



**Abhishek Bhowmick**  
**Electrical Engineering**  
**Indian Institute of Technology, Bombay**

**09007015**  
**UG Third Year (B.Tech.)**  
**Male**  
**DOB: 30-06-1990**

| Examination     | University              | Institute                      | Year | CPI / % |
|-----------------|-------------------------|--------------------------------|------|---------|
| Graduation      | IIT Bombay              | IIT Bombay                     | 2011 | 8.65    |
| Intermediate/+2 | Maharashtra State Board | Mithibai Junior College        | 2009 | 92.17   |
| Matriculation   | Maharashtra State board | Children's Academy High School | 2007 | 91.23   |

### **ACADEMIC ACHIEVEMENTS**

- Secured **All India Rank 101** in IIT-JEE 2009
- Secured **All India Rank 176** and **State Rank 22** in AIEEE 2009
- Secured an SPI of **9.15** in semester II
- Currently pursuing an **Honors** degree along with B.Tech Degree
- Secured **state scholarship** with rank 19 in **Maharashtra Talent Search Examination** 2006

### **RELEVANT COURSES UNDERTAKEN**

*(To be completed by April 2012)*

- Microprocessors
- VLSI Design (Honors Course)
- Digital Signal Processing
- Analog Circuits
- Digital Systems
- Signals and Systems
- Advanced Computing in C++
- Communication Systems
- Control Systems
- Power Systems/Electronics
- Electrical Machines
- EM Waves

**Research Interests:** VLSI Design, RF Systems, Embedded Systems

### **SELECTED PROJECTS**

- 1. Ground Penetrating Radar**  
(UROP01)  
*Guide: Prof. Girish Kumar  
(May 2011 – present)*
  - Developing a 920 MHz source GPR for detecting underground metallic objects like landmines, pipes etc
  - Designed and analyzed RF sub circuits using NI Multisim 9, carried out data acquisition from a prototype system using I-Q demodulation and used MATLAB for graphical display and analysis
  - Increased depth of detection from 20 cm in existing system to 40 cm using additional amplifier blocks
  - Currently implementing gated radar techniques to improve transmitter-receiver isolation and signal processing to reduce ground clutter
- 2. Automatic Vehicle Locator**  
(Summer Internship)  
*Guide: Prof. Girish Kumar  
(May 2011 – July 2011)*
  - Developed a vehicle locator using a GSM modem with GPS functionality for Wilcom Technologies, a technical start-up incubated at IIT Bombay
  - Designed the hardware and software for the first version which has standard features like SMS based tracking, onboard memory etc
  - Currently working on issues like power consumption, robustness etc and developing it into a marketable product

3. **Synchronous CDMA Communication System** *Guide: Prof. Sachin Patkar  
(January 2011 – April 2011)*  
(Course project: Digital Systems)
  - Designed and implemented a two way CDMA based communication system using basic digital blocks
  - Modeled the entire system using iVerilog
4. **Mini UID** *Guide: Prof. Deepak Phatak  
(July 2009 – November 2009)*  
(Course Project: Computer Programming)
  - Part of a team that built a software in C++ which uses fingerprints for Unique ID application
  - Wrote the code for fingerprint feature extraction and storage
  - Developed and implemented an algorithm for removal of false positives
5. **Target Acquisition and Shooting** *(Electronics Club Summer Project)  
(May 2010 – June 2010)*  
(Hobby Project)
  - Built an automatic laser pointing mechanism which processes captured images of a target and focuses the laser on the target
  - Responsible for electronic hardware assembly, microcontroller coding and basic image processing using OpenCV, a library for computer vision

### **POSITION OF RESPONSIBILITY**

- Hostel Technical Activities Secretary** *(August 2010 – March 2011)*
- Ensured participation of hostel 6 in all Inter hostel technical competitions and a podium finish in Coding GC, a significant improvement over previous two years
  - Implemented sensor based automatic lighting in nearly all hostel bathrooms, leading to reduction in electricity consumption

### **TECHNICAL/SOFTWARE SKILLS**

Proficient in: C++, Eagle(PCB Design), Ngspice, Verilog, Magic  
 Familiar with: MATLAB, Python, NI Multisim, HTML  
 Microcontrollers: AVR series, 8051, 8085 microprocessor

- I have also designed devices like CC1101 based wireless transceiver, data acquisition system for BAJA competition, line following robots, balsa wood glider etc

### **AWARDS/HONOURS**

- Awarded Hostel 6 '**Special mention for Technical Activities**' for 2010 - 11
- Awarded **silver medal** at Dr. Homi Bhabha Science Competition 2005-06
- Was **student reporter** ( 2008 – 09 ) for Times NIE, a student newspaper published by the **Times of India Group**

### **EXTRA-CURRICULAR ACTIVITIES/OTHER INTERESTS**

- Regular participant in Techfest as well as other technical and literary events
- Involved in events like Performing Arts Festival(sets production), Department Festival
- Actively involved in hostel affairs like organization of Hostel Alumni Reunion
- Organizer in Mood Indigo 2009