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EDUCATION

Year	Degree	Institute	CGPA/%
2009-Present	B.Tech-M.Tech Dual(Mechanical Engineering)	IIT Madras	9.17/10
2009	Pre-University Board, Karnataka(XII)	SRN Adarsh College, Bangalore	85%
2007	ICSE(X)	Frank Anthony Public School, Bangalore	92%

PROFESSIONAL AND RESEARCH WORK

- **Dual-Degree project at IIT Madras**
  Research project guided by Professor C. Balaji and Professor P. Rajagopal. *From March, 2013*
  - Currently working on developing a remote structural health monitoring machine which uses thermal images (IR band) to autonomously scan for defects.

- **MITACS Globalink Scholar, 2013 at University of British Columbia, Kelowna**
  Visiting Undergraduate Research Assistant at the ACIS lab working under the guidance of Professor Homayoun Najjaran. *May-July, 2013*
  - Project 1: Built a multi-robot simulator for evaluating planning algorithms, in Linux environment by linking Matlab with ROS and Gazebo-3D simulator.
  - Project 2: Developed a low cost (˜$10) high voltage DC-DC and DC-AC converter for Digital Microfluidic Systems (aka Lab on Chip devices).

- **Summer Internship at GE John F Welch Technology Center, Bangalore**
  Summer Intern at non-destructive testing lab, GE Global Research *June-July, 2012*
  - Developed scripts in python using Abaqus 6.11 (finite element software) API's to simulate ultrasonic waves for different material boundaries, especially steel and water for the purpose of studying beam deviation in non-destructive testing.

- **ABU Robocon, 2011**
  Member of Robocon team representing IIT Madras at the nationals of ABU Robocon, 2011 Pune *September, 2010 - March, 2011*
  - Designed and programmed the electronic control for locomotion and mechanisms of the 4-wheeled transwheel manual robot. YouTube Link
  - In the following year mentored the Robocon 2012 team and improved on electrical system design. YouTube Link
  - Robocon 2013 was another major improvement as we added pneumatic systems. This year we won the distinction of being the team to solve the problem statement in least time. YouTube Link

- **Summer Internship at Indigo Quotient Labs, Bangalore**
  Summer Intern for a technology start-up Indiago Quotient labs, Bangalore *June-July, 2011*
  - Designed and prototyped an accelerometer based gesture controlled robot.

PUBLICATIONS

- Farrokhsiar, M., **Shehzaman, S.K**, and Najjaran, H, 'Robust Active SLAM: A Tube-based Approach.'
  Journal of Intelleigent and Robotic Systems
  This paper analyses the robustness of the conventional active SLAM methods and propose integration of the set-theoretic and information theoretic frameworks to increase the robustness of the information theoretic active SLAM methods. Matlab simulations and ROS/Gazebo experiments indicate the effectiveness of the proposed method. *Submitted*
- Farrokhsiar, M., **Shehzaman, S.K**, and Najjaran, H, 'A Robust Market-based Motion Planning and Control Scheme for Multi-robot Active SLAM.'
  This paper presents an auction based multi-robot motion planning based on the tube-based nonlinear MPC for the exploration purposes. *Draft*

SCHOLASTIC ACHIEVEMENTS

- Kishore Vaigyanic Protsahan Yojana (KVPY) 2008, awarded by Indian Institute of Science (IISc), Bangalore - 140 students were awarded this fellowship in India.
- Fellow of National Talent Search Examination (NTSE) 2006, awarded by NCERT board, India.
- Selected to the National Level of Indian National Chemistry Olympiad (INChO) and Indian National Astronomy Olympiad (INAO), 2009 the top 300 students from the country are selected for this stage.

SKILLS

- Engineering Software: MATLAB, ROS, Gazebo-3D simulator, LTSpice, COMSOL-Multiphysics, Python, Autodesk Inventor, Pro-E, SolidWorks, Abaqus6.11
- Programming Languages: C, C++ and Java
- Micro-Controllers: AVR family(AtMega16, AtMega128), Arduino
- Embedded Modules: GSM/GPRS, GPS, Bluetooth, Motor Drivers, Encoders, Xbee, Magnetic Compass, Accelerometers, PS2 joystick

THEORY and LABORATORY COURSES

- Mechatronic Systems
- Advanced Non-Destructive Testing and Evaluation
- Advanced Energy Conversion
- Turbo Machines
- Design and Optimization of Energy Systems
- Refrigeration and Air Conditioning
- Instrumentation and Control
- Design of Machine Elements
- Introduction to Machine Learning
- Linear Algebra and Numerical Methods
- Calculus 1
- Radiative Heat Transfer
- Design Synthesis
- Applied Mechanics Lab
- Heat Transfer
- IC Engines
- Computational Fluid Dynamics
- Machine Drawing Practice - CAD
- Electrical Sciences Lab
- Basic Electrical Engineering
- Differential Equations
- Calculus 2

EXTRA-CURRICULAR ACHIEVEMENTS

- One of the top 5 teams in India selected for the GE-Edison Challenge, 2012 held at JFWTC-GE, Bangalore.
- Runner-up of Ericsson-Industry Defined Problem Statement at Shaastra 2013, annual technical fest of IIT Madras.
- Participated at the Student Design competition as part of ASME, Student professional development conference 2013.
- Winner of Fix The android, Traffic Rush and Image Processing autonomous robotic events at Pragyan 2012, technical festival of National Institute of Technology, Trichy.
- Coordinator for Fire and ICe an RC car Design and Build event at Shaastra, 2011.
- Winner of Intra-Hostel Autonomous Robotics at IIT Madras, 2011.
- Volunteer for the National Service Scheme (NSS) as part of the Environmental Conscious group, 2009-2010.
- Second Runner-up for demonstrating a solar powered lift at Energizing Ideas conducted by Tata BP solar and The Energy Resource Institute (teri) in Bangalore, 2006.