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, Assembler, JavaScript
Applications: Git, Matlab, Altium, EAGLE, AutoCAD, Atom, Eclipse, 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 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.
- **Interactive Robotic Musical Art Installation:** Worked in a multidisciplinary team to conceptualize and implement an interactive installation that involved the use of image processing, stepper/DC motor control, audio generation algorithms, and visual design to create an engaging user experience that converted physical user actions to music. It was temporarily installed in the Boston Museum of Science during their 2011 Robot Block Party.
- **Gas Pump Clone**: 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.