ANDI ZHOU

Canadian Citizen

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Education

University of Michigan Ann Arbor   **Ann Arbor, MI**
M.S.E Aerospace Engineering – Computation & Thermo-Fluid   **GPA 3.86/4.00**
Master of Science in Engineering   Graduating December 2023
B.S.E Aerospace Engineering   **GPA 3.7/4.00**
Bachelor of Science in Engineering   Graduated May 2022
Clubs/Programs – Michigan Aeronautical and Science Association (MASA), Sigma Gamma Tau, Michigan Active Aeroelasticity and Research Laboratory, AIAA, Private Pilot License (PPL)

Skills

Engineering Skills: Thermal System Design and Testing, CFD, FEA, Heat Transfer, Multi-Phase Flow, Data Inferencing
CAE Software: ANSA, CATIA, IPEMotion, Star CCM+, PowerFLOW, Solidworks, ANSYS, NASTRAN, Linux OS
Coding Language: MATLAB, Python, C++, Simulink
Awards: **Dean's Honor List & University Honors (2018 – 2022) | Sigma Gamma Tau –** National Aerospace Honor Society

Work Experience

Zoox Inc.   Foster City, CA
Thermal System Intern   *May 2023 – August 2023*
- Led and completed a 2-year stagnating cooling system flow test rig in 9 weeks, yielding key flow data for the battery and powertrain cooling system.
- Made system design recommendations that increased the system volumetric flowrate by 7.5%.
- Accelerated testing time from 3 hours to 30 minutes using Python/VBS automation script.
- Designed flow instrumentation diagram; worked extensively with thermocouples, pressure sensors and flowmeters.
- Managed the entire project from end to end; collaborated with the battery, compute, and powertrain team to obtain updated component data and specialized hardware.

Solar Ship Inc.   Toronto, ON
Mechanical, Test Engineer Intern, and Drone Test Pilot   *May 2022 – August 2022*
- Designed an 11-G crash-resilient extendable yoke mount for an airship cockpit, ensuring safe, reliable and ergonomic control for all pilots.
- Optimized avionics integration using Solidworks CAD, shrinking avionics bay size by 40% and reducing vehicle weight by 5%.
- Designed and conducted flight tests of a 3-m diameter tsorocopter at highly irregular hours, while maintaining maximum safety of other operators.

Volvo Group Truck Technology   Greensboro, NC
Powertrain Simulation Intern   *January 2022 – May 2022*
- Optimized a swirl air-coolant separation tank using Star CCM+, achieving 99% separation efficiency and reducing its mass by 40%.
- Refined 100s of powertrain CAD models using ANSA, repairing surfaces, and creating efficient meshes for thermal simulations via ANSA.
- Partnered with Dassault Systèms to enhance truck air intake water drainage, meeting SAE J554 standards using PowerFLOW.

Leadership Experience

MASA (University Rocketry Team)   Ann Arbor, MI
Aerothermal Lead   *January 2021 – June 2021*
- Led a team of 12 in designing, simulating, and manufacturing the largest, supersonic-capable rocket fins in organization history.
- Piloted high-fidelity full-body 3D CFD for a 27-ft rocket at Mach 4.49 and converged to 6th order of accuracy.
- Achieved a thermal-structural SF of 2 at Max-Q via aero-thermal-structural optimization using ANSYS Suite.
- Used K-Omega and K-Epsilon turbulence models in ANSYS Fluent and STAR-CCM+ to study rocket aerothermodynamics at Mach 4.49, both steady and transient.

Custom CFD Solver   Ann Arbor, MI
Programmer   *January 2021 – May 2023*
- Implemented a CFD solver for Euler's Equation using C++ and MATLAB; incorporated 1st and 2nd order Finite Volume Method as well as advanced Discontinuous Galerkin methods.
- Added an adaptive meshing algorithm, refining the computational mesh based on cell edge length and Mach Number.