

S.R.Manikandasriram | Junior Undergraduate Indian Institute of Technology Madras



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EDUCATION

B. Tech & M. Tech in Electrical Engineering (Power Systems stream)	IIT Madras, Chennai	8.64/10 (after 4 th sem) <i>2nd position in stream</i>	2016
Class XII, C.B.S.E	Sri Sankara Sr. Sec. School, Chennai	95.80%	2011
Class X, C.B.S.E	Sri Sankara Sr. Sec. School, Chennai	95.40%	2009

INTERESTED FIELDS

- Control & Automation
- Mobile Robots
- Multi-Robot systems
- Artificial Intelligence & Planning

PROJECTS AND COMPETITIONS

- **Lunar Rover Challenge 2014** (held in IIT Madras by Team Indus as part of Shaastra) [Aug 2013 – Jan 2014]
 - Lead a team of 5 students and secured **1st place** in the Nation-wide competition
 - Adopted **Rocker-Bogie Mechanism** for all-terrain capability.
 - Implemented **real-time video transmission** and **wireless control** from laptop over Wi-Fi
- **ARLISS 2013** (held in Black Rock Desert, NV, USA) [Mar 2013 – Sept 2013]
 - Represented **IIT Madras** in an international collaboration lead by students of **Dr. William Singhose** of **Georgia Institute of Technology, USA** with teams from **Greece, Hungary** and **South Korea**.
 - Played a prime role in developing control algorithms for the “*Rescue Robots*”.
 - Developed a *memory-efficient Arduino library* for reading *position* and *heading* information from **GPS & Compass** module.
- **ABU Robocon 2013** (held in Pune, India) [Aug 2012 – Mar 2013]
 - Member of the **coding and electrical team** involved with developing control algorithms for the Autonomous and Manual robot which won “**The Fastest Job Completing Robot**” among over 60 teams from across India.
 - Implemented **PID algorithm** for the various maneuvers of the “*Omni directional*” Manual robot and “*Differential drive*” Autonomous robot.
 - Achieved **2D Coordinate Tracking** by combining inputs from 2 sensors – a **Trackball** and a **Magnetic Compass**.
 - Developed an **Arduino library** for interfacing with **PS2 Joystick**.
- **Smart Navigation** (CFI summer project under Robotics Club, IITM) [May 2012 – July 2012]
 - Conceptualized and prototyped a **differential drive navigation system** capable of **learning paths** through user input, from a hand-held device, and **autonomously returning** to **any** previously saved ‘*checkpoint*’ through the shortest route.
 - Developed an **original path routing algorithm** to determine the **shortest route** to the destination from the generated graph of learnt paths.
 - Implemented **wireless control** from a hand-held device for the robot using **RF transceivers**
- **Wrist-Flexer for cerebral palsy children** (under National Service Scheme NSS) [Sept 2011 – Mar 2012]
 - Conceptualized and prototyped a **low-cost portable easy-to-use** device to stabilize fine wrist movements.
 - The **elastic powered** device, which can be made from products available at home, helps in rehabilitation in early stages of extensor muscle problem.

RESEARCH EXPERIENCE

- Summer Internship in **NDE Lab** at **GE Global Research Center, Bangalore** [May 2013 – July 2013]
 - Studied the propagation characteristics of **high frequency Electromagnetic waves** through Coaxial Structures using **Numerical Simulations** performed in **COMSOL Multiphysics** software.
 - Developed a Simulation Framework for performing Magnetostatic in **ANSYS Multiphysics**.
- **Research Science Initiative** at **IIT Madras** (after completing 11th grade) [May – June 2010]
 - Selected as one among **40** top students from the city schools for a 5-week summer research camp accompanied by a mentored project at IIT Madras
 - Studied **Black Hole Physics** under **Prof. Prasantha K. Tripathy**, Dept. of Physics IIT Madras

SKILLS

- Experienced in Embedded systems programming. **Micro-controllers: Arduino, Atmega** and **MSP430 series. Single Board Computers: Raspberry Pi** and **BeagleBone Black**.
- Proficient in programming in: **Python, C, C++, Octave**
- Experienced in **Numerical Simulation** Software: **COMSOL Multiphysics** and **ANSYS Multiphysics** (using both APDL and GUI)
- Experienced in using **Linux (Ubuntu)** and developer tools like **git, vim etc...**
- Experienced in Web development: **Python-Django, JavaScript, Google App Engine, SEO etc...**

SCHOLASTIC ACHIEVEMENTS

- **1** of **2** students in the department to be awarded branch change for **outstanding academic performance** at the end of 1st semester.
- Secured **All India Rank 415(State Rank 13)** in **AIEEE 2011** among over **1.1 million** students from across the nation.
- Secured **All India Rank 8(State rank 1)** in **10th National Cyber Olympiad (2011)**
- Placed **National top 1%** among 38994 candidates in the National Standard Examination in **Physics (NSEP 2010)**
- Placed **Statewise top 1%** in the National Standard Examination in **Chemistry (NSEC 2010)**
- Placed in the **top 250** candidates among **4800** students across the nation in **Zonal Informatics Olympiad 2010** and qualified for **Indian National Olympiad in Informatics (INOI 2010)**

OTHER INTERESTS – WEB DEVELOPMENT

- **Club Head** of **The WebOps Club IITM** [May 2013 – Present]
 - Established the strong foundation for the Club and motivated & mentored a small team of freshmen (The WebOps Club Alpha Team) to empower them to take up **real-world projects** from Industries.
 - Ideated and organized the first ever **‘Wired-in Winter’** to instil a ‘developer’ culture in the institute.
 - Ideated and initiated the move to develop an Online Portal for Discussions, Resource Sharing and Project Management.
- Won **1st place** in **‘Ericsson Industry Defined Problem’** at Shaastra 2014 for implementing a **‘Ward Accountability Program’** using an Android app with a Google App Engine backend.
- Key member of Web Operations team involved in development and maintenance of the website of **Shaastra 2013**, Annual Technical festival of IIT Madras which gets **10000+ hits annually**.
- Developed an **Online Voice Conference Reservation System** for internal use in Infosys using **ASP** and **Oracle** in a span of **2 weeks** as part of **Catch Them Young 2008**.