



**Praveen Agrawal**  
**Electrical Engineering**  
**Indian Institute of Technology Bombay**  
**Specialization: Communication & Signal Processing**

**12D020030**  
**UG Second Year**  
**Male**  
**DOB: 18/10/1993**

Examination	University	Institute	Year	CPI / %
Graduation	IIT Bombay	IIT Bombay	2014	8.61
Intermediate/+2	CBSE	Delhi Public School, Bokaro	2012	94.40
Matriculation	ICSE	St. Joseph's School, Dumka	2010	93.86

## **SCHOLASTIC ACHIEVEMENTS**

- Secured **All India Rank 1453** in IIT-JEE-2012 amongst 0.5 million students
- **Branch Changed** to Electrical Engineering Dual Degree from Chemical engineering Dual Degree on the basis of the academic excellence in the first year of under graduation at IIT Bombay (2013)
- Awarded the **Scholar Badge** by Delhi Public School, Bokaro for academic excellence in Class XI (2011)
- Secured **international rank 27** in International Mathematics Olympiad 2011 conducted by Science Olympiad Foundations (SOF) (2010)
- **District topper in ICSE Class10<sup>th</sup>** board exams with 93.86% (2010)
- Awarded medal of honour by **Prabhat Khabar** press for the performance in Class 10<sup>th</sup> ICSE exam (2010)
- Secured **AA grade in 5 courses** in the first year of under graduation at IIT Bombay (2012 - 2013)

## **KEY PROJECTS UNDERTAKEN**

### **Analog Alarm Clock on VGA monitor**

**(Feb 2014 – Apr 2014)**

*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 on the VGA in complete synchronization with real time
- Programmed the clock using **Verilog HDL** on a DE0 Nano FPGA Board and provided controls to the user to set the current time and the alarm time through external switches

### **Voice Controlled Bot**

**(May 2013 – Jun 2013)**

*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
- Designed and built a wireless car and a humanoid bot that was controlled with the 4 voice commands
- Output generated by MATLAB after processing of the voice input was sent to an arduino board which generated corresponding voltage output to run the bot

### **Shopping Site**

**(Mar 2013 – Apr 2013)**

*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 the details of the user's account which are filled by the user at the time of signup

### **Sulphuric Acid Plant Analysis**

**(Mar 2013)**

*Guide: Prof. Venkat Gundala (Department of Chemical Engineering, IIT Bombay)*

- Visited the Rashtriya Chemicals & Fertilizers plant and studied the production process of sulphuric acid
- Analyzed the different blocks of the plant (boilers, heat exchangers, absorption tower, etc.) to prepare a report on the processes involved and carried out material balance on the entire plant

## **Tic-Tac-Toe Game**

**(Feb 2013)**

*Guide: Prof. Sridhar Iyer (Department of Computer Science and Engineering, IIT Bombay)*

- Programmed the cross & zero game to include both CPU vs. player and 2 player modes using **Scratch**
- Involves 3 levels of difficulty(easy, medium & hard) in CPU vs. player mode and a user friendly interface
- Devised & implemented appropriate constraints to make the CPU invincible in the hard level of difficulty

## **Balloon Shooting Game**

**(Jun 2011 – Aug 2011)**

*CBSE Class XII Computer Science Project*

- Developed a shooting game using **Turbo C++**: user has to shoot a group of balloons in minimum time
- Built functions to create continuous motion in the balloons which were to be shot by a bow and arrow
- Implemented the concept of file handling to help the users to post their comments about the game
- Designed a menu with options like instructions, high scores, etc. & developed a graphical interface

## **POSITION OF RESPONSIBILITY**

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### **COORDINATOR, FOOD AND BEVERAGES, MOOD INDIGO**

**(May 2013 – Dec 2013)**

*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 distribution of food during the festival
- Managed about 20 organizers solely to ensure better and efficient food distribution

### **COORDINATOR, OZONE, TECHFEST**

**(Nov 2013 – Jan 2014)**

*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
- Conceptualized & designed innovative structures to create the ambience of various arenas of the institute
- Solely guided the organizers to develop over 200 origami structures to construct the TechFest logo

### **COORDINATOR, HINDI UTSAV**

**(Oct 2012)**

*IIT Bombay's 1<sup>st</sup> ever Hindi Cultural Festival*

- Planned and executed various competitions like debate, GD, poetry, quiz, etc. during the festival
- Conceptualized ideas to publicize the festival in the campus which resulted in huge participation

## **SOFTWARE SKILLS**

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- **Programming languages:** C/C++, Blue Java, Scratch, HTML, CSS, Verilog HDL
- **Simulation software:** AutoCAD, Eagle
- **Others:** MATLAB, MySQL, Adobe Photoshop, Sony Vegas

## **KEY COURSES UNDERTAKEN**

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|---|--|
| • Analog Circuits                           | • Signals & System                     |
| • Electronic Devices and Circuits           | • Complex Analysis                     |
| • Digital Systems                           | • Differential Equations               |
| • Introduction to Electronics               | • Linear Algebra                       |
| • Electrical Machines and Power Electronics | • Calculus                             |
| • Special Semiconductor Devices             | • Computer Programming and Utilization |
| • Introduction to Electrical Systems        | • Modern Physics                       |
| • Network Theory                            | • Data Analysis and Interpretation     |