Christopher Woodall

(631) 804-9822 • chris@cwoodall.com • http://cwoodall.com

Technical Skills

Hardware: PCB layout and schematic capture in Altium, FPGA design in VHDL and Verilog (Xilinx), soldering, microcontrollers (ARM, MSP430 and PIC32), simulation (LTSpice and Cadence SpectreRF), serial communication protocols (CAN, UART, Ethernet, USB, I2C, SPI).

Software: C, C++, Python, Bash, Linux, Windows, Git, SVN, MySQL, GUI toolkits (Wx), unit testing, LaTeX, Javascript, HTML, and CSS.

Experience

Embedded Systems Engineer December 2015 - Present
Barrett Technology, LLC Newton, MA

- Writing firmware in C for ARM Cortex-M series microprocessors in motor control applications.
- Maintaining and developing GUI tools with Wx and Python for testing, and configuring hardware modules.
- Writing software and firmware to communicate reliably using CAN and CANOpen.
- Creating distributable Windows executables of python applications.

Electrical Engineer II June 2014 - November 2015
Vecna Technologies, Inc. Cambridge, MA

- Lead firmware and electronics designer for a lithium-polymer battery pack for mobile robotics.
- Responsible for electronics design, integration, and FCC/CE compliance for a vitals enabled patient self-service kiosk.
- Developing automation scripts, troubleshooting, and maintaining Altium Designer to improve process efficiency.

Electrical Engineering Intern January 2011 - June 2014
Boston University, Electronic Design Facility Boston, MA

- Designed and assembled scientific instrumentation and test equipment for particle physics research experiments.
- Focused on FPGA design using VHDL with Xilinx ISE, and PCB layout using KiCAD and Altium.

Research Assistant May 2013 - September 2013
Boston University, Applied Electromagnetics Group Boston, MA

- Designed an isolated addressable DAC cell to add fine adjustment precision to a low resolution high-voltage DAC.
- Led PCB layout and firmware development for a 16-channel isolated DAC to verify cell design.

Education

Bachelor of Science in Electrical Engineering, Magna Cum Laude May, 2014
Boston University, College of Engineering Boston, MA

- **GPA:** 3.76 out of 4.0
- **Related Coursework:** Power Electronics, RFIC Design, Digital Signal Processing, and Embedded Systems.

Selected Technical Projects

Canary, Environmental Sensor Monitoring BLE Node for BattleHack August 2014

- An Arduino-driven sensor node which communicates with an Android device over BLE to record environmental data.
- Led hardware and communication interface design to allow for rapid integration during the 24 hour event.

dDOSI Digital Spectrum Analysis Unit, Senior Design Project September 2013 - June 2014

- Modulates 6 near-IR lasers between 50 MHz and 500 MHz, and digitizes the resultant waveforms after passing through human skin to classify the health of a tumor.
- Lead hardware designer for waveform digitization, Zynq system-on-chip integration and PCB design.
- Responsible for managing technical requirements and verification testing of the full system.

Communications and Trigger Generation Test Board for LHC Research Group January 2012 - July 2013

- Designed a communications test board for the Compact Muon Solenoid group at the Large Hadron Collider.
- Designed a 10/100 Ethernet MAC in VHDL to interface with an application-level IP core and PHY IC.

Honors and Licenses

KC1DMK, Amateur Radio Technician Class — March 2015
Second Place Team, PayPal BattleHack Hackathon — 2014
Design Excellence Award, Boston University ECE Senior Design — 2014
Octopart and Tessel Awards, MakeMIT Hardware Hackathon — 2014
President, BUILDS (University Hackerspace) — 2012-2014
Electronics Lead, BU Rocket Propulsion Group — 2012-2013