**ANDI ZHOU**

Canadian Citizen

98 Lillian Street, Toronto, ON, M4S 0A5 andi.zhou1324@gmail.com (734)-881-4192

**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 –** NationalAerospaceHonorSociety

**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