

# Kowin S. Shi

Website: [kowinshi.me](http://kowinshi.me) Github: [github.com/SkookumAsFrig](https://github.com/SkookumAsFrig)  
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## EDUCATION

**Cornell University**, College of Engineering, Ithaca, NY

Master of Engineering, Electrical and Computer Engineering

Aug. 2019 - May 2020

Focus: Robotics and Controls; Overall GPA: 4.20

Bachelor of Science, Mechanical Engineering

Aug. 2015 - May 2019

Minor: Electrical and Computer Engineering

Honors: *Cum Laude*; Overall GPA: 3.73; Major GPA: 4.03; Dean's List: 6 Semesters.

**Relevant Courses:** Bio-Inspired Multi-Robot Systems; Multivariate Control Theory; Parallel Computing; Intelligent Sensor Planning and Control; Machine Learning; Computer Vision; Autonomous Mobile Robots; Embedded Operating Systems; Advanced System-on-Chip (FPGA); Stochastic Control Systems; Feedback Controls; System Dynamics; Microcontroller Design; Mechatronics.

## PROFESSIONAL EXPERIENCE

**Uber Advanced Technologies Group**, Pittsburgh, PA

*Hardware Engineering Intern*

May – Aug. 2019

- Developed mechatronic systems for the compute module in self-driving cars
- Work included Solidworks CAD and drawings, sheet metal design, Altium Designer PCBA bringup, Python and Linux Console GUI, ANSYS FEA simulations, and product trade analyses

**Tesla, Inc.**, Palo Alto, CA

*Engineering Intern, Power Electronics*

May – Aug. 2018

- Developed automated functional tester for vehicle high voltage junction box, deployed at contract manufacturer

*Engineering Intern, Drive Systems (Motor Design Team)*

May – Aug. 2017

- Designed and validated next-generation PMSRM and AC induction propulsion system components
- Supported manufacturing processes with testing and tooling designs

**GAC Automotive Engineering Institute**, Guangzhou, China

May - July 2016

*Prototyping Machine Shop Intern*

- Participated in operation and acceptance testing of 3 and 5-axis machining centers
- Compiled reports on machining procedures and GD&T

## RESEARCH EXPERIENCE

**Human-Robot Collaboration and Companionship (HRC2) Group**, Cornell University, Ithaca, NY

Aug. 2017 – Dec. 2017

*Undergraduate Researcher*

- Worked in a two-person team under Dr. Guy Hoffman to create new generation of social robots
- Developed kinematics and android-based software to make empathy object “Kip” more powerful and accessible

## ENGINEERING EXPERIENCE

**Formula SAE Racing Team**, Cornell University, Ithaca, NY

Aug. 2015 – June 2019

*Member*

- Developed 600V to 12V DC-DC converter utilizing GaN and cutting edge Dual Active Bridge topology
- Secured 8<sup>th</sup> place finish out of 125 teams at the Michigan International Speedway Formula SAE 2017 Competition

**Resistance Racing Electric Vehicle Team**, Cornell University, Ithaca, NY

Aug. 2016 – June 2018

*Aerodynamics/Vehicle Body Sub-team Lead*

- Led the development and manufacturing of low-drag composite body work, utilizing ANSYS Fluent CFD
- Placed 5<sup>th</sup> at the Shell Eco-Marathon Americas in the team's inaugural year

## ENGINEERING PROJECTS

- Visit [kowinshi.me](http://kowinshi.me) for my list of multidisciplinary projects that include robotics, automotive engineering, FPGA, control systems, power electronics, and electromechanical design

## SPECIALIZED SKILLS

**Engineering Programs:** ROS, RViz, Gazebo, Git, Altium Designer, Intel Quartus Prime, Xilinx Vivado, CATIA, ANSYS, Inventor, Solidworks, Siemens NX, Fusion 360, RSLogix, FactoryTalk View, AutoCAD Electrical

**Programming Languages:** Python, C/C++, CUDA, Assembly, Verilog/System Verilog, MATLAB, G-code, Java, PLC Ladder Logic

**Fabrication Skills:** PCBA bring-up. Operation of lathes and mills. Utilization of G-code and CAM for CNC machining. TIG welding, composites manufacturing, 3D printing and soldering. Application of geometric dimensioning and tolerancing.

**Foreign Languages:** Mandarin (native proficiency), Spanish (limited working proficiency)