

ANDI ZHOU

Canadian Citizen

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Education

University of Michigan Ann Arbor

Ann Arbor, MI

M.S.E Aerospace Engineering

GPA 3.83/4.00

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: Hands-on building, Uncertainty Analysis, Compressible Flow, Multi-Phase Flow, Thermodynamics

CAE Software: CATIA, IPEMotion, Star CCM+, PowerFLOW, ANSA, 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

- Took charge of a stagnant flow-mapping test rig; led the project from an empty frame into outputting flow data in just 9 weeks, providing the team with essential flow data and design insights within the L5 cooling system.
- Independently built the test rig, established electrical connections, troubleshooted various pressure sensors and flowmeters, and devised an automation script in VBS that cut the testing time from 3 hours to 30 minutes.
- Analyzed system flow by mapping 175 combinations of pump duty cycles and valve positions; obtained repeatable results. Made design recommendation that could potentially increase system flowrate by 7.5%.
- Managed the entire project from end to end, from conceptualization to completion; collaborated closely 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

- Designed, investigated, and optimized a swirl air-water separation tank which maintained a separation efficiency of 99% while decreased its mass from the original concept by 40%.
- Collaborated with Dassault Systèmes, optimized water draining in truck air intake using PowerFLOW multi-phase flow, ensuring the system is up to standards as per SAE J554.
- Cleaned 100s of powertrain CAD models and generated for them fine and efficient meshes for thermal simulations using ANSA.
- Gained extensive experience working in an Agile team and a large company of 100,000 people.

Project Team Experience

MASA (University Rocketry Team)

Ann Arbor, MI

Testing Engineer Lead

September 2021 – December 2021

- Led a team of 6 in testing the largest fin assembly (3-ft wide, 4-ft tall) that MASA has ever built.
- Investigated dynamic roll behaviors using a 5' by 7' wind tunnel; quantified moment and angular acceleration due to aerodynamic effects and explored the possibility of inertial roll coupling.
- Conducted static testing of the fin surface, analyzed data and compared with those given in Finite Element Analysis; confirming that the error range stayed within 20%.
- Optimized team design cycles; accelerated design duration by 70%.

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.
- Led aero-thermal-structure interaction studies and optimized thermal-structural SF to 2.
- Investigated transient rocket aerothermodynamic behavior at Mach 4.49 by performing high-fidelity CFD simulation leveraging ANSYS Fluent and STAR-CCM+.
- Increased the apogee of our rocket from 40,000 to 60,000 feet through aero-structural optimization.
- Coordinated with out-of-house manufacturers; in 3 months, fabricated and assembled the largest rocket fin assembly (3-ft wide, 4-ft tall) that MASA has ever built.