Tuhin Sarkar
Electrical Engineering
Indian Institute of Technology, Bombay

09007030
UG Third Year (B.Tech.)
Male
DOB: 23.07.1991

Examination	University	Institute	Year	CPI / %
Graduation	IIT Bombay	IIT Bombay	2011	9.76
Intermediate/+2	CBSE	Baldwin Academy	2009	96.20
Matriculation	CBSE	Delhi Public School	2007	97.20

SCHOLASTIC ACHIEVEMENTS

- 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) [2009] along with 35 students across the nation for qualifying Indian National Chemistry Olympiad conducted by Homi Bhabha Centre for Science and Education (HBCSE)
- 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

MULTIPROCESSOR ARCHITECTURE

Guide: Prof. Sachin Patkar [Jul '11 - present]

- Working with multiprocessor architecture systems, modelling and understanding the BEEHIVE many core processor system
- 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]

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

ANALOG MODULE DESIGN

Guide: Prof. Maryam S. Baghini [May '11 – Jul '11]

- Designed an operational amplifier with comparator based Slew Rate

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

SUPERVISED RESEARCH EXPOSITION

Guide: Prof. Animesh Kumar [Mar '11 – Jul '11]

- Studied various approaches to signal modelling in general, classical and subspace based method
- Analyzed signals with finite rates of innovation, for perfect reconstruction given a finite number of samples
- Extended subspace based methods for reconstruction to signals with finite rates of innovation in the presence of noise

PASSWORD PROTECTED DATA SYSTEM

Guide: Prof.Udayan Ganguly [Apr '11 – May '11]

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

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* [2011]
  - *Initiated the preliminary Department Curriculum Review*
  - *Organized 'Enthuse' to create awareness of the ongoing research at IIT Bombay among freshmen*
  - *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