Saurabh Yuvraj Tembhurne | **08D07024**
Electrical Engineering | **UG Third Year(Dual Degree)**
Indian Institute of Technology, Bombay | **Male**
Specialization: Microelectronics | **DOB: 17-09-1991**

Examination	University	Institute	Year	CPI / %
Graduation	IIT Bombay	IIT Bombay	2011	7.69
Intermediate/+2	GVM'S SNJA	GVM'S SNJA	2008	86.83
Matriculation	A. J. DE. ALMEIDA HIGH SCHOOL	A. J. DE. ALMEIDA HIGH SCHOOL	2006	90.53

ACADEMIC ACHIEVEMENTS

*Awarded "**Dr. Ambedkar National Merit Award"** by the **Government Of India** for the meritorious performance in Science stream of class XII level examination.
*Awarded a **certificate of excellence** by the **Government Of Goa** (state government) for securing meritorious marks in the language of Sanskrit **in** Higher Secondary School.
*Awarded a **Certificate Of Merit** for meritorious performance in Secondary Examintion (Class X).

PROJECTS UNDERTAKEN

***Finfet Fabrication Project {currently in progress since summer 2010}**
Topic: Finfet design,Fabrication and performance optimization
Guide: Prof. S Duttagupta {Investigator at CEN } Software Used: **Sentaurus TCAD**

The project involved the design and fabrication of the finfet {MUG-fet}. As part of the project I have developed expertise in TCAD simulations , along with firm understanding of semiconductor device physics and VLSI technology . Currently we are working on Probabilistic CMOS technology , to achieve high performance with minimum energy.

*Currently working on my term paper on the topic **3-D Integration with CMOS Technologies** ,considering various 3-D integration approaches for increasing the package density and the performance of CMOS technologies.

***SMS Based control of electronic appliances {currently in progress since January 2011}**
Topic: Control the switching of electronic appliances at home using the available SMS service
Guide :Prof. Jayanta Mukherjee Skill:Phython programming , Power Line Carrier Communication

The project involves making a cost efficient system which can be put in home without making any major changes to the existing electrical networks in the home and which allows one to get updates about the switching of the home appliances via SMS and allow the same to be controlled remotely even when sitting miles away from home.

***Technical Projects**
1.)Topic: **Design of Microwave Integrated Circuits**
Guide: Prof. Jyanta Mukherjee
Skill : Design of high frequency circuits, Use of **ADS** (Advanced Design System)
Project involved design of Wilkinson power divider for Ghz frequency, which led to well understanding of the concepts of high frequency design and fabrication of these PCBs and well familiarity with the simulation software ADS.

2.) Topic: **Speaker Independent Speech Recognition**
Electronic Devices Used: DSP (Microchip Dspic30f5013), Audio Codec (Si-3000)

Logic / Algorithm Used: HMM (Hidden Markov Model)
It involved both **Electrical** and **Programming** skills.This speech recognition system was able to listen to any speakers' voice and respond accordingly .The best part is that it does not require pre training of the system.

3.) Topic: **Design and implementation of circuitry for finding Statistical mode**
It involved retrieving the data from the real world through a transducer and converting it into digital format through ADC and giving the multi-bit statistical Mode as the final output. The algorithm was implemented using synchronous counters.

4.) Topic: **Implementations of basic image processing algorithms using C++**
It involved processing a high quality bitmap (24,32) bit images by adding user defined Gaussian noise , then mean filtering , median filtering, using gradient and laplace for edge detection. The project was well supported with graphical user interface developed using visual c++ and can process 24 and 32 bit bmp images of any dimension.

5.)Done projects on **Linear Speed Calculator** using optoelectronic sensors, **Analysis of EEG** and MEG signals using MATLAB , Simulation of **spectrum formation through Prism** using C++, **Finding the number of Loops and Trees** in General Graph

TECHNICAL RECORDS .

* **Line Follower Bot.The bot was designed using IR Sensors and Logical Circuitry.**
*Bot for **Victory Drums competition**, for hitting the drum with manual control.
*Designed a **Radio Frequency** controlled bot based on **Differetial Driving Mechanism.**
*Designed **Printed Circuit Board** using **Eagle Layout Editor** for Digital Signal Processor
*Programmed **AVR family microcontrollers, Philips microcontroller.**
*Used **ANSYS** for designing a power transformer as part of Design Challenge.

ACADEMIC RECORDS .

***Key Electrical Courses:**

1.)**Introduction To Nano Electronics**	2.)**Microwave Integrated Circuits**
3.)**Physics of Transistors**	4.)Control Systems
5.)Digital Communication	5.)Digital Signal Processing
6.)**Electronic Devices And Ciruits**	7.)Microprocessors
8.)Communication Systems	9.)Probablity , random variables and stochastic processes
10.) **Nanoelectronics**	11.) Analog Circuits
12.)Electricity and Magnetism	14.)Digital System
15.)Electromagnetic waves	16.)Probablity and Random Processes

***Key Labs:**

1.)Analog Lab	2.)Electronic Devices Lab	3.)Machines Lab
4.)Digital Signal Processing Lab	5.)Control Systems Lab	6.)Microprocessor Lab
7.)Digital Circuits Lab		

*Successfully completed the six week workshop on **Intellectual Property Rights** organized by IPR chair of the institute.

PROGRAMMING AND SOFTWARE SKILLS .

* **Operating Systems :** Windows, Linux Ubuntu
* **Devlopment Languages :** C++, Phython ,Visual C++,Verilog, 8085 assembly, Latex, HTML
* **Packages : TCAD**, **MATLAB**,Hspice, SOLIDWORKS, Eagle Layout Editor , Multisim
* **Designing :** Adobe Photoshop, Adobe Dreamweaver, Visual Studio