

Jason Zhang

zzx233486@gmail.com |

linkedin.com/in/zixianz | toumanlin.github.io/

EDUCATION

University of California, Los Angeles

B.S Aerospace Engineering | GPA: 3.81/4.0

Expected Spring 2027

Skills & Relevant Coursework

Computer: SolidWorks (CAD), C++, Python, React, MATLAB, Ansys Fluent

Engineering: Heat&Mass Transfer, CFD, Finite Element Analysis, Circuit Design

Experience

Energy and Propulsion Laboratory

Los Angeles, CA

Undergrad Research Assistant - Jet in Cross Flow

June 2026 - Present

- Developed a neural-network pipeline for detecting shear-layer vortices in PIV data, including flow-field preprocessing, Q-criterion computation, candidate extraction and classification training, reached 98.3% accuracy.
- Developed a vortex-tracking and phase-reconstruction method that tracked detected shear-layer structures, estimated vortex phase, and reconstructed ~1 kHz shear-layer dynamics from sparsely sampled 5 Hz PIV snapshots.
- Achieved >90% agreement with POD-derived phases within $\pm 15^\circ$, the method was incorporated into Ph.D. research to independently validate POD-based reduced-order modeling.
- Designed, 3D-printed, tested, and installed hot-wire and laser-sheet positioning mechanisms through three and two design iterations, respectively; implemented a 5:1 geared mechanism to decouple hot-wire translation and rotation for improved positioning and calibration.

Mechatronics and Controls Laboratory

Los Angeles, CA

Undergrad Research Assistant - Unmanned Underwater Vehicle

June 2026 - Present

- Diagnosed zero-thickness and self-intersecting propeller geometry responsible for CFD meshing failures; reconstructed the blade geometry from published experimental cross-sections and produced a mesh-ready model for ANSYS Fluent.
- Conducted ANSYS Fluent CFD analyses of a three-blade customized propeller to quantify thrust, torque, pressure distribution, propulsive efficiency, and cavitation risk across representative underwater operating conditions.
- Evaluated candidate UUV thruster performance and propulsion feasibility using CFD results, providing pre-CAD estimates of hydrodynamic loads and operating performance to inform propulsion-system sizing and subsequent mechanical design decisions

AIAA, Design/Build/Fly at UCLA

Los Angeles, CA

Manufacturing & Aerodynamics Team

Feb 2026 - Present

- Contributed to UCLA DBF team's 3rd-place global finish by manufacturing aircraft structures and supporting deployment mechanism for a 252-inch tow banner.
- Designed, Manufactured and assembled the landing gear for P2 aircraft; Ensured complete structural integrity during high-velocity landings in the competition.
- Executed composite manufacturing by performing carbon fiber hand layups for the fuselage, improving the airframe's structural durability.
- Rebuilt and upgraded the P2 aircraft after a test-flight failure within 7 days, coordinating manufacturing, assembly, and design changes to meet competition deadlines.

AIAA, Rocket Project at UCLA

Los Angeles, CA

Ground Support Equipment Team

Sep 2025 - Feb 2026

- Designed Piping and Instrumentation Diagrams (P&IDs) and developed structural blueprints for Ground Support Equipment (GSE) to support the Prometheus hybrid rocket using N_2O -HTPB; Fabricated and integrated fill-table hardware for routing N_2O oxidizer from pressurized storage tanks into the rocket feed system, supporting safe ground operations.
- Validated complete system integrity by successfully passing low-pressure and high-pressure qualification milestones on February 2, 2026, ensuring the architecture met the hard deadline for the February 7 hot-fire test.

Hovian AI Inc.

Berkeley, CA

Software Engineer Intern

Summer 2025

- Developed a Python backend and Electron frontend for an AI image-to-GIF generation pipeline within a 5-person software team; Reverse-engineered a JavaScript image-processing library and ported its core algorithms to Python, improving backend integration and processing efficiency.