I got company exposure and learnt how a company actually decides on a project, sets its milestones, distribute the work among the employees and completes the project. PS1 helped to get this exposure so I do think that PS1 is exposure oriented course

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Name: Shreyas Nisal (2017B5A70310G)

Student Write-up

Short Summary of work done : We created a web portal to connect NGO's to potential donors of various items such as clothes, toys, books, etc. Donors can donate using a simple, easy to use interface, and can also view their pending donations, completed donations, and the NGO that has claimed their donations. Similarly, NGO's have an

option to view donations, either all of them or view them by item type, and claim donations that they require.

PS-I experience: The experience was good, people were helping and were willing to provide resources for us to learn.

Learning Outcome : We learnt about front end technologies, especially ReactJS, and about back end frameworks as well, especially Spring Boot. We learnt the intricacies of both of these frameworks, and were able to make an end-to-end web application using these technologies.

PS-I is an exposure oriented course : Yes, PS-1 gave us an experience on how the industry works. It also gave us the opportunity to meet all kinds of people, and how to deal with a variety of situations.

Name: Siddhant Kharode (2017B5A71619H)

Student Write-up

Short Summary of work done : Our project is to make a Web application that connects people to different NGOs so that people can donate their utilities easily and NGOs can save their resources of organizing huge collection drives. In our project, both the donor and NGO will have their own dashboard. Donor can donate his/her utilities and also see whether any NGO has claimed the donation. NGO can see how many donations are available for claiming and then claim the required donation. Donor can also see how many donations he/she has made till date. Donor can also see whether his/her donation is claimed by the NGO or not. If donation is claimed then in the donor dashboard, this particular donation is striked off. Donor can see the pending donations on a webpage and the claimed donation on another page. Similarly for a NGO, donor list can be seen and on clicking, NGO can see the donations of the donor and then claim the donation. After claiming the donation, NGO gets the contact information of the donor and donor receives a notification and then this donation is striked off from the pending list of donation in the donation dashboard.

PS-I experience: I got to learn many technical skills and soft-skills as well. Overall I found that it helped me improve my communication skills more than my technical skills.

Learning Outcome : I got to learn many new things in the field of Computer Science, particularly web-development. During the PS I learnt about various technologies such as HTML, CSS, React JS, Springboot, and various other utilities. Most importantly, I improved my communication skills and learnt how to work in a team.

PS-I is an exposure oriented course : I totally agree with this statement because I got the much needed industry-based knowledge which I think cannot be imparted to students inside a classroom. Also, PS gives you the first-hand experience of working in an industry and you get to know how you are expected to work in a large organization where many people work together to achieve a goal.

PS-I station: GoScale Technologies , Bangalore

Student

Name: Anushka Jain (2017B1A70975P)

Student Write-up

Short Summary of work done : GoScale is currently working on a real-time assessment platform for technical recruitments which would help companies in their recruitment processes. It gives candidates a sample piece of work, similar to that which they would do in the job, and assess their performance at it. The companies can collaborate with candidates and watch their thought process evolve as they work through a problem.
Our work as interns was to innovate the technical assessment process and make it easier for companies to evaluate candidates since interview questions are critical to achieve the objectives whether it is algorithm/data structures or real-world problems. We had to Identify / Create the Problem,to understand the algorithm/assessment ecosystem, identify or create problems and tag them to relevancy like what kind of problem, difficulty etc and then solve the problem in 2-3 possible ways. The solution will be rated as per time/space complexity.

PS-I experience: The PS experience was very enlightening as it provided me with experiences, lessons, and the tools that will help me in the future for a full time job. It

helped me to get used to the professional setting and to navigate the working world through real-life, hands-on experience Learning new technical and other soft-skills within a short span of time as per the demand of the new environment and the situations that arise around me was a great aspect of the PS I.

Learning Outcome : ● This Project has given me a deeper insight into some core concepts of Data Structures and Algorithms.
● It has me to expand my knowledge beyond the classroom level. By actually creating the questions, it has enabled me to dive into the topic and enhance my critical thinking ability.
● It has also made me appreciate the intricacies and hard work involved in framing a full-fledged question from scratch.
● Developed skills in MySQL and shell scripting

PS-I is an exposure oriented course : It is providing me with experiences, lessons, and the tools that
will help me in the future for a full time job. Getting used to deadlines and learning to cope up with them, honoring my commitments, working with professionals and getting to know their schedule, along with improvising on the go. The work environment has taught me to find the solutions to the problem on my own and has made me more independent and confident towards solving real world problems.

Name: Anurag Madnawat (2017A7PS1923G)

Student Write-up

Short Summary of work done : I worked on the project titled the Algorithmic Innovation Program. We worked on a product of GoScale called TalScale. TalScale is an online technology talent recruitment platform.
The project was to formulate a set of suitable questions to test the programming and logical thinking skills of candidates. Problems vary widely in topics and solution approaches, and they test the programming proficiency and algorithmic capabilities of candidates. Some of the question topics are bit manipulation, arrays, dynamic programming, recursion, etc.
The scope of the project extends to formulating problems statements, identifying and setting constraints, writing solutions, generating test data and corresponding solutions.
During the course of my PS, I formulated multiple questions for the TalScale site and contributed immensely to the company. I worked on topics like Binary Search, Trees,

Heaps, Priority Queues, Graphs. I faced many challenges in the process of formulating questions such as learning about the algorithms itself, formulating large testcases and integrating questions into the website interface.

PS-I experience: My PS - I experience was great. I got a lot of hands on skill and knowledge that i will value.

Learning Outcome : This Project has given me a deeper insight into some core concepts of Data Structures
and Algorithms.
● It has me to expand my knowledge beyond the classroom level. By actually creating the
questions, it has enabled me to dive into the topic and enhance my critical thinking ability.
● It has also made me appreciate the intricacies and hard work involved in framing a full-fledged question from scratch.
● Developed skills in MySQL and shell scripting.

PS-I is an exposure oriented course : I feel that this statement is correct. My PS experience exposed me to the inner workings of a startup and gave me a taste of the corporate life. I will always highly value this experience

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Name: Abhinav Ramachandran (2017A7PS1176P)

Student Write-up

Short Summary of work done : At GoScale Technologies, we prepared programming questions for their live interview platform, TalScale.
The process of formulating a problem begins with identifying a concept. Websites such as geeksforgeeks and CodeForces provide lists of concepts typically used for interviews, and the problems found on those sites often contain interesting concepts around which similar problems can be formed.
After sufficient research has been done on a concept, a problem statement is written. At this point of time, the expected solution procedure/algorithm which utilizes the central concept should be kept in mind. Following this, an editorial which details the expected solution must be composed, and a model solution which utilizes this method must be implemented in code. A thorough examination of the model solution is required to

ensure that it is functional on all input combinations and that it is optimal. This step typically requires a mathematical proof or some sort of intuition along those lines. Also required is a thorough analysis of the runtime complexity for both optimal and naive solutions. This is necessary in order to estimate the requisite size of input test cases to be generated.
Following this, online test case generators can be used to generate both small and large inputs, and the corresponding outputs are generated by running the model solution. To upload the question to the database, question related data must be converted to a CSV (comma-separated values) format and insert/load commands must be written to add the data to the database.

PS-I experience: The experience was very good. I learnt a lot of technologies and interacted closely with a fledgling startup.

Learning Outcome : I learned various topics related to Data Structures, Algorithms, Dynamic Programming, Arrays, Bit Manipulation, Number Systems, and so on. I also learned about SQL, BASH scripting, and other tools pertinent to real life development.

PS-I is an exposure oriented course : I gained great exposure at PS-I, and I think GoScale technologies is a great PS station to expose students to the realities of the tech startup procedure.

Name: Niral Khambhati (2017A7PS0130H)

Student Write-up

Short Summary of work done : I learnt Redux for React and worked on the frontend for a product's Dashboard. Learnt how a webpage loads, from the requests to the rendering by the browser. Improved the webpage load times by ~40% for TalScale and TalScale Blog websites. Learnt UX while working on all of these projects.

PS-I experience: It was really nice to work in a BITSian startup. The mentors were really knowledgable and were more than willing to help with everything. The main things to learn were to be professional at all times, to be open to learning new things everyday and working hard. The projects were a bit vague but got very interesting as the time went. Overall it was a good exposure to the corporate world and their ways of doing things.

Learning Outcome : Learnt Redux, understood UX laws and how to apply them, Understanding how to improve website performance.

PS-I is an exposure oriented course : This was true indeed in my case. The exposure we got while working a startup was really great. The pace at which things moved was incredible and made us ready for what was to come.

Name: Rithvik DSouza (2017B5A70200G)

Student Write-up

Short Summary of work done : During the course of PS-I we had to work on one of the company's core product which was a package that enabled other companies to recruit talented candidates. We had to work on questions for the technical interviews. We had to prepare test cases etc. in accordance with the standards set by questions in the field of competitive programming.

PS-I experience: PS-I was a fulfilling experience where we got to observe the inner workings of a startup and were able to interact with the founders some of whom were BITSians themselves. We were encouraged to start a company ourselves.

Learning Outcome : Built a stronger base of knowledge in Data Structures and Algorithms, learnt to use MySQL, got exposure to startup culture.

PS-I is an exposure oriented course : I agree with the statement entirely. My experience with PS-I can entirely be summed up with the term "exposure". The things I learnt there may or may not be applied later on. However, the time I spent with the founders and at the company meetings helped me understand the value of team work, good leadership and strong deadlines. I'm sure these lessons will stick better with me.

Name: Prateek Agarwal (2017A7PS0075H)

Student Write-up

Short Summary of work done : The project at my PS Station was to create a problem bank used during the technical interview rounds during the recruitment process by IT companies. During the course of PS, I created a set of 15 questions broadly related to the two primary data structures - arrays and graphs. The questions mostly covered all of the different well known algorithms which are widely used while working with these data structures. Secondly, we used to identify problems in real life and then design well framed questions out of it such that it addresses those problem in real life. Apart from developing the questions, the next major task was to create a series of test cases for each problem keeping in mind all the edge cases and bigger test cases ensuring that only the most optimal solution/algorithm in terms of both time and memory is only accepted.

PS-I experience: It's really good to have an experience as such received during the course of entire PS-1 at an early stage right after the second year since we get exposure to the real world and get involved more with the practical experiences rather than the theoretical stuff which we have been learning right from the beginning till now. We also got acquainted with the work culture that prevails in the modern IT companies. Overall it was a worth taking experience which shall definitely help in the professional life during the future days to came

Learning Outcome : Enhanced the knowledge in the subject Data Structures and Algorithms (DSA). Got familiarized with some of the most commonly used data structures such as arrays and graphs while developing questions on those topics. During the course of the project, I also learnt various new algorithms that are used to solve some of the common problems asked in the field of competitive programming. Side by side also learnt various techniques about how to go ahead with finding out an optimal solution to a given problem.

PS-I is an exposure oriented course : I strongly support the above statement as the experience received during this course is worth and shall definitely help us out in the upcoming professional life. It gives a good exposure to the practical world and teaches upon how to implement everything that you have learnt in the past to your work.

PS-I station: Happiest Minds , Bangalore

Student

Name: KUNAL MOHTA (2017A7PS0148P)

Student Write-up

Short Summary of work done : My project for PS-1 involved the use of Machine Learning and Image Processing techniques. There was also some full-stack development involved - on Angular, Nodejs and Flask. With respect to ML, I got to work on Image segmentation models like Mask RCNN and YOLO. For Image Processing, I got to use OpenCV python.

PS-I experience: Great company for Data science aspirants. Employees treat you very well and value your contribution. Got some insights on how the companies in IT industry function.

Learning Outcome : Coding in Python. Full stack dev on Angular, Nodejs, Flask. Exposure to ML and IP. Several software like Jupyter Notebook, Google collaboratory, etc.

PS-I is an exposure oriented course :. Nil

Name: Rohan Maheshwari (2017B4A70965H)

Student Write-up

Short Summary of work done : We had to primarily work on Automating the process of Short Answer Grading. Short answers are classified as anywhere from 1 line to 1 paragraph. We had to build a model that would take a question, a reference answer (provided by the teacher preferably) and a plethora of student answers and would grade them with a score out of 10 and also tell whether the answer is deemed correct, incorrect or partially correct.

PS-I experience: It was a very good learning experience. I enjoyed my time with Happiest Minds a lot.

Learning Outcome : I learnt a lot about Natural language Processing concepts like stop words, stemming, lemmatizing, embedding, vector representations etc. Also during the model building process I learnt about Machine Learning algorithms like Random Forests and Generative Adversarial Networks

PS-I is an exposure oriented course : I think the industry exposure especially how a team operates in an IT company was very helpful to me. Getting to know the ins and outs of an IT company has showed me the path (areas of focus) I should follow/concentrate on in my third and fourth years at the campus

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PS-I station: Helix Tech. , Goa

Student

Name: Kaustubh Dwivedi (2017B5A70615P)

Student Write-up

Short Summary of work done : Prepared the backend of a mobile application, Papercrunch, an app designed to teach a programming language to young students, using Django framework.

PS-I experience: I enjoyed learning new softwares and programming languages.

Learning Outcome : Learnt how to prepare the backend of a mobile application, website, etc.

PS-I is an exposure oriented course : I agree with the statement. This was the first time I got introduced to the working of an actual IT company and dealt with deadlines.

PS-I station: Heraizen Technologies Pvt. Ltd. , Bangalore

Student

Name: Akhil Tarikere (2017A7PS1916G)

Student Write-up

Short Summary of work done : The PS-1 set of interns had to add a Data Analytics component to the already existing product of the company. Of the 38 working days in our PS Station, 10 were reserved for technical training part, where we learned the various technologies that we had to have a basic grasp of, to be able to do what was coming ahead. The next 28 days were mostly completing the problem statements. We had to deliver an end-to-end solution for them which included a basic front-end part (angular), a back-end part (Python), the DB (MongoDB). The company works in the educational sector where they make ERP products for their clients (clients being education institutes) which includes - academics module, administration module, and an accreditation readiness module. The work we did was related to the NBA accreditation module where we help our clients by adding basic visualizations to the clients' own data for a few areas in the NBA accreditation document so they can learn and improve wherever required.
The first set of problems will take some time as you will have to work around with the database, figure out stuff that you did not need during the training period, but the set of problems after that will be a little swifter and easier as you would have a decent idea of what you need to deliver. We were told that we would be given both descriptive and prescriptive analysis problems, but we only had descriptive ones.
In future collaborations with BITS Pilani, the company might be looking at continuing the same project into prescriptive analytics or some other similar work. Be assured to learn a lot, to get some good quality and good amount of work, and have a lot of expectations set on us as we are BITSians.

PS-I experience: The company had a lot of expectations set on us, and at first we even doubted ourselves as the learning curve looked very steep. The manager and the tech-

lead guided us throughout our journey. The manager always guided us on the non-technical front and his feedback + comments will be very useful and guide us for the rest of our career. The tech-leads technical expertise was very helpful and guided us throughout our time there. But, you have to be ready to work from 9 to 6, M to F. Some times when there is a lot of work left, we were also asked to work after hours and on weekends by ourselves to catch up with the timetable that had been set for us. The front-end part of the internship was not told to us initially and we had to learn therequired technologies as and when required. Be ready for a lot of changes in the requirements and prerequisites for the problems.
Because of the busy schedule at work, you will have to finish your PS-1 evaluative components after work hours.
Everyone else involved in the company and internship is very friendly and they appreciated our work during the time we were doing our work and also when we finally handed it over to the permanent-employees at the company.
They also had a felicitation program for us on the last day of the internship where a lot of the top-level management team and advisors to the company were present. They also handed us our certificates and a token of appreciation during the felicitation.
Overall a very good learning experience on the technical as well as the non-technical side if you are ready to put in the effort.

Learning Outcome : Technical side: Python (core python and its modules required for data analytics), MongoDB, Flask, Angular, Bootstrap.
Non-technical side: Teamwork, report-writing, professional ethics, time discipline.
I learnt about how organisations work, how the various modules of the product interact , what is expected from employees/interns and how actual projects in the IT industry will come about.
You also learn that they expect a lot from BITSians just because of the BITS tag.

PS-I is an exposure oriented course : Yes, this is true to a very good extent. Will give students a lot of exposure about the sector of the industry that you are interested in.

Name: Ananya Haritsa (2017AAPS1931G)

Student Write-up

Short Summary of work done : As interns at Heraizen Technologies, we are using data to glean insight into NBA Accreditation. By using visual representations of performance trends at colleges, it is easier to understand the scope of improvement.

We used different data analytics techniques to come up with meaningful observations from the data present in the company's database

PS-I experience: During the course of our PS-1 we had a ramp up process so in the first 10 days, we were trainees. We learned the required technology and software to start as Data Analytics interns.Subsequently, we worked as the aforementioned Data Analytics interns.Finally, we were Full-Stack developers (Front-end + Back-end) to build an end-to-end solution.

Learning Outcome : Full stack development for data analytics using python,mongoDB,AngularJS and Flask

PS-I is an exposure oriented course : It allowed us to test the theories and concepts that we learned in college and understand the practicality of it.Hence it was an exposure oriented course.It allowed us to express ourselves in a professional way and helped us collaborate with other interns and office employees.It also helped us manage our time better and and prioritize responsibilities.

Name: Anirudh Garg (2017A7PS0142P)

Student Write-up

Short Summary of work done : Our work as initially decided and imitated to us was Data Analytics and machine learning. But over the course of the ps a lot of other stuff was added to our basket like Angular and flask.
Ultimately our work here became a full stack development project of adding a module with data analysis, ready to be added to the product DHI here at Heraizen.
We created the module over the course of 7 problem statements with us divided into teams, and each of us finally working on 2 problem statements each.
In all it was a good learning experience as a full stack developer just not for the data analytics and machine learning part as it was pretty basic.

PS-I experience: In all it was a good learning experience as a full stack developer.
Though it was fun at times but the work and the environment here was boring overall. We had to attend office daily from 9-6. We were assigned a separate room only for the 10 of us which was just like a classroom.

Learning Outcome : over the course of the ps we learnt a lot of things:
Python, MongoDb, Angular, Flask and some ML algorithms.

PS-I is an exposure oriented course : Our PS was more work oriented than an industrial exposure.
We 10 interns worked on the projects alone without the involvement of the other employees, so it lacked a bit of industrial exposure. But overall it was a good technological exposure.

Name: Mohanish Mhatre (2017A7PS0938G)

Student Write-up

Short Summary of work done : It was a great primer to the IT industry. We were assigned certain problem statements to solve. They were based on full stack development and required the understanding of MongoDB, Flask and Angular. We learned Python and it's libraries, some ML algorithms and Angular for the front-end in the first 20 days. Using what we had learned, we were given two problem statements to develop end-to-end. Apart from the tech side, there was a lot of focus on UX and UI for the front-end, keeping things intuitive and working in a team to get it done.

PS-I experience: The workload was a bit heavy as there were many tasks and problems in the learning phase. One of the things of the IT industry was the volatility and fast-paced changes. The statements had changed about 4 times and we had to develop it accordingly.

Learning Outcome : I had no idea about Angular, Flask and the python libraries(Numpy, pandas, etc). They're a skill I've developed because of PS-1 and I'm grateful for having that exposure. Apart from that, working on deadlines, with teams and developing a product required a lot of common sense and critical thinking. We had to step in a domain we had no clue about and had to be creative in our ways to bring it together.

PS-I is an exposure oriented course : Yes, the exposure to product development, team work and knowing about how a company works, what it does and how it handles

things was enlightening. I come back with an experience that'll guide me in the IT industry.

Name: Shelly Eldo Mathew (2017A7PS0067G)

Student Write-up

Short Summary of work done : Dhi, the main product of the company is a college automation software. We were asked to help them in developing the analytics section of the product. We were divided into groups, and each group was asked to develop a feature that does an analysis on data to come up with some meaningful result. To do this we had to study some technologies dealing with data analytics and web development like python, MongoDB (Database used by the company), Angular, Flask etc . We studied all this during the first 10 days of the internship, and then each of us worked on 2 problem statements using these technologies.

PS-I experience: It was a good learning experience. We were able to learn some of the current relevant technologies. But, there had been some confusions during the program. The problem statement kept on getting altered. I expected more work in data analytics, but web development work and learning angular required a lot of time.

Learning Outcome : Learned some of the best industry relevant technologies like Python, Angular, Flask, MongoDB etc. The technical head of the company kept on sharing his insights about the industry, how it works, how to survive etc. By the end, we were able obtain a clear picture about the industry.

PS-I is an exposure oriented course : Yes. PS 1 is my first experience in the industry as I have not done any Internships before.

Name: Manasa Harish (2017A7PS0094G)

Student Write-up

Short Summary of work done : The product of the company "dhi" is an automation software providing ERP services to academic institutes. Our work was to add Data Analytics to their product which would help the instituted get NBA accreditation. The work we did during our PS-1 majorly involved data analytics and full stack web development. We spent about 10 days learning tools and software for data analytics and the database MongoDB. Then we started working on the problem statements in groups. While working on the problem statement 1, we also had to learn web development tools so that we could present our results on web pages. We were able to produce an end-to-end solution to each of the problem statements by retrieving relevant data, analyzing it, plotting meaningful graphs and displaying it on the screen.

PS-I experience: The company enabled us to learn required tools and software and implement them in the problem statements we worked upon. However, we were not informed as to what exactly was expected of us and what we needed to learn. We were told that we would be working on Data Analytics, but while working in the first problem statement, we were also asked to learn Angular, Flask and other tools for Web Development. While this helped us learn more than what we expected to, it would have been better had it been informed earlier.
We got to learn about the industry, the real world problems that are solved and experience the environment at workplace. Our technical mentor was very helpful and ensured we learnt the necessary tools.
This is a good PS station for students who want to learn Web Development. The Data Analytics and Machine Learning concepts are not used adequately in the problem statements.

Learning Outcome : This PS station enabled me to learn a lot of tools and software. I learnt all necessary tools for data analytics including NumPy, Pandas and also the NoSQL database MongoDB. As we developed end-to-end solutions, a very deep learning of these concepts was enabled. I also learnt the tools for Full Stack Web Development. This was a completely new learning and was very helpful.

PS-I is an exposure oriented course : I completely agree with this statement. The exposure we got is invaluable. We learnt a lot about the industry and the work environment.

Name: Akhil Agrawal (2017A7PS0190H)

Student Write-up

Short Summary of work done : The project is divided into 2 parts. The first part is creating a Machine Learning Model for tool wear detection and the second part is prediction of power output generated in a factory. Both are based on the data got from sensor values monitoring the machines and factory. Once the models are working, we need to create a webpage visually showing the models are running and then upload it to the Hexagon demo website.

PS-I experience: I had a great experience at Hexagon . I got to know about the recent developments in the field of Artificial Intelligence and Machine Learning. Also working on a real product of Hexagon helped us think more in a corporate way and work on our presentation and pitching skills.

Learning Outcome : The technologies used include TensorFlow/Keras/Python for building the models, HTML/CSS is used to deploy it on website.This project helped us to overview various technologies/ softwares/ tools which we will use later in the corporate world.

PS-I is an exposure oriented course : The corporate exposure that Hexagon provided will help me in the future when i work with other companies. Thus for me PS-1 was an exposure oriented course.

PS-I station: Hexagon Capability Center India Pvt. Ltd. , Hyderabad

Student

Name: Sanjiv Yelthimar Shenoy (2017A7PS0224H)

Student Write-up

Short Summary of work done : The project is divided into 2 parts. The first part is creating a Machine Learning Model for tool wear detection and the second part is prediction of power output generated in a factory. Both are based on the data got from

sensor values monitoring the machines and factory. Once the models are working, we need to create a web page visually showing the models are running and then upload it to the Hexagon demo website.

PS-I experience: It was great working here. Really learnt a lot of new things in the field of AI. Also working on a real product in a commercial setting was quite exciting.

Learning Outcome : Machine Learning Exposure(using Tensorflow, Keras), Web Development(Javascript, HTML, CSS)

PS-I is an exposure oriented course : The corporate exposure achieved in HCCI with be of great help while working with other companies in the future

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Name: Syed Jamaluddin (2017B4A70769H)

Student Write-up

Short Summary of work done : Developed a time worksheet to help scrum teams bring in visibility on day to day efforts logged across different Azure DevOps work items. Developed a proof of concept for classification of URLs using Lexical Analysis and Machine Learning Algorithms.

PS-I experience: The most amazing milestone in my career. Got to experience the corporate life and learnt new things i never imagined i would. Couldn't have asked for anything more.

Learning Outcome : Learning about the different development stages of a project, how to collaborate and work together seamlessly, presentation skills and practical thinking.

PS-I is an exposure oriented course : Yes definitely and much more for me. I was actually actively involved in a live project that the team had been working on and got a first hand experience on team collaboration, meeting deadlines, improvising and fixing errors.

Name: Praneetha Vaddamanu (2017AAPS0319H)

Student Write-up

Short Summary of work done : The aim of this project is to gain practical exposure to the application of artificial intelligence in various fields, and to create a working model of use to the company. The project assigned to me at Hexagon comes within the domain of machine learning using various signal processing techniques.
This project is divided into two sub-tasks. The first one deals with Acoustic Scene Classification- aimed at the classification of a given audio clip into one of various environments in which it may have been recorded (such as a metro-station, airport, office, etc).
The second sub-project is focused on Rare Event Detection. It aims to detect anomalies (such as gunshots) in an audio clip, by training using binary classification techniques.
The project required me to get familiarized with tools such as Keras, TensorFlow, Python. It also gave me the chance to learn various machine learning and deep learning techniques such as Convolutional and Recurrent Neural Networks, Support Vector Machines, data augmentation techniques, etc.
The nature of our data also required me to understand how sound signals are processed. I was able to learn the way spectrograms, mel frequency cepstral coefficients (mfccs), short-time Fourier transforms (stfts), harmonic-percussive source separation (hpss) all characterize the sound signal and enable us to extract relevant information from it.
After satisfactory model performance, the final models were presented and demonstrated on a web-page, which were uploaded to the Hexagon demo website.

PS-I experience: The experience of Practice School-I proved to be an excellent introduction to the corporate world, and gave me the hands-on opportunity to learn about machine learning and artificial intelligence.

Learning Outcome : I am grateful to have gotten a hands-on working experience in the field of machine learning and deep learning, and an excellent exposure to industry-grade tools and protocols that are used in the corporate workplace.

PS-I is an exposure oriented course : PS-I has given me exposure to working in the corporate sector, working effectively in a team, presenting technical reports, and applying machine learning techniques to various domains.

Name: Praneetha Vaddamanu (2017AAPS0319H)

Student Write-up

Short Summary of work done : The project is divided into 2 sub-projects. The first one deals with Acoustic Scene Classification- aimed at the classification of a given audio clip into one of various environments in which it may have been recorded, such as metro-station, airport, office, etc. This is done by training a Machine Learning Model on audio clips recorded in different environments, using architectures such as a CNN, and features such as mel-spectrograms, etc. The second sub-project aims to detect anomalies (such as gunshots) in an audio clip, by training using binary classification techniques. After satisfactory model performance, the final models must be presented and demonstrated on a web-page, which would be uploaded to the Hexagon demo website.

PS-I experience: It was an informative and pleasurable learning experience.

Learning Outcome : Learnt practical application of machine learning concepts, how to work effectively in a team, how to present findings in the most constructive manner. It gave me a nice exposure to the corporate work life in a technical context.

PS-I is an exposure oriented course : I fully agree with the statement. My PS-I experience allowed me to gain exposure to the work life, standards and tools of a corporate workplace.

Name: Nikhil Kandukuri (2017A3PS0497H)

Student Write-up

Short Summary of work done : My project at Hexagon was in Machine Learning.It was focused at a particular branch in machine learning called NLP(Natural Language Processing).The overall idea was to assess text similarity and return the most similar product descriptions that matched the user's query.I got hands on experience with many python libraries associated with NLP ,Gensim being the most important of the lot.Algorithms like Word2Vec,Tf-Idf,LDA,Dimensionality Reduction were extensively used.The work flow started with data preprocessing. Regular expressions for text manipulations,stemming and lemmatizing the data was done to make the data usable

for machine learning algorithms.The data was fed into Tf-Idf , Word2Vec algorithms and our model was trained to convert our text into machine readable vectors.Since vectors are mathematical entities it is possible to establish the similarity of the texts based on vector operations.Distance/Similarity metrics such as Cosine SImilarity,Euclidean Distance,Jensen-Shannon Distance were all evaluated on our text vectors and results were plotted and visualized.For plotting an interactive python library called plotly was utilized which allowed the user to play around with the different widgets and see how our data was plotted.Before plotting the multi-dimensional vectors in 2D/3D space they first had to be reduced to two or three dimensions.Algorithms such as PCA and TSNE were used to achieve this outcome.Some other visualizations were imlemented using plotly and also using the WordCloud library.

PS-I experience: Hexagon was my first taste of industrial exposure.From the fist day the environment was entirely professional and we were being treated as exactly as any other employee.Standard ID cards,very own workspace,employee meal cards were all part of the package. We were working hand in hand with other employees which meant that the projects that were being assigned to us were of great importance to the company.Regular review meetings on the progress of our project were conducted. Tasks were given according to our capabilities and we never felt overwhelmed and if anything it only increased our zeal for the upcoming tasks.The employees were very approachable and always considered our inputs and suggestions.All in all it was a great experience with even greater learning outcomes.

Learning Outcome : Being a second year student I didn't have much of an exposure in machine learning but I always wanted an opportunity to take it up and get industrial experience.At Hexagon I was able to learn the fundamentals of Machine Learning and at the same time apply the concepts I was learning to solve real world problems.Such a simultaneous learning helped me understand the bigger picture and adopt the better practices in machine learning .Overall it went a long way in making me grasp and implement concepts and programming tasks related to the field of machine learning and diving deeper into a vast and exciting field of study.

PS-I is an exposure oriented course : Till PS-1 all the courses we did were within the campus and sometimes we ask ourselves if these courses are going to help us in the future.However with PS-1 we see a direct connection between our learning and real world application. It gives a valuable corporate and real world exposure and what to expect outside of our institution.

PS-I station: Homi Bhabha Centre For Science Education , Mumbai

Student

Name: Yashdeep Gupta (2017A7PS0114P)

Student Write-up

Short Summary of work done : We created a new data format,which stored data in the form of triplets, and these triplets could be visualised by creating a graph out of them. It was a completely new idea by our instructed so no background knowledge was needed as such. We worked in HTML,CSS,JS,Node,Python and Bash.

PS-I experience: The supervisors were very supportive and helped us out throughout the project. They were easily approachable as well so it was a good learning experience.

Learning Outcome : Learnt to write bash scripts ,to work with file systems , to develop a query engine ,to render graphs using data and also to use python to generate data.

PS-I is an exposure oriented course : We really got to work in a professional environment. The main focus was always to make our applications user friendly and interactive, which gave us an idea about how the industry works.

Name: Vipin Baswan (2017A7PS0429P)

Student Write-up

Short Summary of work done : We worked on creating a new data format called Graph Data Digest Document Format. The aim was to represent any kind of data in the form of 7 column format and then render the graph for that data. On the completion of the project one should be able to see any type of data in the form of graph. We also developed a querying engine to query the database. This data format is inspired from RDF and our querying engine is inspired from SPARQL. We also created an interactive

web-platform which allows the user to query the database, create or delete tuples and to render the graph for the database using d3.js renderer.

PS-I experience: My experience was quite enriching. I learnt a lot of new concepts. We worked primarily on bash (unix). Our mentor was very helpful. We also learnt to use GIT.

Learning Outcome : We learnt GITHUB and how to maintain our projects. We learnt the importance of documenting our code. Overall it was quite a learning experience.

PS-I is an exposure oriented course : I certainly agree with this. It gives you industrial exposure and teaches you professionalism.

Name: Mrinal Pradhan (2017A7PS0453H)

Student Write-up

Short Summary of work done : Web Development. Developing plugins for discourse (discussion platform) for converting CNL queries to SQL queries automatically. This would also be incorporated into STEM Games, an activity based learning platform, created by HBCSE.

PS-I experience: Quite a good yet challenging experience with the projects, work ethics and professionalism were expected. Taught us many important skills.

Learning Outcome : Taught us work ethics, time management, work experience, got to learn myriad new things, growth of skillset, learning professionalism.

PS-I is an exposure oriented course : Completely concur. Work experience is provided and we are exposed to how things are done in the real world. Overall, a learning ambience us created.

Name: Raghav Prasad (2017A7PS0297G)

Student Write-up

Short Summary of work done : My project was to design and develop a plugin for the HBCSE conceived platform, STEMGames. STEMGames was conceived with the idea of an experiential pedagogy towards science education, backed by the ideals and experience of Dr. Nagarjuna in the same field. STEMGames seeks to inculcate "STEM habits" and a lasting avidity for scientific knowledge while achieving meaningful creations made by the participants themselves. The plugin, in its broadest essence, seeks to strengthen the knowledge network that STEMGames seeks to create. My plugin will provide an interface for the platform admins and staff to link topics to other existing topics in such a way as to create a chain of content. One can imagine how this could prove to be useful in a platform with educational content. For instance, a topic on Cryptography could be linked to another topic on Number Theory as a prerequisite. This would encourage the user to read up on Number Theory in the topic linked and then come back to Cryptography. In essence, this will allow the education process to be streamlined and, moreover, it will enable STEMGames (and Discourse) to be used as a Learning Management System. The Topic Organizer plugin places an additional button in the topic admin menu which opens up a form with a search bar to search for topics to link to the current topic from which the plugin is being used. After the desired topics have been searched and selected, a submit button on being clicked will add the topics to a postgres DB. Subsequently, every time a topic page is opened which has other topics linked to it, the data is fetched from the DB, parsed and the appropriate hyperlinks to the linked topics are displayed in a widget space created below the current topic title. Thus, this will enable STEMGames users to navigate the platform with ease and in a manner curated by the subject matter experts to ensure a structured learning experience.

PS-I experience: This was a new and enriching experience for me. I have never worked in the field of web development before and there were a lot of new things I had to learn before I could get started on making the plugin along with my team. For instance, the languages. I have never worked with Ruby on Rails or JavaScript before.
I might also add that it was challenging at times, frustrating even. But therein lies the beauty that I have come to associate with the process of software development. It has it's ups and downs, but one has to learn to battle through it and push forward..
This experience has been quite holistic. I have also learnt a great deal about what this prestigious institution stands for. Science Education. And I am glad to have had a hand in bettering the process and in doing so, a service to society.

Learning Outcome : I learned a lot of new languages and tools such as, Ruby on Rails, Javascript, CSS, Docker, etc. More importantly, I learned to work as part of a software development team.

PS-I is an exposure oriented course : I feel the work at my station reflected the veracity of the above statement to a great degree.

PS-I station: IDS Infotech Ltd , Mohali

Student

Name: Rituraj Roy (2017A7PS0957G)

Student Write-up

Short Summary of work done : I did a project related to machine learning under the domain of natural processing language.After getting to learn about python and machine learning we decided to do a project which can act as a text summarizer as well as can find document similarity between an input file and many other files already present in a folder.We created the working model on jupyter notebook and created a upi using flask which allowed user to upload a file and generate its summary as well as get a list of files already present on the system in decreasing order of similarity with the uploaded file.The project makes use of various concepts of Nlp and lies on the concept of tf idf and cosine similarity which are very famous mathematical aspects of machine learning.

PS-I experience: The overall Ps-1 experience was nice.We got to learn about python machine learning and nlp

Learning Outcome : We learnt python and its various libraries different aspects and tools present in machine learning concepts related to nlp and maths behind machine learning

PS-I is an exposure oriented course : We got exposure as we were allowed to get an experience of the corporate world and making a working project also proved to be very benificial.

PS-I station: Indian Meteorological Department , Pune

Student

Name: Varad Kshirsagar (2017A7PS0141H)

Student Write-up

Short Summary of work done : Observatory Monitoring System is an initiative by India Meteorological Department to enable the heads of AWS Lab to be able to see the working status of each instrument in the country in one portal. It is a kind of Inventory Management System as Station Incharges update the working status of their equipment from time to time which is visible to the heads. The project ensures fast communication about faulty equipment and quick calculation of statistics by the system. This helps the heads to gain valuable insight about the observatories at a glance. By saving all the data in a database designed for fast information retrieval, the system can also produce 'all time' statistics as well as statistics in a particular time frame. The concerned heads will also be able to see region and state wise statistics which will again help them to gain valuable insights. Hence, the project aims to make management of all the observatories more efficient and more insightful.

PS-I experience: I had a great PS-I experience. I got exposure to how huge organizations like IMD function. We were treated very kindly and were given guidance at all stages. The projects were given keeping our interests in mind and learning curve of the project was really good. I was exposed to new technologies and new challenges. The overall experience was great.

Learning Outcome : I learnt a great deal about the different aspects of web development and statistics generation. I'm really happy about the new types of SQL queries that I learnt for generating statistics. I also learnt other non-technical parts of web development such as Requirement Analysis of Functional and non Functional

Requirements. In the process, I gained a lot of experience with PHP and libraries of PHP.

PS-I is an exposure oriented course : I agree with the statement. I got a lot of exposure in IMD about how such big organizations function. I got exposed to the problems they face due to their size and how to solve them.

Name: Shail Vaidya (2017AAPS0303G)

Student Write-up

Short Summary of work done : Automation of weather stations. We had to develop a prototype that would take readings from temperature, humidity, pressure, wind and rainfall sensors every second and send the 3 minute average data to a web portal using a GSM module.

PS-I experience: It was a great experience. We got to work with expensive industry grade sensors. We were very motivated as the product has real-life application and the organization helped us a lot.

Learning Outcome : We learnt how to develop a prototype and the process of developing a product. As the sensors were manufactured by IMD, configuring them without any documentation was a challenge but we got a learn a lot.

PS-I is an exposure oriented course : Absolutely. It was the first we got to work in such a big organization. The
opportunity to work with the sensors was great. PS-1 is a very helpful course if utilized properly.

Name: Parth Krishna Sharma (2017B3A70907H)

Student Write-up

Short Summary of work done : 1. Interface a micro-controller with sensors which will be connected to all the
sensors deployed at a particular weather observatory which will collect the data from the sensors.
2. Attaching a GPRS module with the micro-controller so that data can be sent to web servers via internet.
3. Fetching the data from the web servers and storing it in a database.
4. Developing a web portal where the IMD scientists can view the data from any observatory in the nation.
5. Hosting the web portal and database online so that data can be sent to the database and viewed by IMD scientists from anywhere.

PS-I experience: Great

Learning Outcome : Web Development
Database Management
Working of IMD

PS-I is an exposure oriented course : Yes it gave us exposure about the industry and helped me know how Indian Meteorological Department works from inside.

Name: Nitin Vinayak Agrawal (2017A4PS0415P)

Student Write-up

Short Summary of work done : My project was 'Study, Design, and Development of a Wind Tunnel.' Wind tunnels are used for calibration of anemometers in IMD Pune. These anemometers are exported from Pune to all the major airports across the country. Therefore it's essential that these wind tunnels ensure the quality of anemometers manufactured. I got a chance to study on a primary working wind tunnel inside the surface instrument division in the IMD Pune station and to reconstruct a working secondary wind tunnel. A calibration report was also prepared on the secondary wind tunnel using digital and optical calibration instruments. A sample instrument was tested in the wind tunnel and found to be faulty, hence sent back to the manufacturing unit.

PS-I experience: It was a very good learning experience. A healthy exposure to industrial environment helped me understand work ethics and professionalism in Government industries.

Learning Outcome : I learnt about use of industry grade sensors including barometers, hygro-graphs, temperature sensors, tipping bucket and the way they are interfaced in an automated weather system. Optical anemometer working along with its use in weather stations and for calibration of airport grade anemometers.

PS-I is an exposure oriented course : Yes, PS-1 is an exposure oriented course because it provides a chance to work as a part of industries and startups. It provides ground for learning while working in a non simulated environment.

Name: Abhishek Chinmaya Patwardhan (2017B5AA1033G)

Student Write-up

Short Summary of work done : The India Meteorological Department (IMD) is a government organisation responsible for monitoring and forecasting of weather across the country. For this purpose, they have set up various stations (Automatic Weather Systems) at various locations across the country consisting of completely digital sensors. Some of these stations are understaffed, and therefore there is a lack of data from these stations, as the data is only recorded once or twice a day.
Our aim was to design a system that would record the data, process it to required form, and send the data throughout the day to the IMD servers without any human intervention.The prototype is built using Arduino Mega and the data was sent to the server through a SIM900A GSM Module. Overall 5 sensors are configured : Temperature and Humidity Sensor (RHT 175), Barometer (Vaisala PTB-330), Wind Vane, Anemometer and Tipping Bucket Rainfall Sensor (TBRG) . The data is received through these sensors every second, it is stored, processed and the required parameters(one minute and three minute averages) are sent to the IMD servers.

PS-I experience: Being a dual degree student, working on a electronics based project was very enlightening for me . It gave me an insight into how the core industry functions.Our Project was a very fruitful idea both for the organisation and for the team.

Learning Outcome : The project helped me understand about how various sensor based data can be collected and sent to a server, the various serial communication protocols used and how to interface the sensors with a micro-controller.

PS-I is an exposure oriented course : I agree with this statement. PS-1 offers second year undergrad students to work for organisations. This is the first time most of us do an internship. Hence various skills and work ethics are developed ensuring overall development.

Name: Saarthak Modi (2017A3PS0287G)

Student Write-up

Short Summary of work done : The India Meteorological Department (IMD) is a government organisation responsible for monitoring and forecasting of weather across the country. For this purpose, they have set up various stations (Automatic Weather Systems) at various locations across the country consisting of completely digital sensors. Some of these stations are understaffed, and therefore there is a lack of data from these stations, as the data is only recorded once or twice a day.
Our aim was to design a system that would record the data, process it to required form, and send the data throughout the day to the IMD servers without any human intervention.
The prototype was built using Arduino Mega and the data was sent to the server through a SIM900A GSM Module. Overall 5 sensors are configured : Temperature and Humidity Sensor (RHT 175), Barometer (Vaisala PTB-330), Wind Vane, Anemometer and Tipping Bucket Rainfall Sensor (TBRG) . The data is received through these sensors every second, it is stored, processed and the required parameters (one minute and three minute averages) are sent to the IMD servers.
The system will probably be deployed by IMD in one of their weather monitoring station.

PS-I experience: It was a good technical experience working on a real life application project.

Learning Outcome : Learnt about IoT applications and their deployment. Interfacing of different industry grade sensors was a unique learning curve.

PS-I is an exposure oriented course : PS-1 helps give us an insight into how the industry works and how processes are put into place. By interacting with officials in our station, we came to know about how critical their work. The course gives a learning which is beyond classroom teaching and gives crucial hands on experience that is important for any engineer. It is truly an exposure oriented course.

Name: Digvijjay Singh (2017AAPS0317H)

Student Write-up

Short Summary of work done : Our goal was to develop an IoT based system to display real time weather information on a web portal. The information/parameters to be displayed were specified by the Station. The various sensors were also provided by the institute itself. The first step was to select the microcontroller to control the flow of data. Next step was to interface the chosen microcontroller (on a development board) to all the sensors individually, including a GSM module to transmit data wirelessly. Finally, we integrated the whole system into one, and completed the project.

PS-I experience: PS-1 at IMD was a good experience. Our work was really appreciated by the organization. Working in a team with students from different campuses was also great.

Learning Outcome : We learnt a lot about Arduino Development boards, including programming them using Arduino IDE. Also learnt about various sensors used to measure weather parameters, as well as about Serial Communication Protocols.

PS-I is an exposure oriented course : Yes, PS-1 gave us an exposure to the work culture of the real world. We learnt to apply some of the concepts we had studied in courses.

PS-I station: Infibeam Avenues Ltd. , Gandhinagar

Student

Name: Harshit Shah (2017B3A70557G)

Student Write-up

Short Summary of work done : We were divided into groups of three, each group was supposed to make a chat-bot but definitions for all the 3 groups were different, each group was allotted a mentor who were software developers in the organizations. The topic allotted to my group was "A.I. chat-bot for Employee Skill Management". The purpose of this chat-bot was to help employees of the organization to manage their skill-set in organization's database. With the help of this chat-bot an employee can update their skill-set by adding a new skill to his/her skill set or can update his/her level of expertise in a skill already existing in his/her skill-set. It also provides an additional feature to the manager level employees to get a list of employees with a particular set of skills in order to make decisions on starting a new project or making new recruitment. To develop the chat-bot we were initially given resources to learn some basic software required for the projects namely Python, Django, Dialogflow, Google Actions, Webhook, PostgreSQL etc. In the process of getting familiar with the above skills we made some dummy chat-bots. After getting ourselves well equipped with the above skills we started working on the main chat-bot by making flowchart, ER diagram of database, implementing the flowchart in Dialogflow, making the database in Postgres, using webhook to provide dynamic response and the last step was user authentication.

PS-I experience: It was really a great experience working in such an esteemed organization. It gave me glimpse of how exciting a corporate life can be. The project allotted to us was very interesting as it sparked curiosity in me at each and every step, this encouraged me to explore each and every topic taught in great depth. Apart from the project the exposure which I got from this organization was great. We got to interact with software developers of the organization, got to know their present as well as past experience at this organization. So, I can conclude that it was overall a great experience working in this organization.

Learning Outcome : My PS-I experience at Infibeam Avenues was full of learning. I learnt many new software, programming language and other tools namely: Python, Django, Dialogflow, Google Actions, Webhook etc. I believe that all these technical skills will definitely help me to work on many new technical projects in future. Learning was not limited to technical skills; I got an opportunity to learn and develop soft skills which are required to work efficiently in the corporate culture. The project allotted to us was a group project, so it helped me to develop skills like team work, team spirit, leadership

etc. So, I can conclude that it was overall a great experience, full of learning technical as well as other skills.

PS-I is an exposure oriented course : Yes, I completely agree that PS-I is an exposure-oriented course. Apart from exposure it is the project allotted by the organization which makes the working experience at PS-I more effective for a student's career. Working on project in PS-I helps a student to develop confidence to take up more such projects and work effectively on that project.

PS-I station: Innoviti Payment Solutions Pvt. Ltd. , Bangalore

Student

Name: Narkedamily Bhaswath (2017A7PS0033H)

Student Write-up

Short Summary of work done : The main idea of our project was to add marketing aspect to card swiping terminal at payment counters. We stored a set of advertisement in a cloud database and mapped advertisement according to the credentials received through customer's card which is displayed at the terminal as soon as amount of transaction is entered.

PS-I experience: It was great working with people at Innoviti, they were really helpful in adopting to company's environment. It was great experience working like an employee in the company.

Learning Outcome : How to overcome failures and get success. Debugging is most important thing I learnt. I gained some flexibility to adopt to different environments.

PS-I is an exposure oriented course : Yes, it helps a lot in developing communication skills. And also it helps in adopting to corporate world. It teaches how to behave with colleagues and superiors.

PS-I station: IT Department, Government of Rajasthan , Jaipur

Student

Name: Vedant Goyal (2017A7PS0187H)

Student Write-up

Short Summary of work done : I did my project work on the topic of Mass SMS Sender. So, basically it was a python based web application and I was allotted the task to build it from scratch. This application uses an API(Application Programming Interface) which was provided by the department there. The API helps the user to send text messages to a bunch of people simultaneously.
So, I had to make a .csv source file containing a list of contacts and some columns related to receiver's name, sender's name ,date, time, and a default SMS template in case there is a need for one. That source file was included in our backend code which enabled the user to send customized messages to all the contacts listed in the source file. Those customized messages contains the name of receiver and other different fields pertaining to that particular user.
This application was then used by the organization there for the exchange of SMS within the organization related to any official work, latest news and updates , any recent technology, market demand and a lot more.

PS-I experience: My experience in PS 1 was great and definitely a learning one. It provided much of an industrial exposure which is definitely needed to experience the industry demands and to get to know your capabilites and weaknesses. It do helped a lot learn a great many things and bring a professionalism to the code and work there. It provided a working environment in which we were allotted to work with the other employees there. So, we were doing a great lot of things and learnt many minute details about everything necessary to complete our project in that professional and serious environment. It did provide a fair and decent exposure which might definitely be of help further.

Learning Outcome : I learnt many things regarding my project as well as regarding the office work and the experience gained from working under the mentors there. I learnt about web development using python, its advantages over other languages and why it is in a great demand. I learnt about the API and how it is used in extracting data and information. I also learnt about how the API communicates with the server and the process of making requests with the API to extract information and data from the server.
I learned about the helper libraries that helps the API to make a request to the server and then sends the in response to the query made by a client.
I also learned about how to bring a professionalism to the code so that it is understandable by everyone.
Also learnt about file handling in python and how to import the csv files in the backend code and to extract the fields from that.

PS-I is an exposure oriented course : PS 1 is definitely an exposure oriented course and I strongly agree to that. My reason for this is that it provides you an oppurtunity and an environment which you might not get by sitting in your homes or classes. This learning is only possible if we work in this industrial and serious kind of environment. It also provides a great deal of exposure as here you have to find your own projects and you are also given freedom to choose and complete from a range many of those.
It allows you to work freely with mentors who actually works there and hold a big position in the department. They guide you , suggest solutions, advice you and help you in finding the solutions to the problems you are facing in the area of your work.

Name: Agrim Agarwal (2017A7PS0927G)

Student Write-up

Short Summary of work done : we were assigned the work to generate dataset for training a cnn model for surveillance of cctv cameras installed in various wildlife sanctuaries and national parks of Rajasthan.

PS-I experience: My PS-1 experience was quite nice. I learnt many new things and developed a good and sound understanding of python which would be really helpful to me in my life ahead.

Learning Outcome : I learnt Python and software labelImg

PS-I is an exposure oriented course : Yes, it is an exposure oriented course to give student basic knowledge about corporate workings, corporate culture and job culture and it makes students updated with latest industry trends and workings

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Name: Harsh Rawat (2017AAPS0219G)

Student Write-up

Short Summary of work done : We were first asked to work on Data Analytics using the software Qlik sense .We had to prepare a report of the data set given to us by plotting various graphs and models so that the data can be interpreted much more easily using the software which will be presented to the managers in order to help them with the decision making.
Secondly we were then asked to prepare an interface which would help send SMS to multiple users at the same time using the API given to us by the company . The main purpose of this interface was to help the rural area people so that the relevant information can be conveyed to them via SMS since they don't have internet.
The application made in a crude way served its purpose of sending and receiving text messages to multiple contacts simultaneously. The API integrated with the backend code enabled the user to send messages to a bunch of people simultaneously.
We also explored different libraries for the server side. There were helper libraries for the API which enabled it to send messages to the people.
So now, the application as a whole is properly serving its purpose of sending the messages to people.

PS-I experience: It was an amazing experience since we got to know a lot about the government job culture and helped me create an interface which would help the needy.

Learning Outcome : I learned many different Python libraries and also got to about API's and their usage.

PS-I is an exposure oriented course : This statement is absolutely true since it gives you the required exposure to enter the corporate world with a feeling of confidence.

Name: Shrish Tripathi (2017A7PS0188H)

Student Write-up

Short Summary of work done : I first went through the prerequisite concepts(data warehousing and data marts). Then to understand their practical application, I did a case study. After that I did multidimensional analysis in MS Excel. Then I learnt a data visualization software, Tableau. I made three dashboards in it. First using the SGST ITC data, second using the NHAI toll data and third one for the India Post. After that we suggested a statistical predictive model to a multinational food corporation. And finally I went through some machine learning algorithms.

PS-I experience: The overall experience was quite good. The mentors were very helpful and patient in guiding us whenever we needed. We were allotted a project that has a practical application, which increased our technical skill set.

Learning Outcome : I understood and became well versed with the end to end project life-cycle of Fraud Analytics Framework.

PS-I is an exposure oriented course : Yes, I agree with this point to an extent. During the schooling and even during the initial years at college, one thing that is missing is the exposure to the work environment at organisations. This course bridges that gap and helps us to gain experience that benefits in the long run.

PS-I station: Khyateh Consulting Pvt Ltd , Bangalore

Student

Name: Anushka Dayal (2017B1A70902P)

Student Write-up

Short Summary of work done : We delved into deep learning and its applications in the field of Biology. We built a neural network model (ResNet34) trained over a dataset of Chest X Ray images to classify them into two categories, either from a NORMAL or a PNEUMONIA infested person. We used modules and libraries imported from the fastai course and achieved an accuracy of 93.75%.

PS-I experience: My PS1 experience was satisfactory, overall. I believe it gave me a good exposure of what it means to be working in the corporate world and of how to meet deadlines while balancing other aspects of your life and maintaining professional decorum.

Learning Outcome : It opened the vast field of Artificial Intelligence and Deep learning for me, and I move ahead, intruiged by the opportunities this knowledge opens up for me.

PS-I is an exposure oriented course : I think this statement is justified, is my personal opinion.

Name: Satyam Mani (2017A7PS0277H)

Student Write-up

Short Summary of work done : Build a model to test and predict whether a x-ray image is of a pneumonic person or a normal person

PS-I experience: The experience here is nice. We got exposure of how corporate world works at an early stage. The learning experience was fruitful

Learning Outcome : Academically i learnt about algorithms related to machine learning and artificial intelligence and also on how to adapt to corporate world and act professionally

PS-I is an exposure oriented course : The exposure to the corporate world and interaction with people working in the company and mangers helps a lot on how things should be done. How you follow the principles of punctuality and other things.

Name: Lakshya Agarwal (2017B4A70630P)

Student Write-up

Short Summary of work done : Deploying private business network using Hyperledger Fabric and composer.

PS-I experience: Ps-1 started with the orientation led by our PS instructors and company head. We were divided into groups and assigned a project.
Mine was blockchain. First 3 weeks we spend learning about blockchain and the language which it uses and then started the project and finished it along with some Quiz and reports.

Learning Outcome : Learn and implent things, search for the solution on the net or ask your senior and debug things.

PS-I is an exposure oriented course : Of course it gave the industrial exposure and made us see how the work is been done in the IT companies.

PS-I station: Kizora Software Pvt. Ltd. , Nagpur

Student

Name: Nirav Bhandari (2017A3PS0309P)

Student Write-up

Short Summary of work done : The main objective of our project was to understand and design dynamic scheduling for powered equipment using IoT technologies and to create an algorithm which will take into consideration the operating parameters, outdoor weather conditions, occupancy density of the place where the device has been installed and will set the optimum operating setpoint temperature, which will take into effect the comfort as well as the efficiency of the user.

PS-I experience: It was an extremely enriching experience. We got to learn a lot from our mentors at the station and there was always a healthy work environment. We not only learned about the technical stuff but also the gained an amazing exposure about corporate life and how are things done in an office space.

Learning Outcome : We learned about algorithm creation, error checking, HTML, CSS, and Javascript which helped us to create a web portal to demonstrate the work that we had done.

PS-I is an exposure oriented course : PS-I is definitely an exposure oriented course. We learn a lot during the course of these 2 months. We gained technical knowledge, got to know a lot about the corporate world and last but not the least made friends for life. We gained a lot of practical knowledge too, and these 2 months provided me with an experience of a life time.

Name: Harshal A. Dangre (2017A3PS0479H)

Student Write-up

Short Summary of work done : In the beginning of our PS1, we started with web development for which we learnt HTML, Javascript and CSS. In it, we also worked on the concept of ajax and json. Then we were taught how to send a request and get response from another server using REST APIs. Then we studied about structured and unstructured databases. We created our own database in our systems and learnt how to maintain them and also to store the data from any server, which has been hosted on the server. For database management, we had used MongoDB. After that, we created our hubs or servers and were able to successfully transfer data end to end. Then after

all these basics of server, webpage and database management we worked on invoice data extraction and processing. Our work was to extract required information from the bills/invoices, process them and store them in the form of key-value pairs. For that, we had to learn python (some of us had to study R programming) and its various libraries and modules.After completing this(it was the main part), we created(customized) our own chat bot. Towards the end, we integrated all these things and created our web application which had a user-friendly UI and a chat bot to interact with the user. To make some basic changes in the UI, we had to work using bootstrap in CSS. The web application we created was then deployed to the AWS (Amazon Web Services).

PS-I experience: My experience during my PS was very good and I learnt many things. Not only the technical part like coding, but I also learned how to work and collaborate in a team. PS at Kizora Software Pvt. Ltd. provided me a lot of exposure to work done in the corporate sector. Thus, my experience was amazing.

Learning Outcome : 1. Teamwork: I realized the importance of team work as well as how do we need to consider others too while working in a team. Working in team also increases our overall knowledge base and we can also learn new things from our members.
2. Crisis Management: Working hard is a good thing. But at the same time, we need to ensure if we are working smartly or not, especially in times of crisis.
3. Even though the work given to us in our PS station was not related to my branch, but still it enhanced my interests for that subject.

PS-I is an exposure oriented course : I agree to the statement that PS-1 is an exposure oriented course. It exposes students to the professional world and introduces them with the work done in the corporate sector.

Name: Eashan Chopde (2017A3PS1161P)

Student Write-up

Short Summary of work done : Creation of dynamic schedule for HVAC operation, while keeping in mind comfort and energy requirements. We were tasked with the study of energy consumption by large ventilation systems, and were asked to figure ways of minimising this consumption while maintaining proper ventilation and indoor comfort levels.

PS-I experience: I was exposed to an engaging working environment, with different people working in diverse IT fields, we were able to integrate different aspects of the company projects into our own, providing exposure to ML, Image processing, and gave us an overall approach to figuring out various solutions to different problems.

Learning Outcome : Data Analysis

PS-I is an exposure oriented course : We were exposed to different aspects of an IT company enabling us to develop an overall problem solving approach. This has helped immensely.

Name: Avanti Sontakke (2017B4AB0613P)

Student Write-up

Short Summary of work done : As a team we worked on data extraction from strings using machine learning. It was part of a bigger project which was a bot with the ability to take image inputs and store information from bills, invoices, etc. in a database. Had to learn and work with Python and its many libraries, databases, create user interfaces, etc.

PS-I experience: It was a unique experience where we had to learn the skills required for the work on the spot and directly implement what we were learning. Working as a team on a project which is actually marketable and useful for the company was a first time and rewarding experience. I also had to work on my communication and interpersonal skills which is a must in today's corporate world.

Learning Outcome : All presentations, seminars, etc. gave a unique opportunity to improve my people skills and develop my confidence. With the help of my fellow interns and also the mentors from the organization I not only learnt valuable skills in programming and machine learning but also got a chance to actually implement them and see what impact my work has.

PS-I is an exposure oriented course : I completely agree with this statement. I was shown many aspects of corporate life and got the opportunity to work in a team for a

project. The team had people who were unfamiliar with the work given and people who had some experience, but both had equal opportunities to learn and explore. The mentors were very enthusiastic and encouraging. This experience was the perfect start someone can get to corporate life wile still being a student.

Name: Keshav Bhai Pandya (2017A3PS0399H)

Student Write-up

Short Summary of work done : Our work was related to the extraction of key-value pairs from the receipt which we have received through image processing. We had to apply regular expressions for this purpose and display on the user interface which we created using HTML, CSS and javascript. However as we had servers for database, log hub and image processing hub, we had send the data between them using AJAX calls in JSON format.

PS-I experience: Th experience here was really great. We got to learn a lot of new things some of which we have even never heard of before. CEO and the staff of the company were also approachable and friendly to us for any kind of help. Nagpur was a new city for me but the CEO of the company made all the arrangements at a minimal cost. Working environment was also good and we have been given the flexibility to work on things which we like.

Learning Outcome : We got to learn several new technologies which were unknown to us before along with the usage of several new software. Another good thing is that we got to experience how do we collaborate and work in group.

PS-I is an exposure oriented course : According to me the statement is justified in our case. We were able to experience the working environment ,new technologies emerging in the market and how the company do it's business. Overall we got to learn a lot from our PS-1.

PS-I station: Liveweaver India Pvt.Ltd , Pune

Student

Name: Rahul Jha (2017A7PS0036P)

Student Write-up

Short Summary of work done : We began with Hashing Algorithm Md5. This was followed by Face Recognition using OpenCV and DLib . We also incorporated Eye Blink detection to make it foolproof. Finally, we learnt docker containers for toolchain.

PS-I experience: It was a great experience.

Learning Outcome : We learnt the basics of ML, Hashing and Toolchain.

PS-I is an exposure oriented course : This is a really apt statement to describe the course. I had experienced such an environment for the first time and I am sure it would help out in the future.

Name: Rahul Patel (2017A7PS1306H)

Student Write-up

Short Summary of work done : I was in the Android team. We had to make an app that acts as a router between your phones and other devices. Phone would also be able to receive notifications about the activities of the device connected. The main objectives of the project were :-
1) Intercept, make, receive and record phone calls.
2) Connect to other phone or device through BLE(Bluetooth low energy) and Wifi Direct within the app itself.
3) Access the camera from within the app and get the depth information from the image.

PS-I experience: My PS-1 experience was pretty good. I got a chance to work in the field which we are studying in our college. I got to learn new software and languages, used in the industry. I also learnt working in a team and compiling our work in the end. Mentors here were willing to help whenever needed. I also learnt the importance of completing the task before the deadline given by the company. I learnt application of academic learnings in the corporate world. Overall it was a great experience working at Liveweaver.

Learning Outcome : I got to learn new software called Android Studio which was used by us to make the app. I was learnt new language called Kotlin. Got to know how we code and how industry wants us to code, the importance of commenting our code, working in team and integrating our individual projects in the end.

PS-I is an exposure oriented course : Yes indeed, PS-1 is an exposure oriented course. I got a chance to apply my academic learnings of OOP and Java here to make an Android app. I got to know how corporate world works and how it is different from our college life.

Name: Kaustuv Banerjee (2017A7PS0124P)

Student Write-up

Short Summary of work done : Our work involved implementing various tasks on micro-controllers like SAME70 Nordic, Arduino etc. Ilearnt about various communication protocols used by small scale embedded systems like SPI, UART, USART e.tc.The work helped me understand and implement concepts of operating systems like job scheduling. I also explored Digital Signal Processing through Analog to Digital converter(ADC) which we interfaced to our micro-controllers. I also learnt about some algorithms used for signal processing like the Fast Fourier Transform and it's most optimal implementation. I also learnt about the Bluetooth protocol and interfaced our micro controller to a Bluetooth module to receive and transmit data in a wireless manner.

PS-I experience: The PS-1 experience was an eye-opener for me. We got exposure to a corporate environment. I learnt the dynamics of working with a team and collaborating on tasks. The PS-1 experience enriched my interpersonal skills as well as my

communication proficiency both written and verbal. The work culture was great and I got to interact with people from different hierarchies from the organization. I learnt about real-life problems and crisis that exist in the industry and gained knowledge beyond books.

Learning Outcome : The most important thing I learned working in the industry is that I have only explored the tip of the ice-berg through courses. Real world problems are challenging, intriguing an require us to consider every minuscule detail. The solutions are not available at the back of the textbook but we need to explore the internet, use previous experience and use trial and error to reach to a particular solution.

PS-I is an exposure oriented course : I strongly agree with the above statement. Corporate decorum, formal communication and presentation skills are some invaluable experience I gained from the practice school apart from technical expertise. I feel that knowledge can be gained anywhere if we have the will to learn but working together as a team and presenting your work while balancing both work and personal life are some essential life skills that cannot be acquired in the college library for which I am thankful to BITS and Practice School Division.

Name: Rahul Poddar (2017B3A70746P)

Student Write-up

Short Summary of work done : Learnt about different communication protocols such as UART, I2C and SPI. Programmed various micro controllers such as Cortex M7 and M4 to perform various tasks. These tasks included blinking LED, Bluetooth interface, ADC, FreeRTOS, FFT and more.

PS-I experience: I am satisified with the work given to us at this PS. Although therre was no specific project to work on, the numerous small tasks helped us explore various topics related to hardware. Meeting students from various campuses and disciplines taught us to work as a team. The overall experience gave us an insight into the corporate world.

Learning Outcome : Learning how to write codes for microporcessors, how to work with and interface various devices with it, the different devices used for the design of

embedded systems designed by the industry. Also learnt to use embedded toolchain on Ubuntu using VirtualBox. Also learnt how to work in a team and meeting deadlines

PS-I is an exposure oriented course : Through PS-1, I got exposed to the competitive industry of electronics and gadgets in the world. It gave us an insight into the corporate world.

Name: Ishita Neeraj Nigam (2017AAPS0992G)

Student Write-up

Short Summary of work done : Our project was on embedded systems. We performed various tasks on microcontroller boards such as Blue Pill, Atmel SAME70 XPLD, and Nordic nRF52DK. We worked with FreeRTOS and BLE(Bluetooth Low Energy). We also configured ADC(Analog to Digital Converter), and Bluetooth HC-05 module with the microcontroller boards.

PS-I experience: It was an enriching experience which showed us what kind of microcontroller boards and other equipments are used in the industry. It also helped us understand the importance of deadlines and the working of a company. Our project mentor and manager were extremely helpful and provided us with invaluable guidance, and solved all our doubts. Our PS instructor, with his regular assessments, helped us in understanding how much has been accomplished and how much there is to accomplish. Hence the experience in PS-1 was a fulfilling one.

Learning Outcome : We learnt about communication protocols commonly used in embedded systems today like UART and I2C. We also learnt about various microcontrollers which are used in the industry today like Blue Pill, Atmel SAME70 XPLD, and Nordic nRF52DK. We learnt about embedded C and programmed our microcontrollers using embedded C codes written on different IDEs such as Arduino, Atmel Studio 7 and Mbed Studio. We also learnt about RTOS which are operating systems used in embedded systems. We also learnt about other chips and modules like ADC, Bluetooth Modules and relays which can be configured with the microcontroller to perform required tasks. We also learnt about BLE, Bluetooth Low Energy, the latest version of Bluetooth.

PS-I is an exposure oriented course : Since we were mainly given tasks on different microcontrollers and not a concrete project, I believe the objective of PS-1 was not to give us a project. It was instead to give us an exposure as to how things work in the corporate world. It helped us understand about teamwork and maintaining deadlines, which is necessary while doing a job. Hence, we were able to gain exposure to the industry, something which is essential when we sit for placements and when we do a job.

Name: Bhavya Gera (2017B3A70783P)

Student Write-up

Short Summary of work done : Face recognition and eye blinking detection for security of iot pairable devices. Opencv and dlib were used to provide the methods of template matching and cascade classifiers. Python and C++ codes were created.

PS-I experience: It was a learning experience for me to work in an IT company. It showed me the importance of teamwork and punctuality. Also using virtual machine and opencv was new for me. I really enjoyed the experience.

Learning Outcome : I learned face recognition, eye blinking outline, counting eye blinking using eye aspect ratio. Recognizing face from photo and Webcam. I used github and gitlab, dlib, opencv and svm algorithm to build our project. Also I learnt docker and md5 algorithm for hashing using bash script.

PS-I is an exposure oriented course : Yes it is an exposure oriented course and useful to connect theoretical knowledge to practical knowledge. Also it helps in knowing what industry needs and how to go about doing a project like professionals.

PS-I station: MapMyIndia , New delhi

Student

Name: Saurav Gupta (2017A7PS0177H)

Student Write-up

Short Summary of work done : *Data Mining or pre ML work : Sharp turn detection : Safety Domain.*
Input : Road-IDs in any selected region of map (we selected it using Arcmap).
Given : Road Data + GPS (Vehicle) Data on those roads.
Data is provided in tables (postgreSQL tables), and of course data is Geo-spatial in nature.
Output : Sections of roads which are most probably Sharp turns.
Software : pgAdmin3(for database, pgsql queries), ArcMap(for visualization of roads and GPS probes using their respective Geo-spatial tables), PyCharm(for our segments of model written and implemented in Python).
Procedure Summary : Filtered out the suspected data -> outlier removal(GPS speed + heading) -> regression analysis on Speed and heading -> custom algorithm developed for specially sharp turn detection -> adjusted on various thresholds to get proper/better results -> Voila! Satisfactory results.
Extras : Documentation +presentation for PS mentors (other than what submitted in Midsem and Compres here).
Suggestions : Keep in contact with mentors and ask everything required without hesitation and Again and Again. Mentors are really friendly but we are responsible for our project.

PS-I experience: * New
* Industry exposure (of course).
* An IT company - its major part is not just IT work. It is a company with organizational structure and all domains (HR, Finance, Marketing, etc).
* Ours and everybody's project is as open ended as it could be - initial week or maybe weeks are over, in analyzing the problem statement and in making a vague project flow/outline, because these are not provided to us in most situations. Reason is to bring out innovation and not influence our thinking. Putting new mind to it.
* In starting we faced lot of hurdles as we were dependent on our mentors and as they are very busy, days went by. key is to discuss with other people as well in the company, sitting nearby, they really helped a lot in our project.
* We also met with HR department, they were supportive as well.
* Students who are pursing economics were introduced to CFO, MMI and he was really supportive. So, students with various fields of interest can get exposure here in the real industry.
* We had a great experience though project was not up to the expectation

Learning Outcome : How to settle in a work-professional environment and coordinate with various people of different domains.
Technical skills required for modelling.
How to deal with huge amount of real data which is complex and full of errors.

PS-I is an exposure oriented course : Definitely, no doubt in that. Though we didn't get project as technical as our expectation, interaction with as many people is the key of a successful PS.

Name: Sargun Singh (2017A7PS0104P)

Student Write-up

Short Summary of work done : I got a project on data analysis namely Road Elevation Profiling we were provided with gps and road data of a region and needed to find the elevation profile of all roads in that area. The project mostly involved use of databases (in PostGreSql) and python.

PS-I experience: It was a good learning experience to know how work is done in an organization from the inside what kind of work is being carried out in the organization. The facilities provided were fairly good .

Learning Outcome : I learnt python and PostGreSql while doing the project.

PS-I is an exposure oriented course : PS-1 is really an exposure oriented course we get to work in an organization and get to know what is expected of us once we get a job. It also helps gain valuable experience on the industry side.

Name: Ayush Garg (2017A7PS0193P)

Student Write-up

Short Summary of work done : The project on which I worked was to improve the efficiency of the autosuggest api used by MapmyIndia. Initially I was asked to study about the various libraries and softwares used in the field of NLP . Next up was the task to study about the working of offline maps and how are they implemented in real world. We (I along with my colleague) gave a brief sketch about how it can be implemented in the MOVE application of MapmyIndia. Furthermore, we built a basic recommendation engine based on user-user collaborative filtering

PS-I experience: I am very happy the way in which my time at this station went. It was really a nice experience to get a feel of the corporate world. Our project mentor was very helpful and guided us through the various parts of our project.

Learning Outcome : This was a very good opportunity to familiarise myself with the basics of AI and ML and do some live projects on it.

PS-I is an exposure oriented course : I totally agree with this view as it provides the student with the working environment in the corporate world. It also provides an opportunity to students to know how the work is done in companies. Overall, I would say that it provides a good exposure to students.

PS-I station: Oil and Natural Gas Corporation Ltd , New delhi

Student

Name: Kartik Wardhan (2017A3PS0301P)

Student Write-up

Short Summary of work done : For PS 1, I worked with the networking department at ONGC Delhi. My project was related to office networking and Integrated Building Management System. We had daily one to two hour sessions with professionals from the networking department. We started with basics of networking like networking

devices, topologies, protocols, and the OSI model. They were covering the topics as per CCNA course. I would like to add that our project was more study oriented and there was less ‘hands-on’ work. Once we were accustomed with the basics, we started working with Cisco Packet Tracer, a freeware used for simulating networks. We learnt how to configure a router, assign static or dynamic IPs, use RIP and make VLANs. We were given tasks to make networks meeting the required specifications by our mentor. Then we switched to IBMS. We studied various components of IBMS like Parking system, CCTV surveillance, HVAC system, PA system etc. There wasn’t any work to do there. But there were a few visits to the respective system servers. Next, we were introduced with VOIP phones and how they are configured on a network. We had few visits to the data center. We also had one session each for VSAT and SCADA systems by professionals from Scope Minar, ONGC Data Center. Since I am a EEE student, I also got a chance to visit the Gas generator system used by ONGC for in-house power generation. All in all, I learnt a lot of new things at ONGC.

PS-I experience: Let’s discuss the good things first. Everyone was really helpful. The networking team was eager to clear our doubts and I learnt a lot of new things from them. Our mentor was not very strict about the project. Despite our project being networking related, he allowed us to visit the power generation system and also assigned an electrical engineer to supervise us. And we did that along with our main project. The majority of our work was done on Cisco Packet Tracer, a simulator. Though we had a lot of visits to the server rooms and got to see the networking devices in live environment. Apart from that, another thing that wasn’t as good was that some new interns arrived a week later than us but were assigned to the same batch as ours. As a result few topics, that we had already done, had to be covered again. Apart from these minor issues, I will have to say that I had a really good time at ONGC and this was a great learning opportunity for me.

Learning Outcome : I learnt the basics of Networking. I also got to know how a network is designed on a huge scale for ONGC like organisations. I also learnt how they manage all critical systems in such a large building. I learnt how, by combining all these systems, some oil assets in Assam can be monitored by a person sitting in Delhi.

PS-I is an exposure oriented course : I very much agree with this statement. After covering the theoretical aspects of any field, be it networking or IBMS, I got to see how those systems were actually implemented. Visits to the server room and discussions with professionals were an integral part of my PS1. So, I got to know how the industry actually implements the systems we study about in our books.

PS-I station: PASFEX Technologies Pvt. Ltd. , Bangalore

Student

Name: SHRIYA CHOUDHARY (2017AAPS0409H)

Student Write-up

Short Summary of work done : My PS-1 assignment is to make a detailed handout of the python language. The document is supposed to be a step by step guide to learning the python language. It must cover the basic structure of python explained in detail with the help of examples. The purpose of the document is to act as a course guide to teach python. Also, I have to do 3 mini projects in the python language on web development. I have to make a ppt for each of the projects, explaining all the steps to achieve the desired outcome of the projects. Additionally, videos have to be made to demonstrate the execution of each project.

PS-I experience: During PS-1, I got an assignment in the area I wanted to work in. But, my assignment was very basic. The assignment was more inclined towards teaching.

Learning Outcome : I learned basic python language. Also, I learned Web Development with python.

PS-I is an exposure oriented course : Yes, I agree. In PS-1 you get to interact with people who are currently working in the same field as you would want to work in the future. You get to learn from them and also you get to experience the working life.

Name: Surabhi Toshniwal (2017AAPS0438H)

Student Write-up

Short Summary of work done : Prepared a self explanatory course on python as per the demand of the company.Started with making a handout and documenting basics of python,capturing videos of execution of the output and practice questions in jupyter

notebook.Followed by making presentations explaining projects taken up and capturing video of the execution.

PS-I experience: Work allotted was to prepare a self explanatory course on python as a language and a base for machine learning.Started with learning python from scratch and took up some projects in the same which have a real-time application.Tried to learn about some of the useful modules which are in built in python.

Learning Outcome : Firstly learned a new coding language .Python being the base for Ml ,is very beneficial to pursue career in Data science.Taking up projects in python which have real-time application gave a better understanding and usage of the language.
Preparing lectures and presentation gave experience of official work in terms of interacting with peers,mentor and building self confidence in presenting work efficiently.

PS-I is an exposure oriented course : I agree with the statement made.Apart from learning subject it also gave an exposure to deal with peers ,interact with mentors and other real time problems that we come across when we work for a company.

PS-I station: Pass Consulting , Hyderabad

Student

Name: Abhishree Jain (2017A7PS0203H)

Student Write-up

Short Summary of work done : Worked with neural networks and GAN to help automate the SCADA system in a way that produces the most optimal solution to any water distribution system with the capability to handle any kind of disruption. Due to the certain data available problems only took into consideration certain factors to make the function through data mining algorithms.

PS-I experience: Professional work with a five day working from 10 to 5 and help from our mentor who was from bits and already interning in the company was very helpful. Overall the project was very vast so the entire project could not be completed but learnt about new topics which can be useful in the future.

Learning Outcome : Completed certain courses in machine learning and data mining which helped in the project. Learnt to write python code on jupyter notebook and using libraries like panda, numpy, tensorflow and keras. Even learned how to directly manipulate data in excel

PS-I is an exposure oriented course : True, the work was more about learning new concepts rather then applying the skills already known. Once you are aware of how the industry works, it makes you aware of what you should and should not be doing in a professional work environment and how to go about when given a project.

Name: RITIK NAWAL (2017B4A70886G)

Student Write-up

Short Summary of work done : Our project was Optimization and Automation of scada system across different water supply schemes.In the project we had to develop a machine learning model to control the flow of water across tanks by automating valve operation in Padmanabham scheme(a village in rural AP).The work was divided into 3 parts:Data preprocessing, Generative model for data and Data mining.Two of my PS batch mates handled processing raw data provided on 22 tanks (consisting of flow rate,valve status,tank level ,daily quota etc) and provided it to others.Another group started with neural networks and data mining in order to find patterns in data and build an ML model for automation of valves.I was a part of Generative model team where we first looked upon features from data to get relation between them in order to generate data from existing data.We took tank level and flow rate and found out the correlation coefficients for these for all the 22 tanks for 6 month data provided.I also tried curve fitting to find functions that could relate the features.Then we moved on to a recent approach towards data generation i.e. Generative adversarial networks(GAN).For this we created neural net models.The input was given as flow_rates across the tanks and output was the valve status(governed by 0 for 'off' and 1 for 'on').Then we trained both the neural networks to generate data with significant accuracy.We also worked on for methods to increase accuracy on testing dataset.The aim of using GAN was to create all possible valve combinations (other than present in raw data) to better analyze and

work on the problem (to pass the incoming water from main tank to all the 22 tanks so that all the tanks receive sufficient water to meet their daily quota).

PS-I experience: The experience was good.I learnt about working culture in IT company and also was able to apply whatever I have learned in BITS .

Learning Outcome : Learnt basics of Machine learning.This included Neural Networks and some part of Deep learning.Other than this, I learnt some Python packages : Tensorflow, Matplotlib, Pandas and Numpy.

PS-I is an exposure oriented course : It is true to some extent.It depends also on the interests and willingness to work for a project.

Name: Avinash Narasimhan (2017A7PS0142H)

Student Write-up

Short Summary of work done : The main objective of our project was to come up with a model that will help automate the Water SCADA(Supervisory Control and Data Acquisition) system so that it helps easy handling of any water distribution system. However the main focus was to find the best possible combination of valves of the tanks(1 for open and 0 for closed) such that it optimizes the water flow across all the tanks making sure all the tanks reach their quota for the day. Our first approach was to use data mining algorithms to find patterns in the data provided to us to come up with a model. But, we faced a lot of computational problems due to which we shifted to another approach involving neural networks. Our objective was to build a neural network which will take in the flow rates of the tanks as an input and give the combination of valves as the output. For this, we had to learn Python language, an extensive ML course, basics of Pandas(a library in Python) and TensorFlow(a library in Python). For building the neural net, we had to first decide how many layers we are going to use, how many neurons in each layer. We used 1 hidden layer with 1024 neurons. We also decided the optimizer and the loss function which plays an important role in deciding the accuracy of our model. Using the basic concepts of the ML course, we were able to build a basic neural network which takes flow rates as input and gives valve combinations as output.

PS-I experience: It was a very good learning experience. I got a very good exposure to Machine Learning and the various softwares associated with it. The work environment was very good and I was able to gel very well with my team. Overall, it was an extremely amazing experience and I got a glimpse of how corporate life works.

Learning Outcome : I learnt Python language, Jupyter Notebook software and basics of Pandas and TensorFlow. I also learnt the basics of Machine Learning.

PS-I is an exposure oriented course : I strongly agree with this statement. I got a heavy exposure to Machine Learning and its real-life applications. I was able to build a neural network and was able to link it with water distribution systems. Therefore, PS-1 was definitely an exposure oriented course.

Name: BANDEWAR ANJALI SUDHAKAR (2017B4A30639P)

Student Write-up

Short Summary of work done : Our aim was to optimize and automate the working of the SCADA(Supervisory Control and Data Acquisition) system which is nothing but programming the water distribution system. Basically we needed to find different valve combination such that it gives maximum water flow output. In this project my first part was to check whether there is any relationship between the two important variables (flowrate i.e. average speed of water and tank level) of the system. For that I used linear regression method. I found out correlation coefficients for the two variables using excel sheet and also plotted the graph using matplotlib library in python. But no concrete result was obtained from this hence we decided to use GAN (Generative Adversarial Network) which is used to generate new data from the raw data. So other work for me was to write a code for the neural networks using GAN. It was necessary to find new data in order to know how different valve combinations work whose results we didn't have in the raw data. I also had to understand which functions to use for the code which give best result in minimum time we found out accuracy for different combinations of loss functions, activation functions, number of hidden layers and neurons in the neural network. Then we used the best functions for that for the neural networks.

PS-I experience: It was really a good experience which allowed me to learn something new not only in terms of academics but also living in PG in a different city. I was able to improve my soft skills through this experience. I made new friends, explored new dimension of work. Also was able to understand a bit about the office life.

Learning Outcome : I learnt the basics of machine learning, python language. Also learnt how to use excel sheet efficiently. I learnt about GAN (Generative Adversarial Network) and how to write a code for it. Soft skills were also a part of learning.

PS-I is an exposure oriented course : I think PS-I actually gives exposure to new kind of work since in the company we are acquainted with so many different ways to do a work. It also teaches you work ethics. You can make new friends in the entire duration of PS-I. We get chance to work in a new city. We are open to various opportunities in the company to talk work in different ways hence I believe that PS-I is actually exposure oriented.

PS-I station: Sen Sei Technologies , Bangalore

Student

Name: Shah Dhruv Dharmendra (2017A7PS0138H)

Student Write-up

Short Summary of work done : Project Title: Modularization of a Monolithic Web Application using Microservices Architecture and Deploying it to AWS Cloud Servers.
A Monolithic application using JHipster was generated, most of which was completed by the organisation beforehand. This application was then modularized and partitioned into components using Microservices Architecture. Each of the component was then deployed on a separate AWS Lambda on AWS Cloud Servers. Basically we had to transition the project running on local servers to an application running on Cloud Servers.
A method was developed to prevent Cold Starts for the customers.
A method was also developed to deploy individual Lambdas which proved to be useful in debugging and would also reduce the downtime of the server whenever any future modifications are to be made on individual Lambdas.

PS-I experience: PS-I experience had a positive impact overall. Apart from from having an industry experience we also had the opportunity to interact with a Head of Engineering and learning traits like project management and debugging.
It was a good experience altogether.

Learning Outcome : Apart from gaining industry experience, we also had a hands-on-experience of project management and people skills. We gained a lot in terms of technical skills like Web Development and Cloud Computing.

PS-I is an exposure oriented course : I completely agree with the above statement. Gaining in terms of industry experience, project management along with the technical skills would prove to be useful in future.

Name: Sujay C Sharma (2017A7PS0012G)

Student Write-up

Short Summary of work done : Project Title: Modularisation of a Monolithic web application using Microservices Architecture and deploying it to AWS cloud servers.
The project can be classified into five separate tasks.
1. Generation of a Monolithic web application using JHipster. JHipster is an open source web application generator which uses Java Spring Framework on the Server side and AngularJS on the Client side. This was mostly done by the organisation beforehand.
2. Modularisation of the application into 12 modules based on their functionality using Eclipse IDE and the Maven build automation tool.
3. Testing of the functionality of the application locally and debugging.
4. Deployment of the modularised application to AWS Cloud Servers. The project required us to use AWS S3, AWS Lambda, Amazon API Gateway and Amazon Aurora among the services provided by Amazon.
5. Post deployment modifications to make the application more efficient such as Individual Lambda Deployment and Prevention of Cold Starts of the application.

PS-I experience: PS-I was an overall positive experience. I learnt a lot of new things which were not part of any course so far. It was great to see the problem solving skills of an experienced Head of Engineering, Mr KrishnaKumar firsthand. Apart from friendly interactions with employees of the organisation, I also got the chance to make some new friends and have a lot of fun.

Learning Outcome : Apart from getting industrial exposure and learning how to communicate in a professional environment, I was able to learn technical skills related to the domains of Web Development and Cloud Computing.

PS-I is an exposure oriented course : PS-I gives students the first taste of working in the industry and one of the primary things a student learns in PS-I is how an organization functions and how people interact with each other in an organization along with technical aspects. Therefore, I agree with this statement.

PS-I station: Smartlink Holdings Ltd , Goa

Student

Name: Pragya Sinha (2017B1A31749H)

Student Write-up

Short Summary of work done : Web application development - Billing Management System

PS-I experience: I got accustomed to the corporate environment and received helpful inputs and guidance from our mentors in the company along with our PS faculty, and also learned about the important skill sets one needs to possess at the corporate level.

Learning Outcome : I learned new languages (HTML, JS, ECMASCRIPT6, Angular) and also learned about the working of a company and how a company in the IT sector functions

PS-I is an exposure oriented course : I agree with this statement. This course has helped me realise the skills and knowledge I require to be successful in the corporate environment, we not only learn in this course but also contributed to the company.

PS-I station: Tamil Nadu eGovernance Agency , Chennai

Student

Name: Praveen Ravirathinam (2017A7PS1174P)

Student Write-up

Short Summary of work done : My project during the PS was to build and implement a model for Automatic License Plate Recognition for Chennai Traffic Police. For achieving this I used methods and ideas from the open source program OpenALPR. the problem with OpenALPR is that its accuracy in India is very low and there is no feature for multiline plate detection. this is a major problem as at least 50% of plates in India are multiline. So in the first half of my PS i focused on improving the accuracy of single line detection. I brought it up to 90% accuracy on single line plates. In the next half of my PS I focused on building the whole structure for multiline. For this I collected and cropped 1200 images of multiline plates. I then used these images to train the detector. I then created a new configuration file for multiline plates. I then combined all the files and tested the model. My multiline detector worked with a 95% accuracy and gave a completely correct answer in 80% of cases. By the end of my PS I had created a fully functional license plate detector capable of detecting both single line and multiline plates of India, a feature not present in any open source program at the time.

PS-I experience: I enjoyed my experience here at Tamil Nadu e-Goverance. My mentor was really good and helpful. We read many articles and came up with ideas. My project was also very nice and i learnt a lot about machine learning and neural networks

Learning Outcome : I learnt a lot about machine learning and deep learning. my knowledge of python also improved

PS-I is an exposure oriented course : Yes, the exposure you get is very important and helpful

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Name: Sai Krishna Neeraj B (2017B4A80784P)

Student Write-up

Short Summary of work done : Firstly, we were shown the workings of the various departments of the health branch of the station under which we worked. After receiving sufficient exposure and understanding of the system, we were allowed to formulate a problem statement to work on. We decided to work on a voice based application which would provide ease of access to services offered by a government hospital. Our team of twelve was further split into 3 groups, each working on different parts of the project. Our group worked on the voice recognition, text to speech output, and integration with the cloud function. We learnt about platforms like Dialogflow and also worked on some basics in coding.

PS-I experience: PS-1 was a delightful experience as it provided a change in environment and exposed us to the industry. It provided a chance to look into the organised way in which the government systems work and how the work in academics differs from the work in an organisation. It also highlights the importance of independence, accountability and regularity.

Learning Outcome : Towards the end of the course, we had come to learn about various voice recognition platforms, basics of how Natural Language Processing works, some platforms which can be used to make a chat-bot and also some basics techniques and skills of coding. We also honed our presentation skills, and learned to present data efficiently and accurately.

PS-I is an exposure oriented course : PS-1 is an exposure oriented course, where emphasis is placed on attendance and observation rather than producing high quality products.The objective of the course is for students to get a hands on experience of how an organization in an industry works, to be able to work in an office as part of a team, to learn to coordinate and produce something within a stipulated time.

Name: Hariharan (2017A7PS0134P)

Student Write-up

Short Summary of work done : I requested that a project in the machine/deep learning field be assigned to me. I was given the task of pest identification in maize crops. The objective was - given an image of a plant, determine if the plant is healthy or there exists a pest infestation and highlight the area of infestation. The task was completed using an implementation of the "Faster-RCNN" object detection algorithm. Other work done included Python and Bash scripting to run similar processes on a group of files and to interconvert JSON files to CSV or the other way around.

PS-I experience: PS-1 at TNeGA helped me understand the impact that technology has, especially when used by the government, on a large group of people, and about how important it is to make tools that are reliable. It also helped me understand professionalism and implementation in the workplace a little better. Overall, it was a satisfactory experience.

Learning Outcome : Through this project, I have learned how to implement deep learning models and learned better techniques to make scripts with Python and Bash. It has also helped me understand what working in a team is like and how team dynamics work. This was important as I had only worked on projects that involved a maximum of three people. The final learning was about the experience of showing up at work in the morning, doing work till leaving in the evening. It was an important contrast to the life at college.

PS-I is an exposure oriented course : As mentioned earlier, PS-1 helped me understand the importance that technology plays from a governmental perspective. And additional exposure about the workplace environment.

Name: Shouvik Sarkar (2017A7PS0194H)

Student Write-up

Short Summary of work done : Worked on the LAMP/XAMPP stack to build a web app for the organization. Also worked on Python to create some scripts related to manipulating directory structure (os library features) and work on DICOM images.

PS-I experience: Each of us were assigned personal projects and personal mentors. So the PS-1 experience was better, as personal feedback was constantly given by my

mentor. I was lucky enough to have received a supportive mentor. Could complete the project in the stipulated time. Received support from other consultants and system analysts.

Learning Outcome : I learnt web development, and how to write scripts in python. I also learnt how to work in a govt. corporate organization (similar to a PSU). PS1 also taught me to make new contacts in a foreign place.

PS-I is an exposure oriented course : Yes it exposes us to the industry at an abstract level, and lets us know about the workings of the real world, while allowing us to contribute a bit to it.

Name: Kamalesh.S (2017B3A30560P)

Student Write-up

Short Summary of work done : Our work in DMS office involved creating a voice based chatbot for Rajiv Gandhi Government hospital, chennai. The purpose of the bot was to help patients and visitors alike to navigate the myriad medical departments in the hospital. This usually takes, badgering the already busy hospital staff for directions and multiple trips to arrive at the correct department and ward. The bot also provides the user with the working of hours of all the medical departments, so that the user can plan his/her trips accordingly and avoid unnecessary hassles. We used dialogflow to build the bot, and used firebase to deploy the cloud function. Also a website was created for updating the department location data of the hospital, by the hospital staff, at the request of our incharge Dr.Bruno as hospitals changed their wards frequently. Specifically, our bot provides the user with the building number, floor, and room number, along with the department's working hours. Currently, our bot works in two platforms google assistant and facebook messenger, Though google assistant has both voice and text input, messenger can interact with only text input/output with the user. We have sent for review of our apps to both facebook and google, and after analysis the may let us make the app public. There is also scope of expansion, as dialogflow supports integration with multiple messaging platforms. One possible future course of expansion is the application can be expanded to different use cases such as accomodating laboratory timings and scheduling appointments etc.

PS-I experience: My PS expereince was a pleasant one, I experienced first hand on how an office functions and had the chance to learn about creating chatbots which are more prevalent in today's world, most companies use chatbots for customer service and it was interesting to learn how to make one.

Learning Outcome : I learnt the python syntax, so that I could do basic programming in our project, which, we ultimately did not use.
I learnt how to create a basic chatbot and the different components working in tandem inside one, a natural language processing engine which parses the message and sends meaningful data to the cloud function, which sends the appropriate response back and the database.
I also learnt that the best way to work in an organisation is to show practical working results.

PS-I is an exposure oriented course : Sure, some of the things I was exposed to in PS, cannot be acheived in a classroom.

PS-I station: Telangana e-governance, Hyderabad

Student

Name: T Yashwanth Reddy (2017AAPS0459H)

Student Write-up

Short Summary of work done : Modelled and tried efficient neural net architectures to find the best choice considering the problems in question like low image quality and some classes lacking enough data for acceptable confidence of discrimination. Learned about machine learning fields like deep learning, transfer learning, unsupervised learning and some aspects of image processing . Learned about the different python libraries that are commonly used by developers to speed up the process of programming machine based systems. Learned how to use third party models like mobile nets and google inception for classification tasks.

PS-I experience: I became an intern with the ESD department, telangana e-governance in the hopes of gaining professional work experience I could use toward obtaining my first job. What I got was so much more.
During my time as an intern I was able to independently work on projects while learning from the experiences and expertise of the staff. Not only did they want me to work on my own to grow professionally, but they wanted me to succeed and learn as well.
As an intern you will learn that a job does exist that allows you to wake up every day and be excited to go in and learn and experience something new and challenging.

Learning Outcome : Learned about machine learning fields like deep learning, transfer learning, unsupervised learning and some aspects of image processing . Learned about the different python libraries that are commonly used by developers to speed up the process of programming machine based systems. Learned how to use third party models like mobile nets and google inception for classification tasks.

PS-I is an exposure oriented course : yes, PS-1 helped me understand how everything works in a corporate world

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Name: Adithya Samavedhi (2017A7PS0071G)

Student Write-up

Short Summary of work done : Build a website using HTML and CSS for telangana e governance. The aim is to provide a platform for foreign investors to get an idea about the life sciences corridor in Hyderabad. The government aims to make Hyderabad as a global pharma hub and the website is to potray all the content related to it.

PS-I experience: The experience was good, i had got to learn a lot of things, especially to make a website from scratch. I was able to learn and apply how to incorporate CSS and HTML to create the website. Its a hand -on experience with lots to learn.

Learning Outcome : Learning outcome was to develop the quick learning ability to learn something and apply it within a short span of time.

PS-I is an exposure oriented course : Yes, it is one of the only courses at bits which gives an insight into what the industry life is and how work is being done on a daily basis in the industry.

Name: Chandra Sai Sharath (2017A7PS0219H)

Student Write-up

Short Summary of work done : The work was non-technical, but related to blockchain. Our work was on Blockchain DIstrict. We helped develop a website for the BCD, made and collected content for the website. We helped in completing the directory of the blockchain ecosystem of Hyd. We analysed various blockchain hybs around the world and profiled them with a list of attributes. We also profiled all the startups of Hyd according to size, founded in etc.,

PS-I experience: Overall, it was a good experiece, though the work was non technical. We got to interact with leader of the industry, and a professional workplace at CIE(IIITH). We were directed by Prof. Ramesh Lognathan who was a very good mentor and helped us at every step

Learning Outcome : Researching for info, making content for websites. Working with vendors for websites, Categorizing and profiling data at hand and collecting data required. Analyzing an ecosystem

PS-I is an exposure oriented course : I support the statement. PS-1 honed communication and presenting skills along with teaching new skills like researching and content making

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Name: MALLADI SPOORTHI SIRI (2017B4A70580H)

Student Write-up

Short Summary of work done : I was assigned Lead generation in the project T-SIG. My work is to identify strong potential prospects using initiative and creativity, to generate outbound lead opportunities and generate new CSR contacts. Maintain well-organized, up-to-date and accurate database of existing and new stakeholder information. Attend and assist other team members at conferences and events to generate new leads. And also assigned to NGO cooperation and coordination as a part of it I assisted PR Manager in all communications related to NGOs and facilitate communications between NGOs and Samhita, T-SIG's partner.

PS-I experience: I have worked under lead generation team in T-SIG project in which we have to generate new CSRs. To do that we used to browse a lot for various companies CSR teams and also cold calls if needed.we have to send introductory mails using government official mail Id and brief messages through Linkedin. we need to get get in touch with senior positions of companies and also with various NGOs in assistance with mentors which is a quiet new experience.

Learning Outcome : Learnt to maintain database ,communication skills and browsing skills improved.

PS-I is an exposure oriented course : Yes, it is an exposure oriented course because during PS-1 we are exposed to real life problems faced by an organisation.

Name: K Venkat Anoop (2017A7PS0271H)

Student Write-up

Short Summary of work done : Made a document classifier which can be used to classify documents which have been collected by mee-seva centers over the years, and also new documents to come. Since Convolutional neural networks are the algorithms of choice we incorporated Google's inception model for the task.
The product was relayed to the in house development team who will work on integrating it with their services like mee-seva and DRM

PS-I experience: Very educational, learned about the internal structure and working of the organization and IT organizations in general.
Learned a lot of useful subject related concepts.

Learning Outcome : Learned about machine learning, particularly neral networks including Convolutional neural networks and recurrent neural networks, also generative models like variational autoencoders and generative adversarial networks, learned about the popular python libraries like tensorflow, numpy, pandas, scikitlearn, matplotlib, and django

PS-I is an exposure oriented course : Strongly agree, I find learning is effective and efficient under the mentorship of technical experts who act as colleagues rather than supervisors or guides.

Name: B.Sailendra Akash (2017AAPS0455H)

Student Write-up

Short Summary of work done : I was allotted a Grievance web portal development project for the Electronic Services Delivery (ESD) in Telangana-e-governance.I planned to develop the project using Python,Django web framework for back-end, MySQL for the database and HTML, CSS, Java Script for the front-end.For the first 5 weeks I worked on the back-end and database, making changes as required by the company and next 2 weeks I worked on the front-end design of the website.I had many challenges while working on the back-end part of the website as it has many functionalities and myself being completely new to Django framework,I had to read the documentation a lot for all the functionalities website needed.The website has multiple user layers like citizen,support staff,head staff,manager and admin superuser and the most challenging task was to provide restricted user access based on the type of the user.Finally I figured out that we can use groups and decorators in django to provide restricted access to users.The second challenge was to migrate the database from sqlite (which is the default database provided by Django) to MySQL which I took time to figure out because there is no process that works accurately as per the company's requirements,but finally made it.Then after completing the back-end I worked on the front-end development.I showed a design of the front-end to the company and they were impressed with it and hence I coded the front-end part in HTML, CSS, Java Script.Many review meetings were held in between and suggestions were given for the betterment of the website.In the last few days we had a presentation and report submission.

PS-I experience: It was a great exposure to the professional culture.I learnt how a company works, methodologies they take up when assigned to a project and most

importantly how to interact with people professionally. PS-1 has improved my communication skills.

Learning Outcome : I learnt Python, Django, HTML, CSS and Java Script.

PS-I is an exposure oriented course : I completely agree with the above statement ,It provides exposure with corporate culture and working professionals,learning such skills before graduation will always be a help for working with great companies in future.

Name: Abhinav Gupta (2017A4PS0907G)

Student Write-up

Short Summary of work done : I worked with the program management business unit of the incubator. My worked initially involved understanding the working of T-Hub and the Indian startup ecosystem. I attended talks on consumer development and innovation strategies. I talked to startups on a daily basis and understood their needs in terms of mentorship, scaling and investment readiness. I was also a part of a series of startup pitches to potential corporate investors. I worked with a design undergrad to survey the user requirements for the T-Hub mentorship website and the startupbyte community management app. I also worked with the Information Sciences team to suggest changes to the upcoming T-Hub website. I designed the entire workflow for T-Hub Investment Readiness program and the Mentorship program to help top SaaS application providers like Zoho design a custom portal for T-Hub programs. I also studied the network infrastructure of the entire building, understanding how the redundant 10 gigabit fiber backbone powers the entire building.

PS-I experience: The Practice School program is one of the most structured ways a student can get industry exposure working with the best of organisations. Telangana e-governance has 13 substations and each substation handles a separate section of the IT Department of the Telangana State. My PS was India's largest startup incubator - T-Hub situated in IIIT Hyderabad. It has the best office space one could ask for including everything from free food to foosball. My mentors were from BITS and were always eager to guide me throughout my internship. The co-working space concept made the environment interactive and everyone was very approachable right from the CEO to the network administrator. Regular team meetings were held and ideas were always welcomed from interns. I resided in the beautiful IIIT Hyderabad campus which is well

connected to the rest of the Hyderabad. I made friends, traveled and gained valuable life experiences during my PS-I.

Learning Outcome : I explored the startup ecosystem and understood what management jobs entail. Overall, it has been a great learning experience.

PS-I is an exposure oriented course : This internship has exposed me to entrepreneurship and various other career options. I now have an idea of how corporates and startups work and the various aspects of building a company from ground up. I am thankful to the PS Division for giving me this opportunity.

Name: Vasishta Devalla (2016AAPS0218H)

Student Write-up

Short Summary of work done : My work was to build an End-to-End Document Classifier which classified different types of documents, and its Integration with MeeSeva portal. We received various types of documents. We first broke the PDF's into individual pages. We then cropped out the unnecessary part of the docs. We then tagged them manually into various classes such as Aadhar, Birth and Community certificate, Marksheet, Study and Conduct, Income, National Food Security card, Caste certificate, EBC Certificate, EBC application,Blanks and Others. We then trained the inception model with the tagged documents. We then tested the mpdel on untagged test data and obtained the highest accuracy for Aadhar Docs.We also developed a Django interface for the given model.

PS-I experience: It was really nice to work with students of other colleges. It helped me to work in an unfamiliar environment. My project was also assigned to me based on my skilled which further led me to increase my depth of knowledge in already known topics.

Learning Outcome : Learned applicaiton of ML concepts. Also learned how to train a inception model and also that the accuracies that we obtained for each class of the documents are proportional to the number of documents of that class that were given in the training data. Aadhaar had the highest accuracy because the training data mostly consisted of aadhaar documents.A significant way to increase the accuracy of any class would be to simply train the model with more documents of that class.

PS-I is an exposure oriented course : Yes

PS-I station: UST Global , Trivandrum

Student

Name: Jithin Kallukalam Sojan (2017A7PS0163P)

Student Write-up

Short Summary of work done : The work given to me involved testing and fixing errors in one of the company's development projects. After that, documentation for various parts of the project also had to be written.

PS-I experience: The work was fine, but could have been slightly more challenging.

Learning Outcome : It helped me learn the workflow in a corporate environement. As we were assigned to the R&D department of the company, we had to learn about different types of technologies that were implemented in the project.

PS-I is an exposure oriented course : Interning in a company like UST Global definitely did provide exposure to the corporate environment. Also, there were talks organized by the company, bringing project managers from other companies working on cutting edge technology, and this helped us gain a sense of the type of work companies do, especially in the IT field.

PS-I station: Viitorcloud Technologies Pvt. Ltd. , Ahmedabad

Student

Name: Dhvanil Sanghvi (2017B3A70379G)

Student Write-up

Short Summary of work done : I had the opportunity to make an e challan system implemented on blockchain. I learnt how to create a rest API for blockchain from scratch, create MongoDB servers in Node.js and made use of those two servers in our web application which was based on Angular 8. Basically, I learnt how to work with blockchain. Sought out to find a real world problem in which it can be implemented. Then , created a web application for the same.

PS-I experience: The PS1 experience was amazing. The organization culture at viitorcloud is quite wonderful. There were many fun activities alongside work throughout the 8 weeks. We were given full liberty to choose our domain of work and were guided whenever we were lost somewhere.

Learning Outcome : I was successfully able to make an e-challan system which is implemented on a blockchain. I am comfortable working with hyperledger fabric and composer after this internship. I can also make applications on Angular 8. This internship gave me the chance to think about any problem in the real world and to come up with a solution for it. It equipped me with a critical thinking approach.

PS-I is an exposure oriented course : Ps-1 was my first exposure to the corporate world. It provided me with an insight on the functioning of a corporate and how well I am able to adapt and thrive in that environment. Viitorcloud technologies has left me with wonderful experiences and memories. The company is known for its rich organization culture. The people there are very warm and helping. There's always this presumption that a 9-5 job is so boring. But PS1 has completely changed this perspective for me.
I am thankful to BITS for providing me with this opportunity.

Name: Shrey Shah (2017B2A71038P)

Student Write-up

Short Summary of work done : Our project was on building an Attendance system based on Facial recognition techniques. The company gave us full freedom to decide the field of our project and they wanted that we created value out of it. We were quite excited to choose this project as it covers many concepts. We used or developed facial detection models, facial aligners, machine learning models for facial recognition which were trained on a real life training data-set. To build an easy-to-use system, we built a web application using Django and used important concepts like making forms, authentication, integrating front-end with back-end etc. Lastly we also used SQLite database to manage database for our attendance reports and visualized it using Seaborn graphs available with Python.

PS-I experience: PS-1 was an enriching experience for us. We were happy to get the freedom of choosing our project and working with new technologies. Apart from the technical learning, we also got to know many aspects of the corporate life. We are grateful to our mentor who believed not only in providing technical knowledge, but also helped us in increasing our efficiency by helping us with planning and shaping our project. Hence I will say a student should really look forward to these types of learning outcomes as well. Overall, the PS-1 experience was good and different from the academic learning in college we had experienced before it.

Learning Outcome : We learned to use many libraries and models in python used for facial detection and recognition. Some of those were Haar classifier, LBPH classifier, Dlib, HOG based detector, CNN, KNN, face_recognition library etc.
In developing our web application we learnt how to use Django in python to develop a website. Learnt some important aspects like creating forms, authentication, integrating front-end with the back-end etc. We also learnt to use SQLite database, and hence covering concepts from database management. We used matplotlib and Seaborn library to plot important graphs using python for data visualization.
Some of the other non-technical learning outcomes were also there. They include effective project planning, participating in group discussions, working with a team, presenting your work etc.

PS-I is an exposure oriented course : According to my experience and in my PS station, yes it was. They gave us the opportunity to explore and then choose our project.

Name: Vokkant Thakkar (2017B5A10873G)

Student Write-up

Short Summary of work done : On our first day in the PS, we were given multiple fields in which we could choose our projects. The fields available were ML, AI, Blockchain, AR and VR.
After some research, I chose to do the blockchain project.
At the end of 8 weeks, we had successfully learnt how to create a back end REST API using a blockchain to store data, made the front end web application using Angular using forms and services and routing, and MongoDB for database requests. We also learned how to integrate all three, and make a fully functioning web application on the local machine. In the end, we tried deploying it on the cloud, however due to time limitations, we were unable to do that.

PS-I experience: My PS-1 experience was very enriching. I worked on a real project where we had to focus on the functionality, and not just a proof of concept. This taught me more about how to deal with real world problems, which sometimes we dont even consider when making a product. Other than that, i learned how to behave in an office environment, and learned that living a corporate life can also be fun.

Learning Outcome : We learnt and understood the concepts of a blockchain, and how to code the back end using a blockchain. Further, we learnt how to make an Angular web application, and integrate all of this to form a fully functioning web application. Along the way, we also learned how to properly plan a project, how to break it down into smaller pieces so one doesn't get overwhelmed, while still sticking to a schedule.

PS-I is an exposure oriented course : Yes very much so. One of the most important things i learned was how in the real world, results are more important than your efforts. We learned many more things about the structure of the organisation, and how to conduct oneself in meetings, and how to interact with ones colleagues. It was a great experience.

Name: Goel Pratyush Ramsharan (2017B5A70899P)

Student Write-up

Short Summary of work done : Created a face recognition based attendance system which includes working on back-end of program (python based programming using libraries like OpenCV, Dlib) and a user-interface based on Django framework. Apart from attendance it will also show the avg hours spent by employee at office and IN/OUT time graphically. We also had GD's conducted by instructor which were

PS-I experience: It was great. Being my first experience, I really enjoyed the work culture. We were asked to make a timeline for our task and adhere to it. Completed the project a week before. Apart from work, on weekly basis they assign a random person a task which he/she had to do (mostly singing and dancing). All in all it was a great experience.

Learning Outcome : This PS was my first step to my career in CS. I not only gained the coding skills but also got an insight on how tasks are completed and deadlines are achieved in corporate world. A strict timeline is necessary if one is serious with his work.

PS-I is an exposure oriented course : My project was based on real life problem. The bio-metric system used takes time to id a person which lead to big lines during peak hours. Our project(if implemented) could make the recognition automated and in real time with great accuracy.

PS-I station: VoiceQube , Bangalore

Student

Name: Advait Deshmukh (2017A7PS0155P)

Student Write-up

Short Summary of work done : I learnt using AWS and Alexa skill development. In the first weeks we completed learning JS and NodeJS so that we could start learning to create Alexa skills. The conversation flow design had to be converted into the interaction model front-end which through lambda sends request to the back-end and

the request is completed. This design had to be developed for our respective projects and then it was deployed.

PS-I experience: PS I helped me understand how a start-up functions. How the tasks and responsibilities are divided. What is the power structure inside a company. It also helped me improve my interpersonal skills. I learn to collaborate with people on ideas and projects.

Learning Outcome : Apart from developing technical skills, PS I prepared me for the industry in which I intend to work after graduation.

PS-I is an exposure oriented course : This statement is apt in describing my PS I experience in a sentence.

Name: Prakhar Gupta (2017A7PS1441H)

Student Write-up

Short Summary of work done : I was assigned a deep learning based project, where we had to design and implement an automated attendance system using face recognition.
We used Google's Facenet network as our core component in this project, and we implemented an API to register new candidates, and store the results in a database with timestamps.

PS-I experience: It was a great experience. We learned valuable lessons from the instructor and company employees working there.

Learning Outcome : New technology and skills such as Alexa skill development, Deep Learning

PS-I is an exposure oriented course : I wholeheartedly agree with the above statement as we had to work to make an industry ready product.

Name: Rikil Gajarla (2017A7PS0202H)

Student Write-up

Short Summary of work done : Development of Wake word engine which determines the presence of a wake/trigger word and when detected, it would call an API. The engine works in real-time by processing audio stream input from the microphone connected to the device.
This engine is very essential in fields where Voice User Interfaces are used. Ex: Alexa, Google, Siri. Usually Speech to Text engines can be used to determine a specific word and process it. But speech to text engines have higher CPU load to convert all determined words to text and then identify. Wake word engines have lesser CPU overhead as they only try to identify specific word from the input stream. Wake word engines are also flexible as they can be trained in any language.

PS-I experience: PS-1 gives us great opportunity to learn about the corporate world and use various tools and skills which are highly demanded in the Industry. In PS-1, you get to learn a lot of new stuff which is not taught in the academics. PS-1 helped me understand the importance of team work and communication which are essential for the project to be a success. I got an opportunity to learn a lot of new stuff and also understood the working of a startup. The overall PS-1 experience was very enlightening.

Learning Outcome : PS-1 helped me understand new topics like Machine Learning and Neural Networks. I have understood the importance of Team work and effective communication. I have also understood that there are many highly efficient online libraries available for simplifying the task at hand and can be used to save time.

PS-I is an exposure oriented course : PS-1 is truly an exposure oriented course. It gives you an opportunity to work in the industry which is quite different from academics. We get to know know that there are many different aspects other than knowledge which are required in the industry

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Name: Arnav Buch (2017A7PS1722H)

Student Write-up

Short Summary of work done : We worked on Alexa Skills Development. We made a GRE tutor application that served as a way for students to prepare for the verbal test with a sort of quiz game.
Definitions would be given to the user and he would be prompted to guess the word. His answer correctness would he stored and used to select words based on difficulty level during revision as decided by the user.
In order to make this skill, we had to learn about the Alexa interaction model and about the services offered in the AWS free tier.
Apart from the GRE Tutor skill, I was also tasked with working on a client side mobile application for the company's main product - Elaachi.

PS-I experience: PS1 provided a great insight into corporate culture. I got to understand how a startup works and also about how the voice application industry works. Apart from this, I got to learn about developing skills for the Amazon Alexa which was very educational.

Learning Outcome : I understood how a company functions, how people work under pressure in the industry, especially in a startup.
Technology wise, I learnt about voice technology, specifically the Amazon Alexa and how to develop voice apps for it.

PS-I is an exposure oriented course : This statement is very true. PS1 offers you insights into the real working world, be it a startup or a government research institute. It allows you to get real life experience at proper companies and the internship is vital in giving proper exposure to students.

Name: Gokul Kumar M (2017A7PS0236H)

Student Write-up

Short Summary of work done : Our project was to simulate Abdul Kalam's speech using Amazon Alexa Device. We had to learn NodeJS and Javascript for the project which had to be built using Amazon Alexa Developer Console and Alexa Skills Kit. This

was done based on the various speeches given by Abdul Kalam and the answers he gave whenever he was asked questions.

PS-I experience: Practice School 1 was a fun experience and got to learn new skills like Alexa Skill development. It was a roller coaster ride filled with ups and downs. There was times where I was stuck in my Project and my mentor helped me.

Learning Outcome : Got some Industry experience and Learnt how to develop an Alexa Skill. Also learnt a lot of life lessons because of our project which was based on Abdul Kalam's life.

PS-I is an exposure oriented course : Yes, I learnt how a startup works and got industry experience.

Name: Sayanti Ghosh (2017A7PS0261H)

Student Write-up

Short Summary of work done : First, the interns studied the required material to be able to understand basic concepts and work on the project later. The work was related to developing voice applications, specifically Alexa skills. Afterwards, the students were split into groups and given projects involving development of Alexa voice skills for specific purposes. Our group of 4 people was allotted a project to develop a skill for clothing suggestions based on the user's physical details like height, build, and complexion. The occasion was also taken into consideration for the recommendations. This took about 2 weeks to develop.

PS-I experience: It was an enriching experience, with one getting to learn relatively new concepts like voice application development, which isn't included in the academic curriculum.

Learning Outcome : Apart a gaining an understanding of new concepts, learning to work in a team and getting to know how a start-up works were some of the major takeaways of this internship. We became familiarized with the processes that an application is subjected to before its market release, and also saw the steps involved in its design.

PS-I is an exposure oriented course : PS-1 is meant to give the students a glimpse into the working of the industries, so that they are accustomed to the corporate environment and well equipped to face the duties once they take up a job. It is also conducive to the development of soft skills, with evaluation components like group discussions, which tend to enhance the ability to communicate effectively. PS definitely meets these objectives and provides a fruitful experience.

Name: S Rohith (2017A7PS0034H)

Student Write-up

Short Summary of work done : VoiceQube develops voice applications on Alexa/Google Home and other similar voice assistants. Or, more eloquently, VoiceQube helps businesses in adding voice to their applications. Apart from building custom NLP applications, Alexa Skills, & Google actions, VoiceQube also assists enterprises in creating a voice interface to their existing web/mobile applications.
Our project involves building an Alexa skill for giving clothing suggestions. User data like height, complexion, weight and occasion are taken into account to recommend the suitable attire. Based on the inputs, one of the most fitting garments is picked from the database.
When the skill is invoked for the first time, the inputs ‘height’, ‘weight’, and ‘complexion’ are stored, and aren’t asked for again. But, if the user wants to change any of these inputs later, it can be done. Every time the skill is invoked, Alexa asks for the occasion and the time of the day, and gives suggestions accordingly.
One of the major challenges was creating an extensive database and coming up with a consistent system to give a suitable suggestion. We managed to make a comprehensive database which can be extended and modified as required. We also decided upon a points system where in each outfit would be given points according to their features and other factors like the occasion, time of the day etc. We also had to incorporate a persistent database in our code and use it for the skill.

PS-I experience: On the first day at voiceqube, we went to the Whitefield office and the voiceqube team invited us. We introduced ourselves to them. They gave us each a form to fill in our details and there was also a section about our technical skills.
The founder of the company, Vishnu Saran was also present that day. He gave us a basic idea of what voiceqube does and the process involved in working with a client.

From the next day we started working at the Koramangala office. Chandraprakash Soni is our mentor at this office. We were given links to some resources to learn how to develop an alexa app. We started learning the necessary skills required for making an alexa skill. During the process of learning, I made a few alexa skills that uses the things that I have learnt so far.
After a few weeks we were given a project to create an Alexa skill that suggests clothes for women according to their physical attributes for a given occasion and time. Our team had 4 members and we divided our work and started working simultaneously.

Learning Outcome : During the time of Practice School I have learnt so many things. Technical skills that I have learnt are using Amazon lambda function that serves as endpoint for the alexa skill frontend. I have made a few Alexa Skills that can store data persistently in Amazon S3 buckets and also learnt to use cloudwatch services for debugging the voice app.
We learnt how to work in a team and distribute the work to best match the skill set one possesses, how to efficiently communicate and take the suggestions which will work best for the project. Learnt new concepts and applications from other team members.

PS-I is an exposure oriented course : Yes, definitely. PS-1 helps us understand how the things we learn in classrooms work in the real world. In PS-1 we learn through a practical approach rather than a theoretical one.

Name: R Pravin (2017A7PS0108G)

Student Write-up

Short Summary of work done : Initially the first 2-3 weeks I learnt about Alexa skills, how to build them. I went through different documentations and blogs for that. I learnt JavaScript, NodeJS for back-end. I learnt about AWS Lambda services, S3 buckets and DynamoDB. Then I built different Alexa skills which includes different functionalities.
After that I started working on Automated Attendance System using Face Recognition project allotted to my group. We spent few days researching about different ways to achieve the desired result. We then built a model that can detect face using MTCNN and recognize faces using FaceNet and SVM classifier. Since the model's speed was very slow and not efficient for piratical uses we spent few days optimizing it and were able to achieve real time speed without compromising much on accuracy. We managed to even detect and classify unregistered faces. We tried building an API to store the attendance on online database but due to time constrains we made script that stores the attendance in an local excel file.

PS-I experience: The PS helped me learn a lot of new things. First thing is how to work in a professional environment. Showed me how to take responsibility and what is excepted from each one of us. Second thing is we learnt a lot of new software and development tools.

Learning Outcome : Technical skills: Learnt different languages like JavaScript, NodeJS, etc. Learnt AWS Lambda services, about Alexa developer console, Dynamo-db, etc. Learnt about different Deep Learning models and Libraries.
Personal skills: Time management, taking responsibility, team work

PS-I is an exposure oriented course : Yeah. I learnt about how to work in a professional environment and what is excepted from us. Showed me what skills I have to work on for better professional life.

Name: Somil Gupta (2017A7PS0142G)

Student Write-up

Short Summary of work done : We created an Alexa skill to simulate Appu Series, kids YouTube channel. Skill is directed towards children of the age group 2-7.
The skill has been made in a way that it is accessible for both the
children and also their parents.
The skill aims to engage the user in two ways.
1. Playing a rhyme.
2. Interactive mode of exploring countries.
Once the user launches the skill saying "Open Appu" , Alexa gives the user the option of playing a rhyme or exploring a country.
If the user wishes to play a rhyme , Alexa will give the option of playing a random rhyme or a particular rhyme .
If the user wishes to explore a country , Alexa randomly selects a country for the user to explore or explores one of the user's choice.

PS-I experience: PS 1 experience was everything I thought it would be. Learnt a lot of new tech regarding voice technology and AWS cloud service. First time exposure to industry seemed like a daunting task at first, but then everything sorted out. Also made great friends, did a lot of quality work and successfully completed our project. PS helped

in realising how actually company and their professionals works. Tried my best in describing PS experience but words aren't enough for describing this.

Learning Outcome : 1. Learned how to use ASK CLI, AWS – S3 and Lambda functions.
2. Learnt NodeJS and JavaScript.
3. Learned how to build an interactive VUI.
4. Teamwork and collaboration using Git.
5. How to make a professional level skill, with proper documentation.

PS-I is an exposure oriented course : Yes, it is.

Name: Annavaram Nishanth (2017A7PS0042G)

Student Write-up

Short Summary of work done : Initially, we had to learn about Alexa and developing Alexa skills.For this, we had to learn Javascript, Node Js. Then built a few basic Alexa skills.Then I was assigned the project based on facial recognition.The project is called 'Facial recognition for automation of attendance' and revolved around various concepts of ML, like using Convolutional Neural Networks and Support Vector Machines.We used CNNs for the purpose of extracting faces from an image and then then obtaining the encodings of the faces. Then SVM is used for the process of classifying, which category, a given face belongs to.

PS-I experience: It was a really good learning experience for me. I learnt about a lot of new technologies and had to adapt to them. It was fun and enlightening.

Learning Outcome : I learnt about Deep learning technologies and working as a team and also meeting deadlines. I learnt to communicate with superiors and interact with them.

PS-I is an exposure oriented course : The statement is indeed true, because i learnt a lot about how companies work and how projects are built in a real world. How there exists a proper hierarchy in a proper organisation.

Name: Triyasha Ghosh Dastidar (2017B2A70829H)

Student Write-up

Short Summary of work done :
Our skill is directed towards children of the age group 2-7. The skill has been made in a way that it is accessible for both the children and also their parents .
The skill aims to engage the user in two ways .
1. Playing a rhyme
2. Interactive mode of exploring countries
Once the user launches the skill saying "Open Appu" , Alexa gives the user the option of playing a rhyme or exploring a country.
If the user wishes to play a rhyme , Alexa will give the option of playing a random rhyme or a particular rhyme .
If the user wishes to explore a country , Alexa randomly selects a country for the user to explore or explores one of the user's choice.

PS-I experience: It was a very enriching learning experience about Voice technology.

Learning Outcome : How to make an Alexa skill.

PS-I is an exposure oriented course : Got to know about Alexa development that I didn't know about before.
