Rahul Rawat

3A Mechatronics Engineering

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Technical Skills

Languages: C/C++, Python, MATLAB, Assembly, LabVIEW, HTML/CSS, VHDL, G
Frameworks: ROS, OpenCV, Twitter Bootstrap
Software: Linux, Gazebo, LabVIEW, AutoCAD, SolidWorks, Eagle, Simulink, Windows Embedded
Hardware: ARM Cortex, Atmel, PIC, Intel Quark, Arduino, Raspberry Pi, FPGA
Tools: Git, Vim, Tmux, Eclipse, Visual Studio, Sublime, Brackets

Work Experience

Controls and Robotics Engineer at Magna International Inc. — Winter 2015

- 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 faults

System Integration Engineer at Wilco Machine & Mold Inc. — Summer 2014

- Automated sealing and packaging machinery using Unitronics PLCs and Ladder Diagrams
- Developed Arduino/PLC temperature management system that can be accessed via internet
- Rapidly prototyped and field tested embedded real time systems in food manufacturing processes
- Designed and machined high precision mechanical parts including sealing plates and vacuum chambers

Software Tester at CryptoMill Technologies Inc. — Fall 2013

- Tested full disk encryption software and determined potential software bugs
- Designed and Implemented new test cases to assess software functionality
- Setup a local server interactive database to aid in performing and logging software tests
- Designed graphics and advertisements of new encryption products

IT Intern at Purolator Inc. — Winter 2013

- Created and managed multiple databases to organize and automate corporate data
- Proposed and implemented IT solutions for corporate management and executives
- Produced various support documentations for electronic dashboards to be used by developers

Personal Projects and Collaborations

See more at rahulrawat.net/portfolio.html

Mars Rover Team Student Design Team

Role: Team Lead, Controls & Embedded Developer

Developed all terrain drive/steering system and controls for precision robotic manipulators. Implemented real time electrical safety system using relays and microcontrollers. Designed PCB IO-shield for onboard Arduino hardware.

Autonomous Robot Racing Team Student Design Team

Role: Controls and Autonomy Software Developer

Assembled a medium sized robotic car with FitPC (Ubuntu) and Arduino. Used LIDAR sensors and encoders to collect data from the environment. Applied serial communication to integrate remote control of the car. Built LCD interface for testing. Developed Trajectory Rollout path planning algorithm.

Collaborative Desktop Arm Personal Project

Designed, manufactured and programmed desktop arm that can assist in sorting a messy desk or aid in fine motor movements such as drawing and soldering.

Pacman Artificial Intelligence Agent Personal Project

Developed AI agent using Adversarial and Expectimax Search algorithms to defeat the classic Pacman game. Design of agent was focused on achieving balance of reliability and speed.

Education

Bachelor of Applied Sciences, Honours Mechatronics Engineering
Expected to graduate in 2017 from University of Waterloo, ON

Interests

Robotics, IoT, Wearables, A Capella, Artificial Intelligence, Strength Training