Undergraduate

Atul Dewangan: I am pursuing B.Tech in Electronics and Telecommunication Engineering at National Institute of Technology, Raipur, Chhattisgarh. My field of interest are Machine Learning, IoT, Computer Vision and embedded systems. I have experience with many Embedded devices and microcontrollers like MSP430, Arduino, Raspberry pi, ATmega8/16. I have worked on many embedded based projects. My team was a quarterfinalist in Texas Instruments Inc. India Innovation Challenge Design Contest 2016. During my tenure at IIT-Mandi I developed a **Beowulf cluster of Rapberry Pis**. I tested this system using some standard benchmark and am currently exploring parallelization of image processing.

Kartik Upadhyay: I am pursuing B.Tech in Electronics and Communication Engineering from Amity School of Engineering & Technology (ASET) in Amity University Rajasthan (2014-18). My key area of interest are IoT, wireless communication, PCB designing and embedded systems. I have worked projects like Bridge Monitoring System, RFID based bus system etc. During my tenure of internship at IIT Mandi, I worked on project which aimed at developing a **low cost aeroponics system** in Indian environment. My other area interest including trekking, hiking, gaming and learning new things. After graduation, I intend to go on for higher studies.

Rahul Aggarwal: I am a student of Guru Nanak Dev University, currently pursuing B.Tech. (2014-18) in Electronics and Communication. My skills include Arduino UNO, Raspberry pi, C programming, Proteus. I am interested in the field of product development, and aspire to be an Embedded Systems engineer. During my tenure of internship at IIT Mandi, I developed a **Smart Drip-Irrigation System**, using the embedded environment. The system was designed considering various parameters like dimensions of pipes used, farmer's budget and requirements, insulating wires in the field, ideal soil moisture sensors etc. I have prototyped an irrigation system in which three different Arduino UNO are interfaced with 6 soil moisture sensors, 2 with each arduino. I intend to join the workforce and am interested in entrepreneurship.

Sanjeev Kumar: I am a Btech (2014-18) student of Guru Nanak Dev University, regional campus Jalandhar. I participated in Summer Internship program 2017 at IIT Mand. Under the supervision of my guide Dr. Srikant Srinivasan, **I set up an IOT lab course for MTech students** at IIT Mandi. As part of these I worked extensively with microcontrollers, building custom PCBs, studying electronic components and designing IOT systems for applications such as voice based automated control. I have demonstrated wirelessly controlling multiple Arduinos as a slave with single Raspberry pi as a master. I also helped in making  a project on Smart Irrigation. I am interested in entrepreneurship.

 Ankita Nandi: I worked on **opinion dynamics**, the study of opinions and behaviors. A scientific modeling of opinions and behaviors will help the society to overcome issues like global pandemics or even understand migration and urbanization patterns. Many approaches have been established to understand opinions. One such approach was penned by Deffuant et al., who suggested a mathematical formula as a rule for two agents in a population to interact and share their opinions, if and only if the distance between the two particles lies within some threshold. Their results have been reproduced to understand the working of the system. After the reproduction of results, certain variable parameters such as the convergence parameter, the number of opinion clusters and their relationship with the time at which they converge were explored to gain deeper understanding.

Pulkit Sapra: I am a 3rd year BTech student at IIT Mandi pursuing a project under Dr. Srikant Srinivasan on Machine Learning. I have been given a dataset having information on Distribution of Yield across various years in various parts of Iowa, USA. The data also talks about the various seed brands , varieties and weather conditions in the locality. The aim of the project is to apply various **machine learning models to predict the yield** in the forthcoming years based on relevant factors and see the trends across various domains. Currently I have applied Naive Bayes model for classifying a brand into a specific yield region based on the brand’s performance in the past years. In future, I will be finding the most relevant factor that affects the yield by taking into account weather conditions also.

Abhigyan Khaund: I am a 2nd Year student at IIT Mandi. During my summer vacations after 1st year, I started working with Prof. Srikant Srinivasan on **Machine Learning**. I started by reading and studying about various machine learning techniques, their implemetations and their algorithms. Now I work on an agricultural dataset on corn plants with their different features in different environments belonging to different species. Data cleaning was done on the dataset, fixing missing values using regression techniques and mean values, along with removal of outliers. The main task was to find some scientific correlation in the dataset. I investigated the effect of environment on different traits. Dimensionality reduction techniques like PCA, Isomap, tSNE have been used on the dataset and the results are being observed to derive a correlation between different traits and effect of the plant genotype on its features. Future goals include establishing the aforementioned relationships with scientific basis, determination of high yielding plant families and a deeper understanding of tSNE and PCA.