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: Thermal/Flow Testing, Scripting, Heat Transfer, Simulation, Automation, Multi-Phase Flow
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 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%.
- 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 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.
- 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%.

Personal Projects

Custom CFD Solver   Ann Arbor, MI
Programmer   *January 2021 – May 2023*
- Obtained a strong understanding of CFD and its internal numerical methods by independently coding a custom CFD solver.
- Implemented a 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.