

## Education

December 2019 Carnegie Mellon University • Pittsburgh, PA • 3.90 GPA  
Bachelor of Science in Electrical and Computer Engineering

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## Work Experience

- 2017- Present Research Assistant • Carnegie Mellon Biorobotics Lab • Pittsburgh, PA
- Developing a compact, high current motor driver with GaNFETs and Field Oriented Control
  - Designed a miniaturized platform with an under 1 square inch footprint and wide input power supply for edge computing, analog sensing, and inertial measurement
  - Evaluated and developed with TI mmWave technology, experimental 76-81GHz radar
  - Implemented UART echo for the ATTiny 85 in AVR assembler with 34 word program
- 2019- Present Teaching Assistant • Carnegie Mellon University • Pittsburgh, PA
- Working to support a course focusing on the theoretical background and practical application of robot kinematics and dynamics
  - Developed tools in LaTeX to make homework submission easier
- Summer 2019 Electrical Engineering Intern • HEBI Robotics • Pittsburgh, PA
- Developed a modular power controller for seamless power ORing, battery charging, power button control, soft-start, and high efficiency DC-DC conversion up to 6A per channel
  - Designed a configurable test bench to assess the robustness and efficiency of regulators
  - Created a small form-factor Ethernet switch to fit into an existing modular T-joint
  - Developed a shunt regulator capable of mitigating transient spikes by over 50%
  - Worked on an Ethernet-enabled sensing platform with software selectable output voltages
- 2016- 2019 System Lead • Carnegie Mellon Racing • Pittsburgh, PA
- Worked on a team to create an award winning Formula 1 Electric race car
  - Designed, documented, and routed the wiring harness for the car
  - Reverse engineered, documented, and reorganized an old design for increased clarity
- Summer 2018 Electrical Engineering Intern • Deeplocal • Sharpsburg, PA
- Optimized firmware for a Cypress Programmable System on Chip (PSoC) to control 300 addressable LEDs, 6 motors, and numerous auxiliary sensors from a single low-cost chip
  - Designed, prototyped, and assembled PCBs under tight constraints for custom lighting
  - Selected and tested motors and motor controllers based on torque and speed requirements
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## Skills

PCB and Hardware Design	Altium Designer • PSoC Creator • Quartus II • SystemVerilog
Circuit Design	Power Electronics • Analog Design • Digital Circuitry
CAD Experience	AutoCAD • Autodesk Inventor • Fusion 360 • 3ds Max
Programming	C • x86 Assembly • MATLAB • Python • C++ • LaTeX • Java • ROS
Fabrication and Prototyping	Laser Cutting • PCB Milling • CNC Routing • 3D Printing • Soldering