ANDI ZHOU

Canadian Citizen
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Education

University of Michigan Ann Arbor **Ann Arbor, MI**
M.S.E Aerospace Engineering **GPA 3.86/4.00**
Master of Science in Engineering Graduating December 2023
B.S.E Aerospace Engineering **GPA 3.7/4.00**
Bachelor of Science in Engineering Graduated May 2022
Clubs/Programs – Michigan Aeronautical and Science Association (MASA), Sigma Gamma Tau, Michigan Active Aeroelasticity and Research Laboratory, AIAA, **Private Pilot License (PPL)**

Skills

Engineering Skills: Structure, Uncertainty Analysis, Compressible Flow, Multi-Phase Flow, Thermodynamics
CAE Software: CATIA, IPEMotion, Star CCM+, PowerFLOW, ANSA, Solidworks, ANSYS, NASTRAN, Linux OS
Coding Language: MATLAB, Python, C++, Simulink
Awards: **Dean's Honor List & University Honors (2018 – 2022)** | **Sigma Gamma Tau –** National Aerospace Honor Society

Work Experience

Zoox Inc. Foster City, CA
Thermal System Intern *May 2023 – August 2023*

- Took charge of a stagnant flow-mapping test rig; Developed timelines, procured components, and constructed the test rig in just nine weeks, providing the team with essential flow data and design insights within the L5 cooling system.
- Independently built the test rig, established electrical connections, troubleshot various pressure sensors and flowmeters, and devised an automation script in VBS that cut the testing time from 3 hours to 30 minutes.
- Analyzed system flow by mapping 175 combinations of pump duty cycles and valve positions; obtained repeatable results. Made design recommendation that could potentially increase system flowrate by 7.5%.
- Managed the entire project from end to end, from conceptualization to completion; collaborated closely with the battery, compute, and powertrain team to obtain updated component data and specialized hardware.

Solar Ship Inc. Toronto, ON
Mechanical, Test Engineer Intern, and Drone Test Pilot *May 2022 – August 2022*

- Worked tightly with a team of 6 engineers, designed the gondola for an 11-m diameter, human piloted, solar-electric tsorocopter airship used for disaster relief in remote areas.
- Designed and prototyped a light, ergonomic, 11-G crash-resilient extendable controller mount for an 11-m diameter airship, allowing a 2-m tall pilot to fly the aircraft comfortably and safely.
- Modeled and integrated all avionic component within the avionics bay, reduced the size of avionics bay by 40% while lowering the entire vehicle mass by 5%.
- Designed and conducted flight tests of a 3-m diameter tsorocopter at highly irregular hours, while maintaining the safety of other operators in addition to the equipment.

Project Team Experience

MASA (University Rocketry Team) Ann Arbor, MI
Rocket Fin Lead *September 2019 – December 2021*

- Led a team of 12 in designing, simulating, and manufacturing rocket fins able to take on supersonic flight loads.
- Led aero-thermal-structure interaction studies and optimized thermal-structural SF to 2.
- Investigated transient rocket aerothermodynamic behavior at Mach 4.49 by performing high-fidelity CFD simulation leveraging ANSYS Fluent and STAR-CCM+.
- Increased the apogee of our rocket from 40,000 to 60,000 feet through aero-structural optimization.
- Coordinated with out-of-house manufacturers; in 3 months, fabricated and assembled the largest rocket fin assembly (3-ft wide, 4-ft tall) that MASA has ever built.

Testing Engineer Lead *September 2021 – December 2021*

- Led a team of 6 in testing the largest fin assembly (3-ft wide, 4-ft tall) that MASA has ever built.
- Investigated dynamic roll behaviors using a 5' by 7' wind tunnel; quantified moment and angular acceleration due to aerodynamic effects and explored the possibility of inertial roll coupling.
- Conducted static testing of the fin surface, analyzed data and compared with those given in Finite Element Analysis; confirming that the error range stayed within 20%.
- Optimized team design cycles; accelerated design duration by 70%.