ALEXANDER HOPPE

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SUMMARY

I'm an Electrical and Computer Engineering student graduating with my bachelor's from Olin College in May 2019, excited about hardware and firmware development for aerospace, electric vehicles and consumer electronics. I love bringing systems and interactions to life with embedded electronics.

EMPLOYMENT

May 2018 to Aug. 2018

SpaceX · Avionics Intern
- Designed, prototyped and tested a new design for an ARM-embedded, CAN-enabled interface PCB for a new sensing technology
- Developed functional prototype firmware in C++ and test software in python
- Collaborated with mechanical engineers for system integration and flight-like design

Sept. 2015 to Current

Olin Electric Motorsports · Electrical Team Lead, Senior Electrical Engineer
- Successfully led electrical system design through passing tech and racing at Formula SAE Electric 2017
- Designing, fabricating and testing custom CAN-networked AVR-core embedded systems PCBs
- Writing and implementing training, educational, and onboarding documents and sessions
- Collaborating on both high power and digital electrical system architectures
- Supporting third-iteration custom BMS design and accumulator integration

May 2017 to Aug. 2017

Synapse Product Development, Inc. · Electrical Engineer
- Developed validation testing and lab skills while reducing product power consumption
- Designed cost-down steps for mass-production
- Worked with and presented to clients

May 2016 to Aug. 2016

Onshape · Software Development Intern (Assemblies)
- Worked on the full production stack in C++, Java and JavaScript
- Implemented client-facing features such as Parallel mate
- Fixed priority bugs on both client and server applications

SKILLS

ELECTRICAL Circuit Prototyping, PCB Design, Embedded Systems Design, KiCAD, Altium Designer, Upverter, Atmel AVR, Circuit Debugging (Oscilloscope, Function Generator, DMM, Spectrum Analyzer), LTSPICE, HV Power Systems Integration, Verilog

SOFTWARE/FIRMWARE Python, Git, Test Driven Development, Java, C++, MATLAB, C, HTML & CSS, Flask

MECHANICAL Onshape, SolidWorks, CNC Router, Laser Cutting, 3D Printing, Manual Milling, Surface Grinding, Heat Treatment

MANAGEMENT/WORKFLOW JIRA, Asana, Trello, Confluence, GitHub

PROJECTS

Mar. 2018 to May 2018

BombSquad - Elecanisms 2018
A real-life, modular implementation of the popular VR game Keep Talking and Nobody Explodes, running on 7 PIC24FJ MCUs connected with I2C.

Mar. 2018 to Apr. 2018

Steel Microstructures and Acoustic Properties
A materials science project that involved heat treating 4340 steel, post machining, microstructure analysis, acoustic striking, and frequency analysis.

Nov. 2017 to Dec. 2017

8-bit MIPS CPU
An 8-bit RISC CPU written in Verilog that used a reduced subset of the MIPS ISA for Computer Architecture Fall 2017 at Olin.

Sept. 2016 to Current

Third Wave Coffee
I'm a self-taught barista and proprietor of a specialty coffee shop I run in my dorm at Olin.

Sept. 2017 to Current

ARM Cortex M7 Data Logger
Custom revision 0 PCB design for an ATSAME70N19 Cortex M7 microcontroller.

Jan. 2017 to Apr. 2017

Mysealium
A conceptual art-sharing ecosystem for museum curators developed in User Oriented Collaborative Design 2017

Oct. 2016 to Dec. 2016

ReFilament
A 3D-printing filament recycling system built as the final project for Principles of Engineering

Jan. 2016 to May 2016

Morse Code Internet in a Box
A fully student-designed and built seven-layer OSI model of the internet based on Morse code communication

Dec. 2015

Listening With Lasers
An apparatus to record sounds from outside a window using a laser, a photodiode, a filter circuit and Digilent WaveForms software

Oct. 2015

The O Watch
An internet-connected LED watch using the Spark Core that won Best Wearable at HackHolyoke 2015