

ANDI ZHOU

Canadian Citizen

19 Belsize Dr, Toronto, ON M4S 1L3

andi.zhou1324@gmail.com

(734)-881-4192

Education

University of Michigan Ann Arbor

Bachelor of Science in Engineering

Master of Science in Engineering

Major: Aerospace Engineering

Clubs/Programs – Michigan Aeronautical and Science Association (MASA), Sigma Gamma Tau, Michigan Active Aeroelasticity and Research Laboratory, AIAA

Ann Arbor, MI

Graduating May 2022

Starting September 2022

GPA 3.67/4.00

Skills

Engineering Skills: CAD, FEA, CFD, Thermodynamics, Thermal Structure, Thermal Management

CAE Software: CATIA, ANSA, PowerFLOW, Solidworks, ANSYS, STAR CCM+, NASTRAN, Linux

Coding Language: MATLAB, C++

Awards: **Dean's Honor List (2018 – 2021) | Sigma Gamma Tau** – National Aerospace Honor Society

Work Experience

Volvo Group Truck Technology

Greensboro, NC

Powertrain Simulation Intern

January 2022 – Present

- Optimized water draining in air intake using PowerFLOW multi-phase flow, ensuring the system is up to standards as per SAE J554
- Conducted thermal cooling optimization for electronic components inside driver's instrument panel, ensuring temperature on semi-conductors are within 70° Celsius
- 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 10,000 people

Project Team Experience

MASA (University Rocketry Team)

Ann Arbor, MI

Aerostructure Lead – Rocket fins

September 2019 – Present

- Led a team of 12 in designing, simulating, and manufacturing rocket fins able to take on supersonic flight loads
- Designed the structure to a stress safety factor of 1.5 at Mach 2.77 and reduced the weight of the rocket by 10%
- Optimized the apogee of our rocket from 40,000 to 60,000 feet through aero-structural optimization
- Coordinated with out-of-house manufacturers; fabricated the 4-ft tall, 3-ft wide rocket fin assembly leveraging advanced sheet metal manufacturing techniques such as bump bending and brake pressing

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
- Conducted static testing and analyzed data and compared with those given in ANSYS FEA
- Quantified moment and angular acceleration due to aerodynamic effects and explored the possibility of inertial roll coupling
- Optimized team design cycles; accelerated design duration by 70%

Research Experience

Active Aeroelasticity and Research Laboratory

Ann Arbor, MI

Undergraduate Research Assistant

September 2020 – May 2021

- Evaluated BWB type aircraft with NASTRAN using SOL 101, 103, 144, 145 and 400 to study its structural, modal and aeroelastic behaviors under subsonic speed with varying angle of attack and compressibility factor
- Wrote finite element codes with MATLAB, allowing for NASTRAN to iteratively solve for varying loading conditions and automatically provide the most optimized structure for the load case given

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