Praveen Agrawal   12D020030

Electrical Engineering   **UG Third Year(Dual Degree)**

Indian Institute of Technology Bombay   **Male**

Specialization: Communication & Signal Processing   **DOB: 18/10/1993**

Examination	University	Institute	Year	CPI / %
Graduation	IIT Bombay	IIT Bombay	2015	8.41
Intermediate/+2	CBSE	Delhi Public School, Bokaro	2012	94.40
Matriculation	ICSE	St. Joseph's School, Dumka	2010	93.86

SCHOLASTIC ACHIEVEMENTS

- **Branch Changed** to Electrical Engineering Dual Degree from Chemical engineering Dual Degree: change of branch granted to only **68 students in a batch of over 850** students   (2013)
- Awarded **Scholar Badge** by Delhi Public School, Bokaro for academic excellence in Class XI (2011)
- Secured **International Rank 27** in 4th International Mathematics Olympiad 2010   (2010)
- **District topper in ICSE Class10th** board exams with 93.86%   (2010)
- Received merit certificate by Prabhat Khabar press for the outstanding performance in Class 10th ICSE exam   (2010)

PROJECTS & INTERNSHIPS

Poisson and Schrodinger Equation Solver   **(Apr '14 – May '14)**
Guide: Prof. Dipankar Saha ((Department of Electrical Engineering, IIT Bombay)
- Studied the mathematics involved in solving the semiconductor equations in **heterojunction devices**
- Discretized the poisson equation and the schrodinger equation using **central difference technique**
- Programmed the solver using MATLAB which took the charge density function in the semiconductor substrate as an input and plotted its **conduction band edge, eigenfunctions and the eigenvalues**

Analog Alarm Clock on VGA display   **(Feb '14 – Apr '14)**
Guide: Prof. Madhumita Date ((Department of Electrical Engineering, IIT Bombay)
- Designed an alarm clock with four hands (including alarm hand) which would be displayed on a VGA
- Solely devised the algorithm to display the clock in complete synchronization with the real time
- Programmed the clock using **Verilog HDL** on **a DE0 Nano FPGA Board**
- Provided user control to set the timings during the run time of the code through external switches

Internship, Plancess EduSolutions Pvt Ltd.   **(Dec '13)**
- Appointed as the **manager** of the newly formed videos department of Plancess
- Responsible for planning videos (GDs, academic lectures, etc.) on issues addressing the JEE aspirants
- Conducted group discussions amongst IIT students to clear out crucial confusions of the JEE aspirants
- Penned down over **50 audience targeted articles** for maintaining the online blog of Plancess

Voice Controlled Bot   **(May '13 – Jun '13)**
Under Students' Technical Activities Body (STAB), IIT Bombay
- Studied **audio signal processing** and developed algorithms for voice recognition system
- Programmed the voice recognition system (using MATLAB) to recognize 4 keywords (forward, back, left & right) which can be extended further to any number of keywords
- Built **a wireless car and a humanoid bot** that was controlled with the 4 voice commands
- Output generated by MATLAB was sent to an **arduino** board which gave the signals to run the bot

Shopping Site   **(Mar '13 – Apr '13)**
Guide: Prof. Sridhar Iyer (Department of Computer Science and Engineering, IIT Bombay)
- Developed an **offline** shopping site similar to **flipkart.com** using C++ programming language
- Prepared a database to store price and all details of items available for purchase for the user
- Efficient use of file handling to record User IDs, passwords, purchase history and user account details

Tic-Tac-Toe Game   (Feb '13)
Guide: Prof. Sridhar Iyer (Department of Computer Science and Engineering, IIT Bombay)
- Programmed the cross & zero game to include **CPU vs. player and 2 player modes** using Scratch
- Involves **3 difficulty levels** in CPU vs. player mode and a user friendly graphical interface
- Implemented appropriate constraints to make the **CPU invincible** in the hard level of difficulty

POSITION OF RESPONSIBILITY

Manager, Media and Creatives, Student's Technical Activities Body (STAB)   (July '14 – Present)
Technical Body of students' gymkhana, IIT Bombay
- Responsible for **designing** the **posters, flexes, t-shirts**, etc. for all the six clubs of STAB
- Working with the web manager for creating an attractive and lucid **STAB website**
- Responsible for the designing and editing of **Lightsaber (Institute's Technical Newsletter)**

Coordinator, Food and Beverages, Mood Indigo   (May '13 – Dec '13)
Mood Indigo – Cultural festival of IIT Bombay: Asia's largest cultural festival
- Worked for association with brands like **Subway, Faasos, Costa coffee, CCD**, etc.
- Planned and successfully executed a procedure to ensure proper food distribution during the festival
- Managed about 20 organizers solely to ensure better and efficient food distribution

Coordinator, Ozone, Techfest   (Nov '13 – Jan '14)
TechFest – Science and Technology festival of IIT Bombay: Asia's largest Science and Technology festival
- Managed the setups of gyroscope, paintball and laser tag during the 3 days of the festival
- Designed innovative **3D structures** to create the ambience of various institute arenas
- Solely guided the organizers to develop **over 200 origami structures** to construct the TechFest logo

Manager, Hindi Utsav   (Oct '13)
IIT Bombay's 1st ever Hindi Cultural Festival
- Planned and executed various competitions like debate, poetry writing, quiz, etc. during the festival
- Conceptualized ideas to publicize the festival in the campus which resulted in huge participation

KEY COURSES

Advanced Computing for Electrical Engineers, Fundamentals of Digital Image Processing, Special Semiconductor Devices, Computer Programming and Utilization, Probability and Random Processes

EXTRA CURRICULAR ACTIVITIES

- Received **Hostel Cultural Special Mention** Award for the contribution to cultural activities (Apr '14)
- Developed my own **webpage** using bootstrap template: *http://home.iitb.ac.in/~praveen.agrawal*(Dec '13)
- **1st position** in **Hindi Debate** General Championship – Inter hostel competition   (Sep '13)
- **1st position** in **Sophie Fine Arts** Championship – Book cover designing challenge   (Aug '13)
- Acted in the **winning team** of **Performing Arts Festival (PAF)**, Mandali   (Mar '13)
- Stood **2nd** in **Hindi Group Discussion and Panel Discussion** organized in Hindi Utsav   (Oct '12)
- Secured **1st position** in Freshie Productions – inter hostel freshmen **street play** competition   (Sep '12)
- Secured **1st position** in intra hostel **dramatics** competition: acted, directed and scripted   (Aug '12)
- Declared as the **best speaker** in Freshiezza **Hindi Debate** competition   (Aug '12)
- Taught underprivileged students at **'Asha'**- an NGO for two consecutive semesters (Jul '12- Apr '13)
- Built a radio controlled car and a line following bot for race competitions in IIT Bombay   (2012)
- Represented school in **Zonal Debate** competition organized by the **ICSE** east-zone in Devghar (2010)
- Secured **2nd position** in intra school **English Debate** Championship in class 10th (2010)
- Great enthusiast and practitioner of **origami**: traditional Japanese art of paper folding