ANDI ZHOU

Canadian Citizen
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Education

University of Michigan Ann Arbor **Ann Arbor, MI**
M.S.E Aerospace Engineering – Computation Aerodynamics **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: Tank Design, FEA, CFD, Numerical Optimization, 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*

- Took charge of a 2-year stagnating cooling system flow test rig; finished it in 9 weeks, yielding key flow data for the L5 vehicle cooling system.
- Devised an automation script in VBS that cuts the testing time from 3 hours to 30 minutes.
- Designed flow testing instrumentation diagram; worked extensively with thermocouples, pressure sensors and flowmeters.
- Made P&ID design recommendations that increased system flowrate by 7.5%.
- Managed the entire project from end to end; collaborated 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*

- Optimized a swirl air-coolant separation tank using Star CCM+, achieving 99% separation efficiency and reducing its mass by 40%.
- Partnered with Dassault Systèms to enhance truck air intake water drainage, meeting SAE J554 standards using PowerFLOW.
- Refined 100s of powertrain CAD models using ANSA, repairing surfaces and creating efficient meshes for thermal simulations via ANSA.

Leadership Experience

MASA (University Rocketry Team) Ann Arbor, MI
Aero CFD Lead *January 2021 – June 2021*

- Conducted high-fidelity 3D CFD for a 27-ft rocket at Mach 4.49 and converged to 5th order of accuracy
- 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.
- Dedicated extensive after-school hours to craft precise meshes with Y+ values under 1 and was the team's first to converge the simulation using U of M's Great Lakes HPC Cluster.

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.
- Achieved a thermal-structural SF of 2 at Max-Q via aero-thermal-structural optimization using ANSYS Suite.
- Analyzed rocket aerothermodynamics at Mach 4.49 leveraging ANSYS Fluent and STAR-CCM+.

Personal Projects

Custom CFD Solver Ann Arbor, MI
Programmer *January 2021 – May 2023*

- Independently coding a custom CFD solver, obtained a strong understanding of CFD and its internal numerical methods
- Implemented a CFD solver for Euler's Equation using C++ and MATLAB; 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 criteria like cell edge length and Mach Number.