**ANDI ZHOU**

Canadian Citizen

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**Education**

**University of Michigan Ann Arbor Ann Arbor, MI**

*Master of Science in Engineering* Expected Graduation November 2023

**Major: Aerospace Engineering (Computational Aerodynamics) GPA N/A**

*Bachelor of Science in Engineering* Graduated *Magna Cum Laude* May 2022

**Major: Aerospace Engineering GPA 3.7/4.00**

Awards: **Dean’s Honor List & University Honors (2018 – 2022)** | **Sigma Gamma Tau –** NationalAerospaceHonorSociety

**Skills**

**Engineering Skills:** Compressible Flow, Multi-Phase Flow, Heat Transfer, Structure Analysis,

**CAE Software:** ANSYS Suite, CATIA v5, Solidworks, PowerFLOW, Star CCM+, ANSYS, NASTRAN, Linux OS, Linux HPC

**Coding Language:** MATLAB, Python, C++, Simulink

**Work Experience**

**Volvo Group Truck Technology** Greensboro, NC

*Powertrain CFD Engineer Intern*  *January 2022 – May 2022*

* Designed, investigated, and optimized, using STAR CCM+ multi-phase flow, 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
* Using PowerFLOW, assisted in electronic and HVAC thermal analysis and management

**Project Team Experience**

**MASA (University Rocketry Project Team)** Ann Arbor, MI

*Aerostructure Lead – Rocket Fins* (Team of 12) *September 2019 – Present*

* Led a team of 12 in designing, simulating, and manufacturing the largest rocket fins that MASA has ever built (3-ft wide, 4-ft tall)
* Designed the structure to a SF of 1.5 with a loading condition of 2-degree AoA at Mach 2.77, reducing the weight of the overall rocket by 10% while maintaining the same performance at identical loading conditions
* Organized design reviews, conducted engineering work sessions, led to team to eventually optimizing the apogee of our rocket by 30%
* Coordinated with out-of-house manufacturers; in 3-months, fabricated the entire fin assembly leveraging advanced sheet metal manufacturing techniques such as bump bending and brake pressing

*Aerothermodynamic CFD Engineer January 2021 – Present*

* Performed 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

**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