

# Kowin S. Shi

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## EDUCATION

Massachusetts Institute of Technology, Cambridge, MA Graduate Certificate, System Design & Management	Aug. 2024 - May 2025
Cornell University, College of Engineering, Ithaca, NY Master of Engineering, Electrical and Computer Engineering Focus: Robotics and Controls; GPA: 4.20	Aug. 2019 - May 2020
Bachelor of Science, Mechanical Engineering Minor: Electrical and Computer Engineering. Honors: <i>Cum Laude</i> ; Major GPA: 4.03	Aug. 2015 - May 2019

## PROFESSIONAL EXPERIENCE

Blue River Technology (John Deere), Santa Clara, CA <i>Mechatronics Engineer III</i>	Feb 2023 – Present
<ul style="list-style-type: none"><li>Design, deploy and debug robotics hardware/software in remote, harsh environments</li><li>Develop and negotiate product, systems and engineering requirements with customers</li><li>Specializations: real-time computer vision, data management, electro-mechanical co-design, system architecture, automotive harness, signal/power rigid-flex PCBA, power electronics, multiphysics CAE, GD&amp;T, shock/vibe reliability, EMI/EMC compliance</li></ul>	
Amazon Prime Air, Seattle, WA <i>Hardware Development Engineer II</i>	July 2022 – Feb 2023
<ul style="list-style-type: none"><li>Developed high power propulsion systems and precision robotics for wind tunnel testing</li></ul>	
Aurora Innovation Inc., Pittsburgh, PA <i>Hardware Engineer II</i>	Jan 2021 – July 2022
<ul style="list-style-type: none"><li>Continued work from Uber ATG acquisition, creating some of the most powerful, reliable and scalable computer solutions in the self-driving space</li></ul>	
Uber Advanced Technologies Group, Pittsburgh, PA <i>Autonomy Hardware Engineer</i> <i>Hardware Engineering Intern</i>	July 2020 – Jan 2021 2019
Tesla, Inc., Palo Alto/Fremont, CA <i>Engineering Intern, Power Electronics</i>	2018
<ul style="list-style-type: none"><li>Developed automated tester for Model S and X high voltage junction box, deployed at contract manufacturer</li></ul>	
<i>Engineering Intern, Drive Systems (Motor Design Team)</i>	2017
<ul style="list-style-type: none"><li>Designed Model 3, S and X motor components, supported manufacturing processes with testing and tooling designs</li></ul>	
GAC Automotive Engineering Institute, Guangzhou, China <i>Prototype Engineering Intern</i>	2016

## SPECIALIZED SKILLS

**Engineering Programs:** CATIA, 3DX/ENOVIA, ANSYS, Solidworks/EPDM, Inventor, ROS, Gazebo, Git, Altium Designer, Kicad, RapidHarnass, Enterprise Harnass, Intel Quartus Prime, Xilinx Vivado, Siemens NX, Fusion 360, RSLogix, AutoCAD Electrical

**Programming Languages:** Python, C/C++, CUDA, Golang, JavaScript, 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](http://kowinshi.me) for portfolio of personal projects that include robotics, FPGA, control systems, power electronics and more.

## RESEARCH EXPERIENCE

Collective Embodied Intelligence Lab, Cornell University, Ithaca, NY <i>Independent Researcher</i>	2020
<ul style="list-style-type: none"><li>Formica Forma: Explorations in Insect-Robot Collaboration for Emergent Design and Manufacturing. <i>Proceedings of the 40th Annual Conference of ACADIA, Distributed Proximities</i>, 310–319. <a href="https://doi.org/10.3929/ETHZ-B-000530230">https://doi.org/10.3929/ETHZ-B-000530230</a></li><li>Developed and evaluated novel method of manufacturing, by UV-light guidance of ant tunneling with a robot arm</li></ul>	

## TEAM EXPERIENCE

Formula SAE Racing Team, Cornell University, Ithaca, NY <i>Suspension and Electrical Team Member</i>	2015 – 2019
Resistance Racing Shell Eco Marathon Team, Cornell University, Ithaca, NY <i>Aerodynamics/Vehicle Body Sub-team Lead</i>	2016 – 2018