

ANDI ZHOU

Canadian Citizen

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Education

University of Michigan Ann Arbor

Ann Arbor, MI

M.S.E Aerospace Engineering

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: 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; Developed timelines, procured components, and constructed the test rig in just nine weeks, providing the team with essential flow data and design insights within the L5 cooling system.
- Designed instrumentation diagram; connected and troubleshooted thermocouples, pressure sensors and flowmeters; 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 recommendations 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.

Solar Ship Inc.

Toronto, ON

Mechanical, Test Engineer Intern, and Drone Test Pilot

May 2022 – August 2022

- Worked tightly with a team of 6 engineers, designed the gondola for an 11-m diameter, human piloted, solar-electric tso-rocopter airship used for disaster relief in remote areas.
- Designed and prototyped a light, ergonomic, 11-G crash-resilient extendable controller mount for an 11-m diameter airship, allowing a 2-m tall pilot to fly the aircraft comfortably and safely.
- Modeled and integrated all avionic component within the avionics bay, reduced the size of avionics bay by 40% while lowering the entire vehicle mass by 5%.
- Designed and conducted flight tests of a 3-m diameter tso-rocopter at highly irregular hours, while maintaining the safety of other operators in addition to the equipment.

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

Fin Aerostructure 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.