ANDI ZHOU

Canadian Citizen
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Education

University of Michigan Ann Arbor **Ann Arbor, MI**
Master of Science in Engineering Graduating December 2023
Major: Aerospace Engineering (Computational Aerodynamics) **GPA N/A**
Bachelor of Science in Engineering Graduated May 2022
Major: Aerospace Engineering **GPA 3.7/4.00**
Clubs/Programs – Michigan Aeronautical and Science Association (MASA), Sigma Gamma Tau, Michigan Active Aeroelasticity and Research Laboratory, AIAA

Skills

Engineering Skills: Compressible Flow, Multi-Phase Flow, Thermodynamics, Heat Transfer, Data Inferencing and Learning
CAE Software: ANSYS, PowerFLOW, ANSA, Star CCM+, Solidworks, NASTRAN, Linux OS
Coding Language: MATLAB, Python, C++, Simulink
Awards: **Magna Cum Laude | Dean's Honor List (2018 – 2022) | Sigma Gamma Tau –** National Aerospace Honor Society

Work Experience

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
Aero-thermo-dynamics Analysis Lead *January 2021 – September 2022*

- Led high-fidelity 3D full body CFD for a 27-ft rocket traveling at Mach 4.49 and converged the simulation to the 5th 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+
- Spent 100s of hours after school to generate fine and efficient meshes with Y+ values below 5 and is the first on the team to successfully converge the simulation using the U of M Great Lakes HPC Cluster

Test 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 total design duration by 70%

Personal Projects

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

- Single-handedly coded a custom CFD solver utilizing the method of fractional velocity to solve the steady incompressible Navier-Stokes equations
- Verified the above CFD code using the classic lid-driven cavity test case up to a Reynolds number of 5000
- Using the shallow water equation, programmed a transient solver investigating tank sloshing
- Programmed a Finite Volume Solver to investigate the spread of COVID-19 within a classroom leveraging concepts of potential flow
- Optimized channel flows using Finite Element Methods and principles of unstructured mesh