

ALEXANDER HOPPE

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Olin College of Engineering ECE grad, May 2019, GPA 3.81. Interested in hardware development roles bringing embedded systems to life. I like solving hard problems that can change peoples' lives for the better.

EXPERIENCE

- Sept. 2015 to Current **Olin Electric Motorsports · Electrical Team Lead, Senior Electrical Engineer**
- Developing lasting knowledge transfer systems for historical designs, running documentation, and onboarding sessions
 - Designing, fabricating and testing custom CAN-networked AVR-core embedded systems PCBs
 - Successfully led electrical system design through passing tech and racing at Formula SAE Electric 2017
 - Collaborating on both high power and digital electrical system architectures
 - Leading third-iteration custom BMS design and supporting HV battery system integration
- May 2018 to Aug. 2018 **SpaceX · Avionics Intern**
- Designed, prototyped and tested an ARM-based 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
- May 2017 to Aug. 2017 **Synapse Product Development, Inc. · Electrical Engineer**
- Reduced device unit cost and power consumption and investigated Part 15 EMC compliance issues in validation tests
 - Analyzed and tested custom single-cell lithium battery solutions for handheld consumer electronics
 - Identified solution space for IMU technology and provided design recommendations to clients
- May 2016 to Aug. 2016 **Onshape · Software Development Intern (Assemblies)**
- Worked on the full production stack from geometry solvers in C++, through Java servers to JavaScript UI improvements
 - Implemented 2 client-facing features: Parallel mate relation and Mate dimension display
 - Fixed a priority bug on both client UI and server application

PROJECTS

- Sept. 2018 to Current **Exploring New Directions in Personal Mobility**
Taking a people-first approach to semi-autonomous sensing and control technology for power wheelchair users with Toyota Social Innovation
- 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.
- Mar. 2018 to May 2018 **BombSquad - Elecanisms 2018 <o.olin.build/bombsquad>**
A real-life, modular implementation of the popular VR game Keep Talking and Nobody Explodes, running on 7 PIC24FJ MCUs connected with I2C.
- 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. 2017 to Nov. 2017 **ARM Cortex M7 Data Logger**
Custom revision 0 PCB design for an ATSAME70N19 Cortex M7 microcontroller.
- Oct. 2016 to Dec. 2016 **ReFilament <o.olin.build/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

SKILLS

ELECTRICAL	Circuit Prototyping, PCB Design, Embedded Systems Design, KiCAD, Altium Designer, Atmel AVR, Circuit Debugging, LTSPICE, HV Power Systems Integration, Verilog, Electronics Validation Testing
PROGRAMMING	Python, C++, C, MATLAB, Git, Test Driven Development, Java, HTML & CSS, Flask
MECHANICAL	Onshape, SolidWorks, CNC Router, Laser Cutting, 3D Printing, Manual Milling, Surface Grinding, Heat Treatment
WORKFLOW	GitHub, Confluence, JIRA, Asana, Trello
DESIGN	Collaborative Design, Adobe Illustrator, User Interviews