Prashanth Ramadoss

Robotics Engineer and Enthusiast

Knowledge is like water. To be pure, it must be running. I intend to keep the flow perennial.

Education

2013–2015 **European Masters On Advanced Robotics**, *(EMARO)*, Double Degree Erasmus Mundus Program.

2nd year **Master in Robotics Engineering, M.E.**, *University of Genova*, Italy, CGPA: 102/110 or 94.6/100.

Course Topics - Cooperative Robotics, Software Architecture for Robotics, Flexible Automation, System Identification, Ambient Intelligence, Research Methodology

1st year **Research Master's degree in Advanced Robotics, M.Sc.**, *Ecole Centrale de Nantes*, France, CGPA: 80.2/100.

Course Topics - Modeling and Control of Manipulators, Mobile Robots, Non Linear Control Theory, Artificial Intelligence, Optimization Techniques, Mechanical Design of Robots, Computer Vision, Real Time Systems

2009–2013 **Bachelor of Engineering in Electronics and Communication, B.E.**, *Easwari Engineering College, Anna University, Chennai*, India, CGPA: 7.88/10, *First Class Honors*.

Experience

Academia

Nov 2017 - Present **Research Fellow**, *Dynamic Interaction Control Lab*, Italian Institute of Technology,Genoa, Italy.

Focused on the implementation of online floating base estimation and whole body dynamics estimation algorithms with the aim to enhance the performance of walking controllers and to achieve whole body torque control on a humanoid robot devoid of joint torque sensing.

Mar - Sep, 2015 **Master Thesis Research Intern**, *Dynamic Interaction Control Lab*, Italian Institute of Technology, Genoa, Italy.

Thesis, *Estimation of Foot Pose and Contact Wrenches for Legged Robots under Compliant Contact*, ***Platform:*** iCub Humanoid Robot.

This thesis was focused on robot dynamics and estimation methods for an improved estimation of the pose of the robot's feet and the wrenches it is subjected to during a compliant ground contact for improved dynamic stability and balancing.

Industry

Sep 2016 - Apr 2017 **Post Graduate Engineer Trainee**, *The Hi-Tech Robotic Systemz Ltd.*, Pune, India.

- Developed perception modules by integrating LIDARs and cameras for terrain mapping of environments.
- Developed low-level control and obstacle detection modules for a remotely operated mobile manipulator.
- Developed parsers/drivers for LIDAR, GNSS/INS units, Motor controllers, chemical sensors.
- Experience with SICK LMS and TiM LIDAR sensors, Advanced Navigation Spatial and Spatial Dual GNSS/INS units, Roboteq motor controllers, Intel CAPA SBCs.

Apr - Aug 2016 **Research Intern**, *The Hi-Tech Robotic Systemz Ltd.*, Gurgaon, India.

- Performed system integration and developed low-level control modules, being part of a team developing autonomous navigation and perception algorithms for a driverless bus in ROS environment by integrating LIDAR, GNSS/INS and drive-by-wire systems.
- Provided maintenance and technical support for mobile manipulator robots at the client site, being part of a team developing remotely operated unmanned ground vehicles.

Projects

2015 **Human Robot Cooperation with the aid of Wearable Sensing**, *University of Genoa*, Italy, ***Platform:*** *Baxter from Rethink Robotics*.
Demonstrated a proof-of-concept for Human-Robot Interaction(HRI) in industrial environments by programming the robot to react to user gestures. This was done by integrating a wearable sensing based gesture recognition framework with a motion planning framework.

2014 **Design of a 2-DOF Pan-Tilt shooter for dynamic tracking of objects**, *Ecole Centrale de Nantes*, France, ***Resources:*** *Dynamixel Servos*.
Designed a 2-DOF manipulator which tracks moving objects in the field of view of a camera attached to its end-effector. This project was aimed at implementing a lab tutorial for students by integrating the knowledge of manipulator modeling, computer vision, control and robot programming methods.

2014 **Industrial Robot Programming using serial manipulators**, *Ecole Centrale de Nantes*, France, ***Platform:*** *Puma 600 and RX90*.
Followed a Val/V+ programming course to program serial manipulators to manipulate objects in an industrial setup.

2013 **Smart Helmet**, *Anna University*, India, ***Resources:*** *Force Sensitive Resistors and Arduino*.
Implemented an electronic design for a helmet directed towards accident prevention and contacting emergency services in case of accidents.

Workshop and Conferences

2015 **Robot and Human Interactive Communication**, *IEEE International Symposium*, Kobe, Japan.
Acceptance of an Interactive Sessions paper titled *"Human-Robot Cooperation: is Wearable Sensing the Way to Go ?"*.

2014 **Robot Competitions Kick Innovation in Cognitive Systems and Robotics(RoCKIn) Camp**, *Sapienza University*, Rome, Italy.
Attended workshop covering robotic applications in industry.

Skills

Programming	C++, MATLAB, Python
Software	SIMULINK, ROS, YARP, Git, SVN, Gazebo, OpenCV
OS	LINUX, Microsoft Windows
Editing	Microsoft Office, LaTeX, LibreOffice

Languages

Tamil	**Mother Tongue**	
English	**Medium of Education**	
French, Hindi	**Intermediate**	*Limited Proficiency*
Italian	**Basic**	*Basic words and phrases only*

Interests

Football	Mostly never says no to a football game.
Gaming	Loyal member of PlayStation Family.
Hiking	Enjoys occassional hikes for the panoramic views and as a test of fitness.

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