

ANDI ZHOU

Canadian Citizen

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(734)-881-4192

Education

University of Michigan Ann Arbor

Bachelor of Science in Engineering

Major: Aerospace Engineering

Ann Arbor, MI

Graduating May 2022

GPA 3.66/4.00

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

Skills

Engineering Skills: CFD, FEA, Thermodynamics, CFD-FEA Coupled Analysis, CFD-Thermal Coupled Analysis, CAD

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

Coding Language: MATLAB, C++

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

Experience

MASA (University Rocketry Team)

Ann Arbor, MI

Rocket Fin Lead

September 2019 – Present

- Led a team of 12 in designing, simulating, and manufacturing rocket fins able to take on supersonic flight loads
- Organized design reviews, conducted engineering work sessions, led to team to eventually optimizing the apogee of our rocket by 30%
- 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
- Contacted out-of-house manufacturers; fabricated a 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

- Led a team of 6 in testing the largest fin assembly that MASA has ever built
- 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%
- Investigated 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
- Optimized team design cycles; accelerated design duration by 70%

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

Berlin Institute of Technology

Berlin, Germany

International Research Intern

April 2019 – July 2019

- Verified drag coefficients and forces of experimental vehicles using wind tunnels measurements and compared with ANSYS Fluent results
- Optimized vehicle aerodynamic based on geometry changes guided by wind tunnel experiments and decreased the overall drag coefficient by 0.02

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

Certification

Private Pilot License (PPL)