ANDI ZHOU

Canadian Citizen
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Education

University of Michigan Ann Arbor **Ann Arbor, MI**
Bachelor of Science in Engineering Graduating May 2022
Master of Science in Engineering Starting September 2022 or January 2023
Major: Aerospace Engineering **GPA 3.67/4.00**
Clubs/Programs – Michigan Aeronautical and Science Association (MASA), Sigma Gamma Tau, Michigan Active Aeroelasticity and Research Laboratory, AIAA

Skills

Engineering Skills: CAD, FEA, CFD, Thermodynamics, Thermal Structure, Thermal Management
CAE Software: CATIA, Microsoft Access, 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
- Investigated into swirl tank geometry using STAR CCM+ transient, multi-phase flow
- 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