

Christopher Woodall

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Technical Skills

Software: C, C++, Python, C#, Bash, Linux, Windows, Git, SVN, Simulink, MATLAB, GUI toolkits (Wx, QT, Unity), Gitlab CI/CD, unit testing.
Hardware: Soldering, ARM Cortex-R/M, MSP430, AVR, PIC32, debugging, and serial communication protocols (CAN, UART, TCP/IP, USB, I2C, SPI).

Experience

Sr. Embedded Software Engineer - Propulsion

October 2019 - Present

BETA Technologies

Burlington, VT

- Creating Continuous Integration (CI) pipelines for releasing, testing and integrating Simulink models.
- Developing control laws, plant models and tests in Simulink and MATLAB.
- Implemented and integrated sensorless motor control algorithm.
- Developing controls algorithms, fault detection and software for 300kW Permanent Magnet Motors.
- Testing new electric propulsion unit designs, working closely with the motor development team to validate design and controls.
- Writing libraries for peripherals and STM32F4/F7 processors to be used across all projects.

Lead Embedded Software Engineer

February 2019 - October 2019

Apricity

Somerville, MA and Bend, OR

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

Sr. Embedded Software 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, in accordance with IEC62304.
- Architecting and implementing controls and communications for a 3-DOF robot with 6 separate 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.

Technician

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.

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

Patent, High Performance Current Sensing Architecture For Brushless Motors, 2020, Patent Number: 20200153372

Patent, Method of Propulsor Management in Electric Aircraft, 2022, Patent Number: 20220411051