# ANDI ZHOU

Canadian Citizen

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## Education

**University of Michigan Ann Arbor**                                                    **Ann Arbor, MI**
**M.S.E Aerospace Engineering – Computation & Aerodynamic**                    **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, AIAA, Private Pilot License

## Skills

**Engineering Skills:** Thermal System Design and Testing, CFD, FEA, Heat Transfer, Multi-Phase Flow, Data Inferencing
**CAE Software:** ANSA, CATIA, IPEMotion, Star CCM+, PowerFLOW, 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*
- Led and completed a 2-year stagnating cooling system flow test rig in 9 weeks, yielding key flow data for the battery and powertrain cooling system.
- Made system design recommendations that increased the system volumetric flowrate by 7.5%.
- Accelerated testing time from 3 hours to 30 minutes using Python/VBS automation script.
- Designed flow instrumentation diagram; worked extensively with thermocouples, pressure sensors and flowmeters.
- Managed the entire project from end to end; collaborated 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*
- Designed an 11-G crash-resilient extendable yoke mount for an airship cockpit, ensuring safe, reliable and ergonomic control for all pilots.
- Designed and conducted flight tests of a 3-m diameter tsorocopter at highly irregular hours, while maintaining maximum safety of other operators.

**Volvo Group Truck Technology**                                              Greensboro, NC
*Powertrain Simulation Intern*                                        *January 2022 – May 2022*
- Optimized a swirl air-coolant separation tank using Star CCM+, achieving 99% separation efficiency and reducing its mass by 40%.
- Refined and repaired CAD models and surfaces using ANSA, producing error-free meshes for aerothermal simulations.
- Partnered with Dassault Systèms to enhance truck air intake water drainage, meeting SAE J554 standards using PowerFLOW.

## Research Experience

**Entropy-Stable CFD Algorithms (Independent Study)**                          Ann Arbor, MI
*Research Assistant*                                               *January 2023 – May 2023*
- Reviewed and analyzed literature on entropy-stable and unstable CFD algorithms, then implemented these algorithms in Python for analysis.
- Implemented a CFD solver for Euler's Equation using C++ and MATLAB; incorporated 1st and 2nd order Finite Volume Method as well as advanced Discontinuous Galerkin methods.
- Incorporated an adaptive meshing algorithm, refining the mesh based on cell edge length and Mach Number.

## Leadership Experience

**MASA (University Rocketry Team)**                                            Ann Arbor, MI
*Rocket Fin Lead*                                              *September 2018 – December 2021*
- Led a team of 12 in designing, simulating, and manufacturing the largest, supersonic-capable rocket fins in organization history.
- Studied dynamic roll behaviors in a 5'x7' wind tunnel, quantified moment and angular acceleration due to aerodynamic effects.
- Spearheaded high-fidelity full-body 3D CFD for a 27-ft rocket at Mach 4.49 utilizing RANS turbulence models and converged simulations to a 6th order of accuracy.