Rishi Khajuriwala

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Objective: Seeking a Summer internship/Co-op in Robotics

Education

Worcester Polytechnic Institute (WPI), Worcester, MA
Master of Science in Robotics Engineering, GPA 4.00/4.00, May 2019

Gujarat Technological University (GTU), Ahmedabad, India
Bachelor of Engineering in Mechatronics Engineering, CGPA 7.28/10.00, June 2016

Related Courses
Robot Dynamics, Foundations of Robotics, Synergy of Human and Robot, Robot Control*, Artificial Intelligence*, Soft Robotics*, Machine Learning (Coursera)*. * = expected to complete by May 2018

Skills

Python, MATLAB, ROS, GNU Octave, Vicon Motion Capture System(Mocap), SolidWorks, Arduino, PSPICE, MULTISIM, FANUC CNC Trainer, PROTEUS, LATEX, Microsoft Word, Microsoft Excel, Microsoft PowerPoint, Microsoft Outlook.

Experience

Trainee Engineer, Chokshi Graphics, Ahmedabad, India, May 2016 – June 2017
- Designed Hydraulic Platform for easy loading and unloading of paper reels using SolidWorks.
- Integrated the Hydraulic system for the platform to lift weights up to 3 tons.
- Supervised the Prototyping of the platform.
- Integrated the Platform with the already available machines in the factory.

Projects

Directed Research, WPI, September 2017-Present
- Designed and Prototyped a low cost robotic system to aid in the rehabilitation of stroke patients in a team of 7.
- Developed the control system for the robotic arms in MATLAB.
- Developed an upper body template for the Vicon system.
- Used the generated motion patterns from Vicon system, applied DMP to the patterns.
- Debugged the hardware and software of the robot arms.
- Develop Motion AI for planning motion trajectories of the robotic arms.
- Develop new interactive games for the rehabilitation.
- Plan to publish a research paper for IROS 2018

Robot Dynamics, WPI, September-December 2017
- Developed a dynamic Virtual World using RVIS and Gazebo in ROS, which can be used for simulating a real-world situation for Robot navigation.
- Applied A star algorithm in python and applied it to stimulate the turtle bot in the Gazebo virtual world.
- Learned various path planning algorithms.

Final Year Project, GTU, June 2015-May 2016
- Designed and prototyped Semi-Automated Humanoid Robotic Limbs using SolidWorks.
- Used inverse pendulum and Zero Moment Point (ZMP) to overcome locomotion issue in biped robots.
- Designed and prototyped the lower limb exoskeleton of the humanoid by using artificial air muscles and developed in-house pneumatic air muscles to lower the cost of the air muscles by 70%.

Combat Robots, GTU, December 2013-May 2016
- Led a college team of 10 members to compete in "Robowars" events in national and international tournaments and in total won 12 awards for the College.
- Engineered robots of weights: 60 kg, 45 kg, 30 kg, 25 kg and 15 kg using Solid Works for Designing, Arduino, Solid state relays, etc.
- Designed a first-of-its-kind Single Piece Single Extrusion Snail Disk and Snail Drum to be used as weapon.

Microprocessor, GTU, March-May 2015
- Created a cube 4x4 using multicolor LEDs and made many patterns and designs by controlling the Cube with Arduino.
- Competed in the ISTE project competition and won Best Design Award.

Independent Project, GTU, January-April 2013
- Developed a robot using arrays of IR sensors and controlled the robot to follow black line.
- Developed robot can be used for designing simple AGVs and various autonomous vehicles.
- Competed in the ISTE project exhibition and participated in Line Follower at Udaan-2013 at BVM

Leadership

Organizer, Robotics Project Club, GTU, April 2014- May 2016
- Organized and delivered various Workshops for high school and college students on Robotics Engineering.
- Advised and guided students to complete their technical projects by helping them debug problems they face with their projects.

Team Lead, Food Committee, Annual Function, GTU, February-April 2016
- Led a team of 25 people to manage the catering of the university annual function which was attended by 3000 students.
- Partnered with Security committee to systematize the entire security of the event.

Organizing Committee Head, International Conference on Innovations in Automation and Mechatronics Engineering, GTU, February 2016
- Led a team of 40 students to host an international conclave attended by professors from international universities