

---

Berkeley, CA | [oliverhchang@berkeley.edu](mailto:oliverhchang@berkeley.edu) | (408) 203-9356

## EDUCATION

### University of California, Berkeley

*B.S. Mechanical Engineering*

Expected Graduation: May 2028 | GPA: 3.96

## SKILLS

**Technical Skills:** Onshape, Solidworks, Fusion 360, ANSYS, MATLAB, Python, 3D Printing, CNC, Laser Cutting, Lathe, Mill

## RELEVANT EXPERIENCE

### Theoretical & Applied Fluid Dynamics Laboratory (TAFLAB)

May 2025 - Present

*Undergraduate Researcher*

- Prototyped 3 transmission architectures (geared, pulley, sprocket), designing waterproof enclosures and test jigs.
- Engineered a complete wave energy harvesting system, leading the mechanical design (CAD, DFM), fabricating a multi-stage transmission, and integrating sensors through Arduino to consistently capture performance data.
- Developed a physics-based model in Python to analyze system dynamics, using sensor data to quantify damping coefficients and energy loss, optimizing the design to successfully generate a consistent 0.5 W.

### Formula Electric at Berkeley

Sept 2024 - Present

*Chassis Mechanical Engineer*

- Developed the team's first chassis FEA model in ANSYS, optimizing the spaceframe geometry to increase torsional stiffness
- Modeled the relationship between chassis torsional stiffness and vehicle handling, showed >1200 Nm/deg stiffness required for < 3% LLTD error and ensure predictable suspension tuning.
- Validated the FEA model by designing & building a torsional stiffness test rig, correlating physical data to simulation results with a 15.5% margin of error.

### UC Berkeley's Space Technology and Rocketry (STAR)

Sept 2024 - Present

*Airframe & Propulsion Engineer*

- L2 Rocket: Designed rocket layout in OpenRocket, fabricated the airframe and recovery systems, and integrated avionics. Assembled, soldered, and programmed custom flight electronics for altitude, pressure, and temperature data. Successfully launched to 2,944 ft apogee.
- Liquid Engine: Applied DFM to manufacture 9 custom injector and combustion chamber components; used GD&T to ensure strict precision and tolerances for CNC/mill/lathe for successful static hot fire.

### Fremont High Robotics FRC Team 3501: Firebots

2020 - 2024

*VP of Mechanical Design*

- Led a 6-person team to design a competition robot with Onshape that placed in the top 15% of 3,000+ teams worldwide, introduced new rapid prototyping workflow, refining design with major overhauls, and oversaw team's technical drawings

## PROJECTS

**Bike Trailer:** Used Onshape to CAD a collapsible bike trailer, reducing to ¼ of its original footprint for storage.

**Combat Robot:** Designed, wired, and fabricated multiple fully 3D-printed competitive 1lb robots for local competitions.

## WORK EXPERIENCE

### Scouts BSA Summer Camp Staff

June - July 2022, 2023, 2024

*Kitchen Staff, Aquatics Staff, Handicraft Director*

- Developed curriculum and instructed over 400+ scouts in first aid, lifesaving, woodworking, and technical skills.

## HONORS & AWARDS

*Autodesk Design & Make Ambassador*

*ASME 2025 Cadathon, 1st Place*