

Matthew Hong

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EDUCATION

University of Southern California, Los Angeles, California

USC Viterbi School of Engineering

Bachelor of Science in Mechanical Engineering, Minor in Computer Science

Aug 2020 - May 2024

- **Relevant Major Coursework:** Introduction to Matlab, Statics, Fundamentals of Thermodynamics, Strength of Materials, Dynamics, Dynamic Systems, Mechoptronics (In progress), Dynamics of Fluids (In progress), Computer-Aided Analyses for Aero-Mechanical Design (In Progress)
- **Relevant Minor Coursework:** Introduction to Programming, Discrete Methods in Computer Science, Data Structures and Object Oriented Design (In Progress)

WORK EXPERIENCE

Research Assistant in the Realization of Robotic Systems Lab (RROS), USC, Los Angeles, CA **Jan 2022 - present**

- Conducting research on rapidly reconfigurable, deployable robotics and automation technologies with an emphasis on robots that can perform household tasks

Engineering Intern, Mixel Inc, San Jose, CA

Jun 2019 - Jul 2019

- Responsible for performing Conformance suite tests(CTS) on MIPI PHYs.
- Wrote Python scripts allowing the automatic sweeping of electrical parameters to dramatically reduce the overall testing and automatically generate CTS reports.
- Ported the Mentor DxDesigner schematic database of MIPI PLL IP to Pyxis database and ran Calibre SVS to verify the equivalence of the schematic databases.

Local Poke, Pleasanton, CA

Aug 2020 - Aug 2021

- Part-time job working 8-10 hours on the weekends
- Prepared food, served customers, managed kitchen, and trained new hires

ACADEMIC/PERSONAL PROJECTS

Robotic Pruning

- Utilized ROS libraries to create the trajectory of bimanual arms and motion planning of Baxter robot
- Iterative design of end effectors (gripper and shears) using SolidWorks with servo motors integrated and controlled through Arduino
- Used OpenCV and image processing techniques to detect patterns for leaves to prune in real-time
- Successfully found four different orientations and created a trajectory of two arms to prune leaves in those orientations

Coffee Shop Mapper

- Developed a website using NodeJS that allows users to search for coffee shops based on certain filters such as location, hours of operation, and popular drinks
- Primarily worked as project manager with the responsibility of scheduling meetings, forming deadlines, and ensuring project goals were well articulated

3D Truss Bridge

- Collaborated with a team of engineering students to design, test, and produce a truss bridge made out of Polylactic Acid (PLA) using Finite Element Analysis and 3D modeling features in Solidworks

SKILLS

- **Languages:** C++, Java, Python, SQL, JavaScript/HTML/CSS, MATLAB
- **Frameworks and Libraries:** ROS, NodeJS
- **CAD:** Solidworks, NX, Fusion 360, AutoCAD
- **Tools:** Git, Docker, Linux, Excel