# ANDI ZHOU

Canadian Citizen
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## Education

**University of Michigan Ann Arbor** **Ann Arbor, MI**
*Master of Science in Engineering* Graduating December 2023
**Major: Aerospace Engineering** **GPA 3.83/4.00**
*Bachelor of Science in Engineering* Graduated May 2022
**Major: Aerospace Engineering** **GPA 3.7/4.00**
**Clubs/Programs –** Michigan Aeronautical and Science Association (MASA), Sigma Gamma Tau, Michigan Active Aeroelasticity and Research Laboratory, AIAA

## Skills

**Engineering Skills:** Hands-on building, Internal Flow, Multi-Phase Flow, Thermodynamics, Structure, Engineering Testing
**CAE Software:** CATIA, Solidworks, IPEMotion, Star CCM, PowerFLOW, ANSA, 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 9 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.

**Volvo Group Truck Technology** Greensboro, NC
*Powertrain Simulation Intern* *January 2022 – May 2022*

- Designed, investigated, and refined a swirl air-water separation tank which maintained a separation efficiency of 99% while decreased its mass from the original concept by 40%.
- Collaborated with Dassault Systèms, optimized water draining in truck air intake using PowerFLOW multi-phase flow, ensuring the system is up to standards as per SAE J554.
- Cleaned 100s of powertrain CAD models and generated for them fine and efficient meshes for thermal simulations using ANSA.
- Gained extensive experience working in an Agile team and a large company of 100,000 people.

## 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.
- 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; decreased overall vehicle mass by 5%.
- 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 the comprehensive testing of MASA's largest fin assembly ever constructed, measuring 3 feet in width and 4 feet in height.
- Explored dynamic roll behaviors through experimentation within a 5' by 7' wind tunnel, quantifying both moment and angular acceleration caused by aerodynamic forces under subsonic speed.
- Executed static structural assessments on the fin surface, followed by data analysis and comparison against Finite Element Analysis results. Confirmed an error margin well within 20%.
- Optimized team design cycles; accelerated design duration by 70% by eliminating high-fidelity simulations and prioritizing hand calculations.