



**Harshit Miyabajaj**  
**Electrical Engineering**  
**Indian Institute of Technology, Bombay**

**09007026**  
**UG Third Year (B.Tech.)**  
**Male**  
**DOB: 03/10/1989**

Examination	University	Institute	Year	CPI / %
Graduation	IIT Bombay	IIT Bombay	2011	8.60
Intermediate/+2	C.B.S.E.	Maharaja Sawai Mansingh Vidyalaya	2008	88.00
Matriculation	C.B.S.E.	Maharaja Sawai Mansingh Vidyalaya	2006	90.60

## OBJECTIVE

- Seeking an internship to augment my engineering knowledge and skills through practical application

## SCHOLASTIC ACHIEVEMENTS

- Secured **All India Rank 109** in IIT - JEE ( Out of 3.85 lakh students that appeared ) [2009]
- Awarded **NTSE Scholarship** by NCERT [2007]
- Secured **State Rank 14** in State Talent Search Exam conducted by Govt. of Rajasthan. [2006]
- Secured **National Rank 245** in National Science Talent Search Exam conducted by Unified Council in over 10 different nations [2007]
- Secured a **National Rank of 225** in Nationwide Interactive Science Olympiad organized by Eduheal Foundation in India and abroad [2007]
- Awarded Gold medal for exceptional performance in National Science Olympiad [2006]

## TECHNICAL PROJECTS

### Composite Microphone Array for Speech Signal Measurements [Jun 2011 - present]

*Guide Prof. V Rajbabu*

- Studied various array designs and evaluated their performance for given application
- Developed a linear nested array for acquisition and measurement of multi-channel speech signal
- Integrated it with a digital signal processor to make the system independent and mobile

### Passive Acoustic Tracking [Jun 2011 - present]

*Guide Prof. V Rajbabu*

- Studied various motion models (maneuver and non-maneuver) for target tracking
- Implemented these motion models on a small research robot
- Studied various approaches to moving target tracking and position estimation
- Working on implementation and evaluation of various Beam-forming techniques for sound source localization using a linear microphone array

### Surveillance Robot [May 2011 - Jun 2011]

*Electronics Club, IITB*

- Built a robot that could be used for video surveillance in an urban environment
- Studied various wireless communication methods and worked on radio communication
- Studied and worked with communication protocols like I2C, SPI and assembly language programming

### Tron (Light Cycle Game) [Spring 2011]

*Guide Prof. Sachin Patkar*

- Built a 2 player version of the game based on the movie Tron
- Designed and developed controllers for navigating the light cycles and a 5x5 array of bi-colored LED's for displaying the light walls
- The entire logic for the game and driving the array was implemented without using a micro-controller or any other programmable logic device
- Simulated the game using Verilog on Xilinx Spartan 3E FPGA board

### **Loop Rush, Techfest-2011**

[Jan 2011]

- Built a line following robot to compete in Loop Rush at Techfest 2011 IITB
- The robot used feedback mechanism (P.I.D) and differential drive for navigation and control
- Made it to the top 20 teams out of 150 teams to compete in the event

### **Mini Unique Identity Project**

[Autumn 2009]

*Guide Prof. D.B. Phatak*

- Created a template from a fingerprint that stores information required to uniquely identify a fingerprint
- Provided a unique identification number to every resident of IITB based on their finger print

### **SUMMER INTERNSHIP**

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#### **Genus Power Infrastructure Ltd.**

[May 2010 - Jul 2010]

*Power Instruments Manufacturer*

- Studied various techniques used for load measurement in electrical meters
- Studied meter calibration through Phantom Loading Technique
- Helped develop a tool for collecting power measurement data recorded in remote areas easily
- Developed a Graphical User Interface for easy communication between the PC and this tool

### **POSITION OF RESPONSIBILITY**

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#### **Coordinator, Techfest 2011**

*Gaming Zone*

[2011]

- Brought in Alienware (leading manufacturer of gaming gear) as the sponsor for the event
- Conducted the biggest gaming tournament(over 500 participants) ever, in Techfest

#### **Organizer, Techfest 2010**

*Technoholix*

[2010]

- Co-ordinated with the infra-structure team and ensured smooth functioning
- Helped in setup and exhibition of a unique interactive music and graphical show by ENESS, Australia

#### **Organizer, Mood Indigo**

[2009]

*Khoon Chala*

- Organized a non-profit blood donation drive in collaboration with Non Govt. Organization

### **EXTRA CURRICULAR ACHIEVEMENTS**

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- Member of Hostel 5 Water Polo Team that made it to semi-finals in General Championship
- Member of a 5 member team for Counter Strike(computer based strategy game) of IITB
- Presently pursuing an advanced course in French language at IITB
- Won a Gold medal in Inter Hostel Swimming GC and lead our hostel to overall victory
- Qualified for final interviews of KVPY(being in top 400 students)
- Was involved in cultural exchange program with George Abbot School , Guildford , UK
- Volunteered in DISHA school for special children
- Won Gold medal in several athletic events at school level like long jump, sprint, shot-put etc.
- Selected in the contingent of 10 meritorious students who met President A.P.J. Abdul Kalam

### **SOFTWARE SKILLS**

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- **Hardware Description Languages :** Verilog, VHDL
- **Design & Simulation Software :** Eagle, Spice
- **Programming Languages :** C/C++, PHP, MATLAB/Simulink, 8085 Assembly, OpenCV, MySQL
- **Others :** Processing(open source programming language)

### **INTERESTS**

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- Target Tracking
- Computer Architecture
- Array Signal Processing
- Beam-forming Applications
- Robotics
- Image Processing
- Signal Estimation
- Digital System Design