

ANDI ZHOU

Canadian Citizen

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Education

University of Michigan Ann Arbor

Ann Arbor, MI

M.S.E Aerospace Engineering – Computation & Thermo-Fluid

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: 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.
- Optimized avionics integration using Solidworks CAD, shrinking avionics bay size by 40% and reducing vehicle weight by 5%.
- 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 100s of powertrain CAD models using ANSA, repairing surfaces, and creating efficient meshes for thermal simulations via ANSA.
- Partnered with Dassault Systèmes to enhance truck air intake water drainage, meeting SAE J554 standards using PowerFLOW.

Leadership Experience

MASA (University Rocketry Team)

Ann Arbor, MI

Aerothermal Lead

January 2021 – June 2021

- Led a team of 12 in designing, simulating, and manufacturing the largest, supersonic-capable rocket fins in organization history.
- Spearheaded high-fidelity full-body 3D CFD for a 27-ft rocket at Mach 4.49 and converged to 6th order of accuracy.
- Achieved a thermal-structural SF of 2 at Max-Q via aero-thermal-structural optimization using ANSYS Suite.
- 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.

Custom CFD Solver

Ann Arbor, MI

Programmer

January 2021 – May 2023

- Implemented a CFD solver for Euler's Equation using C++ and Python; 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 cell edge length and Mach Number.