



**Manish Kumar Swami**  
**Electrical Engineering**  
**Indian Institute of Technology, Bombay**  
**Specialization: Communication & Signal Processing**

**10D070041**  
**UG Third Year(Dual Degree )**  
**Male**  
**DOB: 29-03-1993**

Examination	University	Institute	Year	CPI / %
Graduation	IIT Bombay	IIT Bombay	2012	8.21
Intermediate/+2	CBSE	Army School, Kota	2010	91.00
Matriculation	CBSE	Sophia Secondary School, Khetri Nagar	2008	92.40

#### AWARDS & ACHIEVEMENTS

- Among the **top 0.7%** in IIT-JEE 2010, of 0.5million candidates appeared
- Among the **top 0.2%** in AIEEE-2010, of 1.1 million candidates appeared
- Recipient of **Hindustan Copper Limited Employee's ward scholarship** for continuous 3 years (2008 to 2011) for consistent academic performance
- Received **IIT Bombay Heritage Fund Scholarship** for academic excellence (July 2011 - December 2011)

#### INTERNSHIPS & TRAINING

##### **RAKSHAK FOUNDATION**

**(May '12 - July '12)**

**Project :Framework for Right to Healthcare in India**

Mentor : Prof. Arun K. Sharma, IIT Kanpur

- Researched on the issues concerning the healthcare sector in India
- Monitored over **150 health institutions** in the vicinity of Kanpur for the condition of healthcare facilities
- Conceptualized a **novel staffing pattern** in the government hospitals along with revised budget allocation to nursing and medical schools in to overcome the issue of inadequate hospital staff and inventory
- Surveyed among the population of Kanpur regarding the health situation in their locality, successfully received response from **673 people**
- Interviewed **28 public health officials** and **11 health psychologists** for an insider's point of view on the healthcare situation
- Reviewed the Health Budget of India for the financial year 2012-13 which amounted to **INR 30,702 crore**

##### **KHETRI COPPER COMPLEX**

**(December '11)**

**Electrical Applications in the extraction & purification of Copper ore**

- Critiqued systems with Automatic Contrivance and Speed Control for Winders to lift machinery and manpower weighing upto **198 tonnes**
- Demonstrated the internal construction and applications of DC Motors with power rating of **1600kW** and Induction Motor with power rating of **0.16hp**
- Remodeled the charging circuit for a **24V** relay using the output from Tacho-generator

**Power Distribution from the Power Plant**

- Explored the technical details of a **33kV power yard** and aided in compiling the annual report of the plant
- Coordinated the power distribution plan from the power yard to the Copper Mines spread over **706.75 hectares** and electricity to the residential townships spread over **381.67 hectares**

#### POSITIONS OF RESPONSIBILITY

##### **FINE ARTS MANAGER**

**(Aawaaz, IIT Bombay)**

**(2011-2012)**

- Responsible for the overall layout of the newsletter and space allocation for each section
- Illustrated the complete newsletter by relevant photos and caricatures accompanying each article

##### **CLASS REPRESENTATIVE**

**(Dual Degree Communication & Signal Processing - 2010 Batch)**

**(2011-Till Date)**

- Student link between the faculty members and a class of **33 students**
- Collaborated with companies working in communications field to organize industrial visits
- Resolved the issues related to registration and institute elective selection that arose in the batch
- Coordinated with the department mentors and faculty advisors to cater to the needs for academically weak students

## PROJECTS UNDERTAKEN

### ELEVATOR SYNCHRONIZATION

(Feb'12 - Apr'12)

Guide : Prof. Mahesh B. Patil (Electrical Engineering, IIT Bombay)

- Fabricated a circuit to synchronize a **LED based display unit** with the elevator
- **Complex digital logic** was incorporated which involved usage of digital integrated chips of 4600 and 8600 series
- Revitalized the system to make it time and energy efficient by the use of **priority encoders**
- The display unit of the system indicated the **critical aspects of the operation** of the elevator

### ELEMENTARY UNIVERSAL REMOTE

(February 12)

Guide : Prof. Anil Kottantharayil (Electrical Engineering, IIT Bombay)

- Engineered a remote control to be used as a single control for multiple devices on control from an external switch
- Implemented a novel method to use **short-circuit current** from a photodiode to generate **potential drops of 12V** aided by OPAMPs and MOSFET transistors
- Enhanced the remote design to be used as regulator that could control the speed of a fan upto **3 levels**

### DEVICE FUNCTIONING

(Feb'11 - Apr'11)

Guide : Prof. Juser M. Vasi (Electrical Engineering, IIT Bombay)

- **Team leader** of a 3 member team and submitted analysis report describing the functioning of cell phones with flow charts
- Disassembled and analyzed **Nokia 3110c cell phone**, understanding its architecture and identifying different integrated chips and their role in the functioning of the device
- Studied the working of the major functions of a cell phone and **8GB memory drive**

### IMAGE EDITOR

(Sep'10 - Nov'10)

Prof. Deepak B. Phatak (Computer Science & Engineering, IIT Bombay)

- Programmed an **Ez-Windows interface** to work as an image editor with use of C++ language
- Member of a **4 member team** in a group of 13 students
- Designed the software to perform **11 functions** and edit the image as desired by user

### LAPTOP INDUSTRY

(Oct'11 - Nov'11)

Prof. Haripriya Gundimeda (Humanities & Social Sciences, IIT Bombay)

- Exhaustive study of the **monopolistic** and **oligopolistic** form of market
- Analyzed the Market scenario (Past and Present), market strategies, market share and trends in demand

## EXTRA-CURRICULAR ACTIVITIES

### TECHNICAL ACTIVITIES:

- **Robotics:** Designed an Autonomous Line Following bot based on an AVR microcontroller to traverse a white line on a black surface
- **Trackmania:** Engineered a wireless remote control car that could run on a track full of hurdles like speed breakers, inclines and potholes on the track for Trackmania (technical event for freshmen at IIT Bombay in 2010)

### CULTURAL ACTIVITIES:

- **Kaladarshan**, the Annual Fine-Arts & Photography Exhibition of IIT Bombay
  - **Three sketches** were selected for the display during the exhibition
  - Aided in organization and smooth running of the exhibition;
- **3D Modeling**, the Fine Arts General Championship at IIT Bombay
  - Bagged the **2nd position** among 14 entries
  - Designed and constructed a model for the yet to be built IIT Bombay main gate
- **Pentafiesta**, the Annual Fest of Hostel 5, IIT Bombay
  - Participated in the **Wall Painting** event under which we painted the walls of the hostel pool room

**Other Interests:** Guitar, Literature, Skating