Christopher Woodall

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

Technical Skills

Software: C, C++, Python, C#, Bash, Linux, Git, SVN, MySQL, GUI toolkits (Wx), unit testing, Rust, Javascript.
Hardware: PCB layout and schematic capture in Altium, FPGA design in VHDL, soldering, ARM, MSP430, AVR, PIC32, simulation (LTSpice), debugging, and serial communication protocols (CAN, UART, TCP/IP, USB, I2C, SPI).

Experience

Sr. Firmware Engineer February 2019 - Present
Apricity Somerville, MA and Bend, OR

- Writing firmware in C/C++ for IoT, medical and bluetooth audio devices.
- Managing software projects for clients.
- Implementing version control best-practices, procedures and reviews to improve code quality.

Sr. Embedded Systems Engineer December 2015 - February 2019
Barrett Technology, LLC Newton, MA

- Writing firmware in C and C++ for ARM Cortex-M4 microprocessors for motor control and medical applications.
- Writing processes and scripts for software configuration, manufacturing and development for a FDA regulated device.
- Architecting and implementing controls and communications for a 3-DOF robot with 6 seperate firmware nodes, and high-level controls over TCP/IP from a C# library.
- 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.

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 schematic, PCB and firmware for an isolated DAC cell to add fine-adjustment to a high-voltage DAC.

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

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

- Modulates 6 near-IR lasers from 50 MHz to 500 MHz, and digitizes the resulting waveforms after passing through human skin to classify tumors.
- Lead hardware designer for waveform digitization, Zynq system-on-chip integration and PCB design.

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.