**ANDI ZHOU**

Canadian Citizen

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**Education**

**University of Michigan Ann Arbor Ann Arbor, MI**

**M.S.E Aerospace Engineering – Computation Aerodynamics 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:** Tank Design, FEA, CFD, Numerical Optimization, 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*

* Took charge of a 2-year stagnating cooling system flow test rig; finished it in 9 weeks, yielding key flow data for the L5 vehicle cooling system.
* Devised an automation script in VBS that cuts the testing time from 3 hours to 30 minutes.
* Designed flow testing instrumentation diagram; worked extensively with thermocouples, pressure sensors and flowmeters.
* Made P&ID design recommendations that increased system flowrate by 7.5%.
* Managed the entire project from end to end; collaborated 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*

* Optimized a swirl air-coolant separation tank using Star CCM+, achieving 99% separation efficiency and reducing its mass by 40%.
* Partnered with Dassault Systèms to enhance truck air intake water drainage, meeting SAE J554 standards using PowerFLOW.
* Refined 100s of powertrain CAD models using ANSA, repairing surfaces and creating efficient meshes for thermal simulations via ANSA.

**Leadership Experience**

**MASA (University Rocketry Team)** Ann Arbor, MI

*Aero CFD Lead January 2021 – June 2021*

* Conducted high-fidelity 3D CFD for a 27-ft rocket at Mach 4.49 and converged to 5th order of accuracy
* Used K-Omega and K-Epsilon turbulence models in ANSYS Fluent and STAR-CCM+ to study rocket aerothermodynamics at Mach 4.49, both steady and transient.
* Dedicated extensive after-school hours to craft precise meshes with Y+ values under 1 and was the team's first to converge the simulation using U of M's Great Lakes HPC Cluster.

*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.
* Achieved a thermal-structural SF of 2 at Max-Q via aero-thermal-structural optimization using ANSYS Suite.
* Analyzed rocket aerothermodynamics at Mach 4.49 leveraging ANSYS Fluent and STAR-CCM+.

**Personal Projects**

**Custom CFD Solver** Ann Arbor, MI

*Programmer January 2021 – May 2023*

* Independently coding a custom CFD solver, obtained a strong understanding of CFD and its internal numerical methods
* 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.
* Added an adaptive meshing algorithm, refining the computational mesh based on criteria like cell edge length and Mach Number.