Mae Chen

maechen@hmc.edu | (346) 544-7795 | www.linkedin.com/in/maechen8/

EDUCATION

Harvey Mudd College, *B.S. in Engineering*, Claremont, CA
- Relevant Coursework: Digital Electronics & Computer Architecture, Eng. Systems, Intro to Eng. Design & Manufacturing

WORK EXPERIENCE

Higher Ground, LLC, *Mechanical Engineering Intern*, Palo Alto, CA — Jun 2026 – Aug 2026
- Automated tuning process in production lines to improve manufacturing repeatability and eliminate operator variability by integrating stepper motor control, real-time motor load feedback, and operator UI to perform closed-loop adjustments.
- Designed and integrated mechanical, electrical, and controls hardware, using dual linear stages for positioning, a pogo-pin PCB interface for electrical contact, and an enclosed Raspberry Pi and Tic stepper-controller system for motion control and DAQ.
- Challenged long-standing component placement assumptions that were limiting operating temperatures, leading to a major redesign that enabled the addition of a second fan and larger, higher torque, and lower-cost motor without slowing production.
- Emulated a thermologger communication protocol by USB traffic analysis, enabling remote and autonomous data collection.
- Designed and executed instrumented solar-load testing, using temperature sensors and interchangeable translucent covers to control irradiance and characterize transient and steady-state thermal response under representative environmental conditions.

National Aeronautics and Space Administration (NASA), *Engineering Research Intern*, Houston, TX — Jun 2025 – Aug 2025
- Supported Artemis Lunar Terrain Vehicle R&D by preparing the LTV Ground Test Unit for integrated vehicle testing.
- Preformed root-cause-analysis on propulsion motor current-spiking failures to discover slipping stators, restored to test readiness.
- Designed and machined on 3-axis CNC custom aluminum tooling to accelerate propulsion motor servicing, enabling a critical module repair before an out-of-state NASA test crew arrived for scheduled rover testing.
- Redesigned the rover's sheet-metal crew interface panel and produced corresponding electrical wiring diagrams and schematics.
- Remediated safety concerns by shading the dashboards, improving drivers' spatial awareness and ability to see camera feeds.

PROJECT AND RESEARCH EXPERIENCE

Harvey Mudd Racing Formula SAE Team, *Vehicle Dynamics Lead*, Claremont, CA — Aug 2025 – Present
- Led 30-member Vehicle Dynamics subteam through the full design-build-test cycle for chassis, suspension, steering, brakes, pedal box, and wheel assemblies, from concept and analysis through manufacturing and vehicle integration.
- Built scalable CAD architecture with efficient dependencies, design workflows, technical reviews, and ownership structures.
- Developed and taught six CAD training sessions for 40 new members across all mechanical subteams, preparing first-time designers to contribute to production vehicle hardware.

Creative Computing Studio, *Studio Assistant*, Claremont, CA — Aug 2026 – Present
- Member of research group and art studio examining human-computer interactions with exhibitions and site-specific installations.
- Realized Autopoietic Quine Bot, a machine that plots its own source code to explore futility, tedium, and automation.

FRC Everybot Initiative, *Crew Member*, Houston, TX — Jan 2026
- Contributed to the 2026 Everybot, developing and integrating mechanisms under a one-week timeline while balancing competitive performance, affordability, and ease of fabrication for teams worldwide awaiting the release of documentation.
- Developed and iterated on the intake and hopper systems with rapid and low-cost prototyping, researching intake geometries and implementing a folding hopper and bottom-mounted agitator for reliable game-piece acquisition and feeding.

LEADERSHIP EXPERIENCE

Associated Students of Harvey Mudd College (ASHMC), *Executive Board Club Director*, Claremont, CA — May 2026 – Present
- Organized exposition and showcase of student organizations with ~400 attendees and 49 clubs.
- Enacted new "Club Notebook" policy to accelerate budget proposals and promote on-campus engagement through third spaces.

Golden Warriors Robotics FIRST Robotics Competition #8576, Fulshear, TX — Jan 2022 – May 2025
President, Strategy Officer, Mechanical Officer
- Led 124-member team through build seasons and World Championship playoffs, coordinating students, officers, and mentors.
- Built sustainable team infrastructure through officer-led technical training and successfully negotiated with district administration to secure greater workshop space and funding.

Biscuit Robotics 501(c)(3), Katy, TX
Founder, President, Event Partner with Robotics Education and Competition Foundation — Mar 2022 – Present
- Founded robotics education nonprofit, developing summer programs and expanding hands-on STEM outreach for kids ages 8-14.
- Organized a 37-team VEX IQ tournament, recruiting and leading 53 volunteers; raised funding for additional robotics outreach in an underserved school district.

SKILLS

- *Technical:* SolidWorks, Onshape, CAM, CNC machining, GD&T, experimental design
- *Languages:* Mandarin Chinese (professional working proficiency)