YATISH TURAKHIA

UG Third Year
ELECTRICAL ENGINEERING
INDIAN INSTITUTE OF TECHNOLOGY, BOMBAY

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Examination	University	Institute	Year	CPI / %
Graduation	IIT Bombay	IIT Bombay	2011	9.01/10
Intermediate/+ 2	Central Board of Secondary Education	Rajhans Vidyalaya	2009	91.20
Matriculation	Central Board of Secondary Education	B.E.S International Vidyalaya	2007	95.00

ACADEMIC ACHIEVEMENTS:

- **All India Rank -197** IIT-JEE 2009 (out of 384,000 students)
- **All India Rank -255** AIEEE 2009 (out of 1,000,000 students).
- **School topper -95 %** CBSE X board exam 2007
- **Merit Certificate -98%** (Hindi Language) CBSE X board (top 0.1% of successful candidates)

RELEVANT COURSES:

(Until May 2012)

Computer Programming; Calculus; Ordinary differential equations; Data Analysis and Interpretation; Analog Circuits; Digital Systems; Electronic Devices and Circuits; Network Theory; Remote Sensing and Image Processing; Electrical Machines and Power Electronics; Signals and Systems; Economics ; Logic Design; Introduction to GIS; Communication Systems; EM waves; Microprocessors; Operating Systems; Foundations of VLSI CAD; Control Systems; Digital Signal Processing; Digital Communications; Physics of MOS transistors;

SOFTWARE SKILLS:

Programming Languages: C++, Python, 8051 and x86 Assembly, Verilog HDL, VHDL, SQL, WinAVR, Arduino, Javascript
Packages: MATLAB, SCILAB, Spice, Eagle
Documentation: HTML/CSS, Office

PROJECTS UNDERTAKEN:

Technology Mapping for Area optimization *Summer Project, May-June 2011*
(Guide: Prof. Sachin Patkar, IIT Bombay)
Given a canonical technology-independent description of a combinational circuit and a library of patterns, the algorithm generates a subject graph, partitions the subject graph into a forest of trees, and then using tree pattern matching generates a netlist of gates that minimizes total area. Same algorithm can be extended to delay and power optimization.

Van Ginneken Algorithm *Summer Project, May-June 2011*
(Guide: Prof. Sachin Patkar, IIT Bombay)
Given a wiring tree with legal positions for buffer insertion, the algorithm chooses the buffer positions such that the Elmore Delay of the tree is minimal.

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Dijkstra's Shortest Path Algorithm *April-May 2011*
Using the road network digital data of IIT Bombay campus, prepared a routing application that displays the shortest path between the start and destination points using Dijkstra's algorithm.

Reed Solomon Error Correction *April-May 2011*
(Part of Digital Lab course project)
Designed and developed the hardware of a Reed Solomon Algorithm based error correcting block (encoder and decoder) which is widely used method to correct random symbol errors in consumer electronics and digital transmission and broadcast systems..

Ultrasonic Flowmeter *Summer Project, May-July 2010*
(Under Electronics Club, IIT Bombay)
Conceptualised and designed an Ultrasonic Flow Measuring System using ATMEGA 32 microcontroller. This flowmeter uses a sing around method for detecting time lag between upstream and downstream pulses and has very high degree of precision.

Image Processing *Oct-Nov 2010*
(Part of Remote Sensing and Image Processing course project)
Used nearest neighbour and bilinear interpolation techniques to resize the images and create coarser resolution images.

Robocon IITB *August 2009*
(Intra-IITB Robocon competition)
Designed and developed a robot that can build a pyramid of thermocol blocks in the Intra-IIT Robocon competition 2009. This robot had placed highest no. of blocks in the allotted time of the competition.

Remote controlled racing car *Aug-Sept 2009*
Designed and developed a remote controlled mini-F1 car in the racing car competition organised by TechniC, IIT Bombay.

POSITIONS OF RESPONSIBILITY:

• **Department Academic Mentor:** Nominated as a part of Dept Mentorship Program to help academically challenged students to regain their focus in academics and clear the backlogs.
• **Team Manager** CS101 course project on Unique Identification Database and thus managed a team of 20 students. Our team scored 100% grades for the project.
• **Coordinator** of Mood Indigo and Techfest, the two biggest annual fests of IIT Bombay.
• **Captain, House Football and Volleyball team**, each of which secured 2nd position in the annual athletics meet of school in 2006 and 2005 respectively.

KEY EXTRACURRICULAR ACTIVITIES:

• **Swimmathon 2010**: Annual swimming endurance test, IIT Bombay. Length covered: 7.6 kms. Duration: 6 Hrs
• **Inter-Hostel Swimming GC, 2010**: 3rd Position :100m freestyle and 2nd position: 200m freestyle relay race .
• **Water Polo GC**: Member of the runner-up hostel water polo team in the water polo GC 2010-11.
• **NSO 2009-10:** Part of National Sports Organisation (Swimming), IIT Bombay for a year.
• **Winter School Workshop** - STUDe Club, IIT Bombay: Attended 4-day workshop to improvise skills in Matlab, LateX, HTML and microcontrollers.
• **MSSA sports tournament in 2006** - Part of the school volleyball team (district-level Inter-school).
• Active in several speaking events, both English and Hindi. Member of Speaker's Club in IIT Bombay .Winner of several speaking competitions including English extempore, English Debate, Hindi Debate and also as Best Speaker in these events at school.
• Successful participation and completion of Adventure Courses conducted by Young Explorers Club to Goa (7-day) and to Rajpipla (6-day) in 2004 and 2005 respectively.