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## TECHNICAL SKILLS

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**Programming Languages:** C, Python, C#, C++, Java, Verilog, ROS

**Software:** STM32Cube, CCS, Altium, VisualStudio, freeRTOS, Git, Linux, BLE, LTspice, Microsoft Office.

**Hardware:** Logic Analyzer, Oscilloscope, VNA, Signal Generator, Digital Multimeter, 3D printers, CMOS Cameras, Microcontrollers, Laser Cutters, SMD Soldering

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## WORK EXPERIENCE

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**Witricity**, Watertown, MA

April 2024 - October 2024

Firmware Engineer

- Wrote and integrated a service in C to control and monitor the contactors that safely connect and disconnect the vehicle's 800V battery to the vehicle's wireless power transfer module during charging
- Developed Python Qt UI to facilitate, monitor, and control closed loop CAN communication between the wall charger and the vehicle mounted wireless charging module
- Characterized and presented CPU bandwidth and memory utilization of the TI MCU for vehicle power control

**Veranex**, Providence, RI

June 2021 - April 2024

Firmware Engineer II

- Designed flight path architecture and wrote motor control software for 8'x5'x10' high precision XYZ gantry using a robotic arm to delicately transport lab equipment. Worked closely with the mechanical team to ensure tight tolerances and reduce error of gantry motion
- Scaled existing RTOS firmware and Python UI from a single cartridge architecture to up to four simultaneous cartridges for patient sample preparation. Improved existing code by implementing features such as StallGuard
- Designed, assembled, and programmed a PCB to control multiple valves and sensors via RS232, I2C, and SPI to automate fluidics system testing. Built accompanying C# WPF application for user control
- Collaborated with senior engineers to develop firmware architecture for a wearable diagnostics device. Then implemented the architecture and wrote low level sensor drivers for Cortex-M7/M4

**Teradyne**, North Reading, MA

July 2020 - June 2021

RF Hardware Engineer

- Wrote Python programs to automate bench testing, data collection, and data analysis
- Characterized and debugged individual RF modules and RF module chains
- Simulated and analyzed components such as filters using ADS, Momentum, and HFSS

**Starry**, Boston, MA

June 2019 - January 2020

RF Test Engineer Co-op

- Wrote Python scripts to control a VNA for automated testing and validation of PCBs for production
- Tested and diagnosed full systems that were showing issues in the field using Python scripts in Linux
- Repaired and replaced hardware within the full system post-diagnosis, retested, and sent back into the field

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## PROJECTS

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Athleta Tec

2023 - 2024

Athlos 15

- Designed schematic and developing firmware for [Athlos 15](https://www.athlos-15.com/) v1, an exercise tool used for internal temperature regulation and reduction. <https://www.athleta-tec.com/>

Custom TV Remote

2022

- Designed and fabricated a remote for my TV to allow for easy brightness control
- Using a rotary encoder, the remote can adjust the TVs brightness simply by turning a dial

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## EDUCATION

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Northeastern University, Boston, MA

Graduated May 2020

**Bachelor of Science: Electrical Engineering**

**Minor: Experience Design**

**Leadership and Activities:** Eagle Scout, IEEE, Phi Delta Theta Fraternity, Medal of Achievement in Math & Science from Colorado School of Mines, Thomas C. Viafore Eastchester Fire Department Scholarship Award