**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 –** NationalAerospaceHonorSociety

**Work Experience**

**Zoox Inc.** Foster City, CA

*Thermal System Intern*   *May 2023 – August 2023*

* Built and operated a powertrain/battery liquid cooling system flow test rig, “the Cool Bot”, yielding key pressure and flowrate data for the L5 vehicle cooling systems.
* 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+ multi-phase flow, 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*

* Conducted literature review on entropy-stable and unstable CFD algorithms, then implemented these algorithms in Python for performance analysis.
* Implemented a full CFD solver from the ground-up for Euler’s Equation using C++ and MATLAB; incorporated 1st and 2nd order Finite Volume Method as well as Discontinuous Galerkin Methods.
* Added adaptive meshing algorithms, decreasing computation time by almost 60%.

**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 angular moment and 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.