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Electrical Engineering
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UG Third Year (B.Tech.)
Indian Institute of Technology, Bombay
Male
DOB: 23.07.1991

Examination	University	Institute	Year	CPI (out of 10)/ %
Graduation	IIT Bombay	IIT Bombay	2011	9.74 (out of 10.0)
Intermediate/+2	CBSE	Baldwin Academy	2009	96.20%
Matriculation	CBSE	Delhi Public School	2007	97.20%

SCHOLASTIC ACHIEVEMENTS

- Ranked 1st in the Department in my sophomore year on the basis of Cumulative Performance Index (CPI) for two semesters
- Currently ranked 7th in the institute out of over 750 students
- Ranked 4th in the Department among over 100 students
- Awarded honorarium for Academic Excellence for the year 2010-11 by the Indian Institute of Technology, Mumbai [2011]
- Secured a SPI (semester performance index) of 10.0/10.0 in the Autumn Semester at IIT Bombay [2010]
- Perfect CPI of 10 in all mathematics courses offered by the Institute
- Ranked 102 in JEE (Joint Entrance Examination) for admission into IIT among over 350,000 students [2009]
- Invited to attend INChOTC (Indian National Chemistry Olympiad Training Camp) along with 35 students across the nation for qualifying Indian National Chemistry Olympiad conducted by Homi Bhabha Centre for Science and Education (HBCSE) [2009]
- Awarded AP grades for outstanding performance in 3 Institute Courses
- Secured an All India Rank – 58 in the All India Engineering Entrance Exam among over 950,000 students [2009]
- Among the top 1% of the candidates selected for the Indian National Physics Olympiad conducted by HBCSE [2009]
- Invited to attend Science Camp organized by HRD Ministry, India [2008]
- Awarded Silver medal for exceptional performance in Mathematics by CSIR (Council of Scientific and Industrial Research), New Delhi
- Among the top 1% of the candidates selected for the Indian National Mathematics Olympiad conducted by HBCSE [2008]
- Awarded Gold Medal for securing Rank-3 in National Science Talent Search Examination held in over ten different nations [2007]

MAJOR TECHNICAL PROJECTS

COGNITIVE RADIO AND SPECTRUM SHARING

[Dec'11 – Present]

Guide: Prof. Abhay Karandikar

- Quantitative assessment of spectrum opportunities in India
- Proposal to develop spectrum sharing opportunities in 470-582 MHz
- Exploring spectrum sensing approaches and feasibility of geolocation whitespace database

SUPERVISED RESEARCH EXPOSITION

Guide: Prof. Animesh Kumar

[Mar '11 – Jul '11]

- Studied various approaches to signal modelling in general, classical and
- subspace based methods. Analyzed signals with finite rates of innovation, for perfect reconstruction

given a finite number of samples
o Extended subspace based methods for reconstruction to signals with finite rates of innovation in the presence of noise

MULTIPROCESSOR ARCHITECTURE

Guide: Prof. Sachin Patkar

[Jul '11 - present]

- o Working with multiprocessor architecture systems, modelling and understanding the BEEHIVE many core processor system
- o Aim is to develop a software tool chain for the BEEHIVE system based on the needs of the specialized task needed to be performed on the platform

MICROPROCESSOR ARCHITECTURE AND DESIGN

Guide: Prof. Sachin Patkar

[Jun '11 – Jul '11]

- o Studied the architecture of a basic 8-bit soft core microprocessor, PICOBLAZE
- o Analyzed the (behavioural) verilog implementation of PACOBLAZE, an open source configurable version of PICOBLAZE
- o Extended pacoblaze to support elementary Galois Field operations

ANALOG MODULE DESIGN

Guide: Prof. Maryam S. Baghini

[May '11 – Jul '11]

- o Designed an operational amplifier with comparator based Slew Rate enhancement Circuit in 90nm technology
- o Extended module to a wideband, high slew rate model for switching and linear applications
- o Optimized the entire module, for the given user defined specifications, to faster settling times
- o Analyzed and compared common architectures like folded cascade and telescopic for the operational amplifier given the constraints
- o Improved settling time of a 90nm, 1.2 V operational amplifier to almost 60% of its original value over a wide range of temperature

PASSWORD PROTECTED DATA SYSTEM

Guide: Prof. Udayan Ganguly

[Apr '11 – May '11]

- o Developed a data management system for multiple users, with a personalized password for each user
- o The hardware enabled the user to store and modify data and communicate with other users
- o Access to the system will be granted only on the successful match of the password
- o The entire module was implemented and run on the Spartan 3E FPGA board

BINARY DECISION DIAGRAM

Guide: Prof. Sachin Patkar

[Aug' 11 - Sept' 11]

- o Developed a C++ code for a simple Binary Decision Diagram
- o The simplified BDD was then extended to a generalized function with n -minterms

POSITION OF RESPONSIBILITY

- Member of the Student Advisory Body of the Academic Council at IIT Bombay
 - Representative of the Electrical Engineering Department in Institute body of Academic Affairs
 - Initiated the preliminary Department Curriculum Review
 - Organized 'Enthuse' to create awareness of the ongoing research at IIT Bombay among freshmen

[2011]

- *Working in collaboration with Student Mentors to adjust courses so that students with backlogs can pass out by the end of their normal schedule*
- Served as an Institute TA (Teacher's Assistant) for MA 105 (Calculus) in the Autumn Semester [2010]
- Served as a Correspondent of Youth Ki Awaaz - Mouthpiece for Youth, online news portal [2010]

SOFTWARE PROFICIENCY

- **Hardware Description Language** : Verilog, VHDL
- **Design and Simulation Software** : Cadence(Virtuoso), Xilinx, Quartus (by Altera)
- **Programming Languages**: C/C++, Java
- **Others**: Spice, MATLAB, 8085 Assembly, AVR, OpenCV, SQL

MAJOR COURSES

- | | |
|------------------------------------|--|
| • Digital Signal Processing | • Applied Stochastic Processes |
| • Probability and Random Processes | • Calculus |
| • Foundations of VLSI CAD | • Differential Equations |
| • Analog Circuits | • Data Structures and Algorithms |
| • Digital Communications | • Discrete Structures |
| • Digital Systems | • Computer Programming and Utilization |
| • Linear Algebra | • Microprocessor Systems |

(APs in bold)