**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 –** NationalAerospaceHonorSociety

**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%.