James O'Donoghue

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EDUCATION:

Rochester Institute of Technology, Rochester, NY
Bachelor of Science in Computer Engineering, May 2013

EXPERIENCE:

Maidbot, Robotic Software Engineer – September 2017-Present
Working with a team to develop and test the software stack for Rosie, ranging from firmware development to developing web services for Rosie.

Emerson Process Management, Software Engineer – March 2015-September 2017
Working with a team on the embedded control aspect for the DeltaV system. Most of the daily tasks cover either system design/implementation, system integration/bug fixes or development tools. The control platform is based on QNX real time operating system with the main functionality of the system written in C++, with a few other tasks being done in C or C#.

Systra Consulting, RAILSIM Manager - September 2013-Februrary 2015
Focused on the modernization of RAILSIM and usability improvements in the latest version of RAILSIM. The majority of the work focused on developing user stories and talking to clients about the functionality that is currently needed and will be required in the future, such as PTC and CBTC.

Systra Consulting, Programmer - June 2013-September 2013
Rewrote and optimize sections the Load Flow module of RAILSIM. Mainly fixed bugs and made optimizations to the software so it ran smoother and more efficient.

RE2, Inc, Intern - December 2011-May 2012
This internship consisted of working on three distinct projects, human to robot interface, robotic door opener, and various computer vision projects. The human to robot interface consisted of different parts ranging from image processing with OpenCV to puppet arms that included haptic feedback. The second project consisted of having a robotic arm locate a door and proceed to open it. This was accomplished using LIDAR and various other sensors. The final project was using LIDAR and stereoscopic images with the help of the Point Cloud Library to locate items on a table for the robot to pick up.

Anaren Microwave, Intern - March 2011- July 2011
This six month internship consisted entirely of embedded C programming on MSP430 microcontrollers. Every task while working here consisted of wireless communication between microcontrollers, either to test network stability, different protocols or different antenna designs. Communications could be happening between pairs or a mesh network depending on the requirements of the project.

Systra Consulting, Intern - Summer 2010
Reviewed technical documents for transit systems.

SOFTWARE/HARDWARE:

Languages: C, C++, VHDL, C#, Java, Python, Perl
Software: Mentor Graphics, Code Warrior IDE, Cadence OrCad, Pspice
Hardware: FreeScale Microcontrollers, TI Microcontrollers, Various sensors(LIDAR, Temperature, Light), Various Motors(Stepper, DC)

School Projects:

TigerBot: Designed and built bipedal humanoid robot to complete various tasks such as walking, balancing, and standing after falling down.

K60 Modules: Designed and coded several K60 tutorial modules to be used as introductions to coding on the K60 microcontroller.

VLSI: Created schematic and layout of four bit multiplier with built in self-test. Verified designed produced correct results using test vectors and the BIST.

Digital System Design: Used VHDL to design and test complex circuits on an FPGA.

Electronics Lab: Simulated, built and tested various circuits to verify theoretical calculations.

Real-Time Embedded Systems: Various projects dealing with HCS12 microcontroller and various other embedded systems

Robotics: Various labs programming 4 wheeled robot to complete specified tasks

Robotics Project: Designed and built a four degree of freedom robotic arm. Derived and coded inverse kinematics of the arm.

Assembly Language: Created assembly programs to utilize HCS12 microcontroller.

Interface and Digital Electronics: FreeScale K60 microcontroller and circuit design.

IDE Project: Designed and built heartbeat sensor using various filters and the K60 microcontroller.