Christopher Earley
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Objective:
Full time engineering position relating to electromechanical system design with a focus on digital hardware and/or embedded software.

Education:
Worcester Polytechnic Institute, Worcester, MA
Bachelor of Science with Distinction in Robotics Engineering, GPA 3.36, May 2012

Related Courses:
Unified Robotics I-II, Artificial Intelligence, Statics, Embedded Computer Systems Design, Digital Circuits, Systems Programming, Object-Oriented Design, Calculus I-IV, Mechanics, Software Development

Programming languages: Python, C/C++, Java, JavaScript
Applications: Git, Jupyter, Altium, EAGLE/KiCad, Fusion 360, Visual Studio, Code Composer Studio, Unix Utilities
Operating systems: Linux, BSD, Windows

Related Experience:
Electrical Engineering Co-op, iRobot**,** May 2010 – August 2010

- Designed and implemented an automated electrical apparatus for stress testing motor driver assemblies used in the iRobot SUGV platform.
- Performed diagnostics, troubleshooting, and repair of SUGV main boards. This included debugging FPGA firmware, hardware fault investigation using oscilloscope signal analysis, and SMD soldering/rework.

Electrical Engineering Co-op, QinetiQ North America**,** June – December 2009

- Designed, documented, and released a battery-powered dual-channel power supply system for use in TALON robot production that can communicate with a computer, or similar device, using SCPI to independently change output voltages through the use of a custom-designed PCB, a dual channel DAC communicating over SPI, and software written in PIC-C.
- Created and released multi-level technical documentation for numerous QinetiQ NA products and assemblies.
- Conducted thorough research and testing for TALON and TALON related subsystems that culminated in the creation and release of either a technical bulletin or documentation change.

Related Projects:
- **BeagleBone Haptic Cape:** Conceptualized, designed, and fabricated an open source development board for the exploration of haptic neuroprosthetics compatible with the BeagleBone brand of single-board computers. Alongside the daughter board itself, a full set of documentation and support libraries were created to facilitate quick system development. First place winner of the 2016 Hackster.io BeagleBone IoT Contest.
- **Autonomous Robotic Mapping System:** Designed & programmed an autonomous ground vehicle in a team environment to navigate a randomized space while generating a live map of the surrounding geometry. This project involved the use of Java desktop application design, Kalman filtering, occupancy grid mapping, sensor integration, and waypoint navigation.
- **Embedded Gas Pump**: Implemented a fully-featured emulation of a self-service gas station pump on a MSP430 microcontroller using a mixture of C & assembly code with multiple stages of user interaction using a 10-key input, selection buttons, and a descriptive bitmap display.