

SHAHRAD ZOMORRODI

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EDUCATION

University of California, San Diego

Sept. 2024 – March 2027

B.S. Mechanical Engineering

COURSEWORK

Courses: Space Mission Analysis & Design, Heat Transfer, Fluid Mechanics (Advanced), Thermodynamics, Mechanics of Materials, Dynamics & Vibrations, Computational Methods in Engineering, Mechanical Design, Linear Controls, Experimental Techniques

EXPERIENCE

Gouvis Engineering Consulting Group, Inc.

Irvine, CA

Plumbing Engineering Intern

June 2026 – Sept. 2026

- Designing plumbing systems for residential and commercial buildings by laying out water distribution, drainage/waste/vent, and gas piping in AutoCAD and Revit, producing coordinated construction-ready plan sets
- Performing pipe sizing and fixture-unit calculations against the California Plumbing Code and Title 24 to ensure compliant, efficient system designs
- Coordinating with mechanical, electrical, and architectural teams to resolve conflicts and integrate plumbing within multi-disciplinary projects

HVAC Engineering Intern

June 2025 – Sept. 2025

- Supported HVAC system design by performing load calculations and applying ASHRAE standards and engineering codes, producing and reviewing mechanical plan sets for residential and commercial buildings
- Collaborated with engineers and architects across multi-disciplinary projects, using AutoCAD and Bluebeam Revu for drafting and system layouts
- Selected for the firm's public LinkedIn intern spotlight, recognized for professionalism and a strong work ethic

Vertical Flight Society

San Diego, CA

Embedded & Electronics Lead

Nov. 2024 – June 2025

- Led electrical system integration for an eVTOL firefighting drone by selecting batteries, configuring ESCs, setting up a Pixhawk 4 flight controller, and hand-soldering the wiring harness, delivering a power architecture that reached 49.6 N thrust at a 1.26 thrust-to-weight ratio
- Designed, assembled, and tested payload delivery mechanisms by prototyping and iterating on structural components, achieving the reliability required for competition flight and payload-drop testing
- Coordinated with mechanical and controls teams to optimize power distribution, weight, and system safety across the integrated vehicle

PROJECTS

Robot Competition: Design & Build

San Diego, CA

Mechanical Design Project

Sept. 2024 – Nov. 2024

- Designed, built, and tested a fully functional robot from scratch, engineering the drivetrain and arm/gripper mechanisms to perform reliably under competition conditions
- Modeled 10+ mechanical components in Fusion 360 and produced 2D layouts in AutoCAD, calculating gear ratios and power transmission to improve drivetrain efficiency under load
- Fabricated parts using a laser cutter, drills, taps, and reamers, hand-soldered the motor and switch wiring, then assembled the full structure and iterated on the design through testing to refine performance

Thermal & Fluid Dynamics Analysis

San Diego, CA

Experimental & Computational Study

Jan. 2026 – Mar. 2026

- Characterized convective heat-transfer performance by designing and running experiments on an aluminum plate and pin-fin heat sink across free, laminar, and turbulent regimes, fitting a power-law correlation to the Nusselt–Reynolds relationship
- Built Fusion 360 thermal simulations to validate pin-fin geometry, identifying a V-shaped layout that raised the Nusselt number up to ~80% over a bare plate and measurably lowered surface temperature
- Ran ANSYS Fluent CFD on an airfoil and built a MATLAB image-processing pipeline to extract streamlines, validating potential-flow theory to within 1% and quantifying a leading-edge slat that delayed stall from ~12° to ~20°

SKILLS

Engineering Software: SolidWorks, Fusion 360, Creo Parametric, CATIA, AutoCAD, Revit, ANSYS Fluent, Bluebeam Revu, MATLAB, Python

Fabrication & Methods: GD&T, CFD, 3D Printing, Laser Cutting, Machining, Sheet Metal, Injection Molding, Soldering, Prototyping

Electronics: Circuit Design, Arduino, Flight Controllers (Pixhawk), Power Distribution