

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

Expected Graduation November 2023

Major: Aerospace Engineering (Aerostructure and Computation)

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** - National Aerospace Honor Society

Skills

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

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

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

Personal Projects

In-House 6-DOF Rocket Dynamics Simulator

Ann Arbor, MI

Programmer

May 2019 - January 2021

- Worked tightly with 3 other engineers, programmed an in-house 6-Degree of Freedom rocket simulator leveraging MATLAB and numerical methods (Runge-Kutta-4)
- Taking in current high altitude wind data from NOAA, along with thrust data from the propulsion team, simulated various rocket trajectory under different boundary conditions such as partial pressurization and high crosswind
- Supported simulations through the different stages of flight operations such as launch, thrusting flight, coasting and parachuted descent
- Became highly familiar with aircraft/spacecraft dynamics and numerical methods, currently taking classes in trajectory optimization and data inference and learning.

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

Work Experience

Solar Ship Inc.

Toronto, ON

Mechanical, Test Engineer Intern, and Drone Test Pilot

May 2022 - August 2022

- Drafted flight test plans. Thoroughly examined aircraft before test flight and made sure that all safety standards are followed throughout
- Worked tightly with a team of 6 engineers, designed the gondola for an 11-m diameter, human piloted, solar-electric tsoorocopter airship used for disaster relief in remote areas
- Modeled and integrated all avionic component within the avionics bay, reduced the size of avionics bay by 40% while lowering the entire vehicle mass by 5%

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 Systèmes, 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
- Designed and conducted flight tests of a 3-m diameter tsoorocopter at highly irregular hours, while maintaining the safety of other operators in addition to the equipment

Certificate

Private Pilot License

Restricted Radio Operator