

## Major Projects

- **Analyzing Point Clouds - Bridge Inspection Project** (Dr. Sebastian Scherer, May 2013 to July 2013)  
(Visiting Summer Scholar at Field Robotics Center, Robotics Institute, Carnegie Mellon University)
  - Implemented algorithms to build a 3D model of bridge from laser scan data obtained from an UAV
  - Developed techniques to analyze coverage of bridge from different viewpoints
  - Presented poster at UG Research Symposium 2013
- **Autonomous Underwater Vehicle Project (AUV-IITB)** (September 2012 to Present)
  - Designed and developed an unmanned autonomous underwater vehicle (AUV) that localizes itself and performs realistic missions based on feedback from visual, inertial, acoustic and depth sensors.
  - Worked on navigation system : planning, localization and accurate maneuvering and developed algorithms for fusing and filtering data from various sensors and control vehicle.
- **Google Summer of Code Project** (May 2012 to August 2012)
  - Worked under organisation 'The GNU Project' on the project GnuCap (GNU Circuit Analysis Package)
  - Worked on a gnuCap language plugin for schematic files
  - Implemented a plugin to convert a schematic of a circuit into Verilog-AMS netlist and vice-versa.

## Academic Projects

- **epsilon-to-verilog: An Educational Hardware Compiler** (Guided by Prof. S. Patkar, Sep-Nov, 2012)
  - Developed a custom minimalistic high level language epsilon using python
  - Implemented scheduling and allocation to generate hardware description from control flow graph
- **Technology Mapping - VLSI CAD** (Guided by Prof. S.Patkar, EE677 - Autumn 2012)
  - Modeling the problem of technology mapping as a tree covering problem using pattern trees.
  - Implementing using python graph-tool library
- **Traveling Message Display** (Guided by Prof. M.B.Patil and J.John, EE214 - Spring 2012)
  - Worked in a team of 3 to display a scrolling message on an LED Array using FPGA DE0 NANO
  - My work involved writing verilog modules for taking input from the keypad and processing it.
- **Simulation of Micromouse** (Guided by Prof. Deepak B. Phatak, CS101 - Autumn 2010)
  - Led the team of 12 members in designing and solved  $n \times n$  mazes them for the minimum path using Bellman-ford algorithm in C++ and simulated using EzWindows GUI.

## Scholastic Achievements

- **All India Rank 61** of out 4.55 lakh students in IIT-JEE (Joint Entrance Examination) - 2010
- **All India Rank 3** of 18000 students in NEST (National Entrance Screening Test)-2010
- Secured **AIR 5** in the XXXIX National Mathematics Talent Competition (NMTC)-2007 conducted by Association of Mathematics Teachers of India (AMTI).

## Technical Skills

- **Programming Languages:** C++,Java,Python,Ruby      **Operating Systems:** Linux-Ubuntu, Windows
- **Tools:** Matlab, Mathematica, Scilab, Latex, Photoshop      **Web designing:** HTML, CSS, Javascript
- **EE tools:** Spice, Verilog-HDL, Verilog-AMS , Microcontrollers

## Additional Data

- **Homepage :** [www.ee.iitb.ac.in/student/~sksavant](http://www.ee.iitb.ac.in/student/~sksavant)
- **Github :** [www.github.com/sksavant](http://www.github.com/sksavant)