Rahul Rawat

3B Mechatronics Engineering

rahulrawat.net
r2rawat@uwaterloo.ca
(226) 989 8883
ca.linkedin.com/in/rahulraw/

Technical Skills

Languages: C/C++, Python, MATLAB, Bash, Assembly, LabVIEW, Simulink, VHDL , XML
Frameworks: ROS, OpenCV
Software: UNIX/Linux, Gazebo, LabVIEW, AutoCAD, SolidWorks, Eagle, Simulink, Flask
Hardware: ARM Cortex, Atmel, PIC, Intel Quark, Arduino, Raspberry Pi, Altera FPGA
Tools: Git, Vim, Tmux, Eclipse, Visual Studio, Sublime, Brackets, Debhelper

Work Experience

Robotics Application Engineer / Software Developer (Fall '15)
Clearpath Robotics Inc.

- Developed Open Source Software Debian Packages and hardware to use KinectOne on the PR2 Humanoid Robots
- Proposed and implemented new concepts and technical designs for future self-driving vehicles and autonomous solutions
- Prototyped and tested new systems and sensors such as LIDARs, encoders and IMUs for use on autonomous robots
- Integrated hardware components for vehicles including the Husky and Jackal and developed firmware for sensor interface

Controls and Robotics Engineer (Winter '15)
Magna International Inc.

- Developed embedded systems and user interfaces on Windows CE to monitor data from vision systems
- Created robotic communication protocols for data transfer to central databases
- Performed rapid prototyping of smart drilling system to eliminate manufacturing defects

System Integration Engineer (Spring '14)
Wilco Machine & Mold Inc.

- Automated sealing and packaging machinery using PLCs and Ladder Diagrams
- Designed precision parts such as sealing plates and vacuum chambers
- Performed field testing of real time systems in food manufacturing processes
- Machined aluminum and stainless steel parts using manual lathes, mills and machine tools

Software Tester (Fall '13)
CryptoMill Technologies Inc.

- Tested full disk encryption software and identified potential software bugs
- Designed and Implemented new test cases to assess software functionality
- Built database to aid in performing and logging software tests
- Aided in company graphic design and advertisement of new encryption products

IT Intern (Winter '13)
Purolator Inc.

- Created and managed multiple databases to automate corporate data
- Implemented IT solutions for corporate management and executives

Education

University of Waterloo
Candidate for Bachelor of Applied Sciences
Honours Mechatronics Engineering (Graduating '17)

Projects

See more at rahulrawat.net/projects.html

Mars Rover Robotics Student Design Team
Team Lead

- Developed all terrain drive/steering system and controls for precision robotic manipulators
- Developed real time electrical safety system using relays and microcontrollers
- Designed PCB IO-shield for onboard Arduino hardware using EagleCAD
- Project managed a team of 4 tasked to design and manufacture a 5 DoF robotic arm capable of lifting 5 kg

Home Security Robot Hack Princeton
devpost.com/software/icubot

- Winner of Best Microsoft Hack
- Developed robotics framework for home intrusion robot powered by a KinectOne, Windows laptop and Raspberry Pi robot. When the robot detects an intruder, it alerts the home owner using Twitter and chase after the culprit.

Razbot2 Open Source Platform
github.com/razbot2

- Developed complete Open Source Robot for newcomers to learn robotics. Robot includes DC motors, custom motor shield, Raspberry Pi 2 and a camera displaying the vehicle's view. The razbot2 is capable of connecting to Wi-Fi and hosts a website displaying live camera feed.

AdventureVR Hack The North
adventurevr.co

- A telepresence system that allows for a user to immerse himself into a far off location through telepresence using an Oculus Rift and built-in IMU.

Interests

- Playing with robots and electronics
- Contributing to Open Source
- Attending Hackathons
- Weight training and Tennis