## ACADEMIC ACHIEVEMENTS

- Was selected for **Indian National Physics & Chemistry Olympiad** (INPhO) 2010 organized by HBCSE
- Was selected for **Indian National Astronomy Olympiad-Senior** (INAO-Sr) 2009 organized by HBCSE
- All India **Rank 954 in IIT-JEE 2010** among 455,000 aspirants
- Will Complete **Honor in EE (**Electrical Engineering Department**)** till November 2013
- Got **Certificate Of Merit in Mathematics** for being among top **0.1%** in All India Secondary School Examination 2008 (CBSE CLASS X)
- **Got Prabhat Khabar Partibha Samman and a Shield as honor** for cracking IIT-JEE

## INTERNSHIPS

- **Verification of Tensilica's Microprocessor** *(Summer Intern 2013 @* Tensilica*)*
  - Learned Tensilica Instruction Extention (TIE) language , System Verilog, and Perl
  - Understood Tensilica's Verification flow, Random TIE generator (RTG) & Xtensa's Architecture
  - Added new Instructions to RTG and made synchronous and asynchronous FIFO
- **SORS (Seat Occupancy Reporting System)** *(Summer Intern 2012 @CNC India)*
  - Designed a device (**Patent is filed for this device)** to send all details of buses (Like seat occupancy details, speed, longitude , latitude etc) to a **Server** using **Atmega640, GPS, GSM, Load Sensor** etc.
  - And got an appreciation to be published about this project in TOI and others Newspapers
- **Smart Helmet** *(Summer Intern 2012 @CNC India)*
  - Designed a device( **Patent is filed for this device)** using **Atmega32, Sensor, RF, LCD, and Relay** to ensure that bike will start only after wearing the helmet
  - Bike will stop in 1 minute after opening the helmet while driving. All current status is shown in LCD

## PROJECTS UNDERTAKEN

- **Home Automation** *from August 2012 till date*
  - Developing a device which will make house a **Intelligent House**
  - It will ensure the control of all electrical equipment (switches, AC, door, notification for pet animal outgoings etc ) in house using Smartphone. This device also support **Wi-Fi, Ethernet and Bluetooth**
  - I designed **PCB for CC430F6137 (**microcontroller system-on-chip with integrated **RF transceiver) and CC1101(**low-cost sub-1 GHz transceiver**)**, Wrote **C codes for interfacing CC1101** with Raspberry Pi and AVR, Interfaced with **MSP430** series of microcontroller, **various sensors** and eZ430-Chronos Board
- **Intelligent Brick Game** *Prof MB Patil & J. John (Spring Semester 2012)*
  - Developed a device up to 3 Levels for brick game (Just like Pong Game) using Deo-Nano Board (**FPGA and G-Sensor**) and **128X64 LCD** with **Verilog Coding**
  - Level-1, 2 and 3 have respectively 1 ball, 2 balls and 1 ball and 1 rotating stone with one paddle in each level. After successfully surviving for 1 minute level changes with increase in difficulty level

- **Technology Mapping** *Prof. Sachin Patkar* (*Autumn semester 2012)*
  - Involved reading graph from xml file, conversion into binary trees, pattern matching and optimal tree covering using **Python Graph-Tool library**
  - Used **Breadth For Search algorithm** to find optimal cost at each node followed by **back tracing** to choose from the best option in terms of cost at all nodes
- **ARM7 Equivalent Processor Design** *Prof. Virendra Singh (Spring Semester 2013)*
  - Designed a two-wide fetch, out-of-order superscalar version of ARM7 instruction set architecture equivalent processor using Verilog for writing RTL code for different modules
- **Pocket Tank Game** *Prof. D. B. Pathak* (*Autumn semester 2010)*
  - Implemented a **pocket tank game** using C++ and EzWindows API (for Graphical User Interface)
- **Child Locator** *Prof Girish Kumar*
  - Designed a device which will sound the buzzer if child(small) will go far from his parents (wireless Communication) using **CC1101 transceiver** , Atmega 8, buzzer and other devices
- **OPAMP Design** *Prof Anil Kottantharayil (Spring Semester 2012)*
  - Designed a five-staged Differential Operational-Amplifier with given specifications
  - Circuit was first simulated using LTSpice and then implemented on a breadboard

## SOFTWARE PROFICIENCY

- **Programming and Scripting language:** C/C++, Java, Python, Perl, Verilog, Bluespec, HTML,CSS,PHP
- **Programmable Board:** 8051,AVR ,MSP430,8085, Arduino , Raspberry Pi, Beagle Bone, FPGA,CPLD
- **Packages/ Simulator:** MATLAB, NgSpice, LTspice, Labview , Modelsim, iverilog, GTK

## EXTRA-CURRICULAR ACTIVITIES

- **CTARA: Billing and Metering Issues** *Prof. Priya Jadhav (Spring Semester 2013)*
  - In this project we investigated the big service problems to rural consumers regarding incorrect electricity bills, bad metering, irregular reading etc through doing **surveys in tribal, peri-urban and rural villages**
  - We focused on bills of each consumer, their problems and found out various problems and its solutions
- Won the inter hostel **Electronics Design Competition** , 2012
- Participated in the Workshop of 6 Weekends on **Intellectual Property Rights** organised by IPR Cell, IITB
- Selected for National Sports Organization (**NSO) Athletics**
- Worked as **Coordinator** in Techfest 2012, **Organiser** in Techfest 2011 and Mood Indigo 2010
- Made a **Remote Controlled Car** using basic RF Circuit and participated in Trackmania Competition, IITB
- Opened a **Optical Mouse** and studied its interior components and functionality for a mini course project

## KEY COURSES UNDERTAKEN

Advanced Topics in Computer Architecture, Processor Design, VLSI CAD , Advance Computing for Electrical Engineering, Microprocessor, Digital System, Image Processing, Digital Signal Processing, Digital Communications, Sensors in Instrumentation, Probability and Random Process, Complex Analysis, Linear Algebra, Information Theory