

ANDI ZHOU

Canadian Citizen

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(734)-881-4192

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 *Magna Cum Laude* May 2022

Clubs/Programs – Michigan Aeronautical and Science Association (MASA), Sigma Gamma Tau, AIAA, Private Pilot License

Skills

Engineering Skills: Fluid 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 Systèmes 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.