ANDI ZHOU

Canadian Citizen
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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 May 2022
Clubs/Programs – Michigan Aeronautical and Science Association (MASA), Sigma Gamma Tau, AIAA, Private Pilot License

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*
- Built and operated a powertrain/battery liquid cooling system flow test rig, "the Cool Bot", yielding key pressure and flowrate data for the L5 vehicle cooling systems.
- 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+ multi-phase flow, 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 Systèms 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*
- Conducted literature review on entropy-stable and unstable CFD algorithms, then implemented these algorithms in Python for performance analysis.
- Implemented a full CFD solver from the ground-up for Euler's Equation using C++ and MATLAB; incorporated 1st and 2nd order Finite Volume Method as well as Discontinuous Galerkin Methods.
- Added adaptive meshing algorithms, decreasing computation time by almost 60%.

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 angular moment and 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.