Kowin S. Shi

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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; GPA: 4.20
Bachelor of Science, Mechanical Engineering **Aug. 2015 - May 2019**
Minor: Electrical and Computer Engineering
Honors: *Cum Laude*; Major GPA: 4.03

PROFESSIONAL EXPERIENCE

Amazon Prime Air, Seattle, WA
Hardware Development Engineer II **July 2022 – Present**

- Solving complex problems with robust mechatronic solutions, such as high-power propulsion systems and high-precision robotics
- Specialization: Power Electronics, Motion Control Systems, Wind Tunnel Testing, Electro-Mechanical Co-Design, Rigid-Flex PCB for High Speed Signal/Power, Thermal and Structural Analysis, GD&T for PCBA Mating, Shock/Vibe Reliability, EMI/EMC Compliance

Aurora Innovation Inc., Pittsburgh, PA
Hardware Engineer II **Jan 2021 – July 2022**

- Continued work from Uber ATG acquisition, creating some of the most powerful, reliable and scalable computer solutions in the self-driving space

Uber Advanced Technologies Group, Pittsburgh, PA
Autonomy Hardware Engineer **July 2020 – Jan 2021**
Hardware Engineering Intern **2019**

Tesla, Inc., Palo Alto/Fremont, CA
Engineering Intern, Power Electronics **2018**

- Developed automated tester for Model S and X high voltage junction box, deployed at contract manufacturer

Engineering Intern, Drive Systems (Motor Design Team) **2017**

- Designed Model 3, S and X motor components, supported manufacturing processes with testing and tooling designs

GAC Automotive Engineering Institute, Guangzhou, China **2016**
Prototyping Machine Shop Intern

- Supported prototype bring-up for the Trumpchi GS8 sports utility vehicle

SPECIALIZED SKILLS

Engineering Programs: CATIA, 3DX/ENOVIA, ANSYS, Inventor, Solidworks/EPDM, ROS, RViz, Gazebo, Git, Altium Designer, Intel Quartus Prime, Xilinx Vivado, 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)

Professional Certifications: Lean Six Sigma Green Belt, OSHA 10 Hour Construction

ENGINEERING PROJECTS

- Visit kowinshi.me for list of projects that include robotics, FPGA, control systems, power electronics and more.

RESEARCH EXPERIENCE

Collective Embodied Intelligence Lab, Cornell University, Ithaca, NY **2020**
Independent Researcher

- Andrea Ling, Mahshid Moghadasi, Kowin Shi, Junghsein Wei, & Kirstin Peterson. (2021). Formica Forma: Explorations in Insect-Robot Collaboration for Emergent Design and Manufacturing. *Proceedings of the 40th Annual Conference of ACADIA, Distributed Proximities*, 310–319. https://doi.org/10.3929/ETHZ-B-000530230
- Developed and evaluated novel method of manufacturing, by UV-light guidance of ant tunneling with a robot arm

TEAM EXPERIENCE

Formula SAE Racing Team, Cornell University, Ithaca, NY **2015 – 2019**
Suspension and Electrical Team Member

Resistance Racing Shell Eco Marathon Team, Cornell University, Ithaca, NY **2016 – 2018**
Aerodynamics/Vehicle Body Sub-team Lead