

Kowin S. Shi

Website: kowinshi.me Github: github.com/SkookumAsFrig
Cell: (909) 667-9419 Email: kss223@cornell.edu

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

Autonomy Hardware Engineer

July 2020 – Present

Hardware Engineering Intern

May – Aug. 2019

- Design and test high-performance, safety-critical compute module in self-driving cars
- Work includes Solidworks CAD, manufacturing analyses, supplier collaboration, sheet metal design, Altium Designer PCBA bringup, Python and Linux scripting, ANSYS FEA simulation, 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

- Developed kinematics and android-based software for empathy object *Kip*, advised by Dr. Guy Hoffman

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 8th 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 5th at the Shell Eco-Marathon Americas in the team's inaugural year

ENGINEERING PROJECTS

- Visit 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)