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 *Magna Cum Laude* 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 (2018 – 2022) | Magna Cum Laude (2022) | Sigma Gamma Tau –** 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 9 weeks, providing the team with essential flow data and design insights within the L5 cooling system.
- Designed instrumentation diagram; connected and troubleshot 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%.

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 tsorocopter 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 components within the avionics bay, reduced the size of avionics bay by 40% while lowering the entire vehicle mass by 5%.

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 Systèms, 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.

Leadership Experience

Custom CFD Solver Ann Arbor, MI
Programmer *January 2022 – May 2023*
- Initiated a custom CFD solver for Euler's Equation using C++ and MATLAB.
- Incorporated first and second order Finite Volume Method as well as advanced Discontinuous Galerkin methods.
- Designed and integrated an adaptive meshing algorithm, optimizing computational mesh based on specific parameters like cell edge length and Mach Number.

MASA (University Rocketry Team) Ann Arbor, MI
Lead CFD Engineer *January 2020 – June 2021*
- Performed high-fidelity 3D full body CFD for a 27-ft rocket traveling at Mach 4.49 and converged the simulation to the 5^{th} order of accuracy.
- Conducted aero-thermal-structure interaction studies and optimized thermal-structural SF to 2.
- Analyzed both steady and transient rocket aerothermodynamic behavior at Mach 4.49 by performing high-fidelity fluid simulation leveraging K-Omega and K-Epsilon turbulence models using ANSYS Fluent and STAR-CCM+.