

ANDI ZHOU

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Dear Ms. Kendra Coy and the Recruitment Team at Lucid,

I hope your day is going well! Recently, I had the pleasure of interviewing with Arash from the thermal team at Lucid. While I was unfortunately not selected, his genuine warmth, willingness to share insight, and the evident pride in his work just further reinforced my desire to contribute to Lucid's ongoing innovation and the vision of an electrifying future! With this in mind, I am reaching out to express my sincere interest in the Aerodynamic Engineer position at Lucid Motors.

I believe the combined depth, intensity, and outcomes of my internships and research projects have equipped me with a skill set in fluid dynamics that I am confident will help me succeed as an aerodynamic engineer.

At Volvo Truck, I optimized a swirl air-coolant separation tank using Star CCM+, achieving a 99% air separation efficiency and reducing its mass by 40%. In addition, I have prepared numerous CAD models for CFD simulations using the surfacing tool ANSA.

In my research into Entropy-Stable CFD Algorithms, I implemented my own aerodynamic CFD solver using Python and C++ for both Euler's equation of compressible flows and the incompressible Navier-Stokes equation. I firmly believe that as an aerodynamic engineer, it is crucial for us to thoroughly understand the mathematics behind contemporary CFD software.

Furthermore, at the university rocketry team, MASA, I led a team of six in testing a 4-foot rocket fin assembly in a 5x7-foot wind tunnel. We designed a special fixture that not only allowed the assembly to rotate freely but also enabled us to collect aerodynamic torque data at an airspeed of over 120 MPH.

Although the Lucid recruitment event at UMich took place over a month ago, it left me with a profound impression that lasted to this day. I not only had the privilege of interacting with several engineers but was also offered an opportunity for a test ride on Lucid Air. Everything, from the immaculate 5K display to the seamless user interface, and the exceptional noise suppression system illustrated to me Lucid's unparalleled attention to detail. It truly is a testament to Lucid's mission: designing electric vehicles that are centered around human experience. And this is a mission that I am eager to contribute to.

Thank you so much for your consideration! I believe my previous work experience and accomplishment, coupled with my strong passion for Lucid's mission, would make me a great asset as an aerodynamic engineer at Lucid Motor.

Thank you and looking forward to hearing back from the team!

Sincerely,

Andi Zhou

ANDI ZHOU

Canadian Citizen

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Education

University of Michigan Ann Arbor

Ann Arbor, MI

M.S.E Aerospace Engineering – Computation & Aerodynamic

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, AIAA, Private Pilot License

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

Zoos 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.
- 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 and repaired CAD models and surfaces using ANSA, producing error-free meshes for aerothermal simulations.
- Partnered with Dassault Systèmes to enhance truck air intake water drainage, meeting SAE J554 standards using PowerFLOW.

Research Experience

Entropy-Stable CFD Algorithms (Independent Study)

Ann Arbor, MI

Research Assistant

January 2023 – May 2023

- Reviewed and analyzed literature on entropy-stable and unstable CFD algorithms, then implemented these algorithms in Python for analysis.
- 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.
- Incorporated an adaptive meshing algorithm, refining the mesh based on cell edge length and Mach Number.

Leadership Experience

MASA (University Rocketry Team)

Ann Arbor, MI

Rocket Fin Lead

September 2018 – December 2021

- Led a team of 12 in designing, simulating, and manufacturing the largest, supersonic-capable rocket fins in organization history.
- Studied dynamic roll behaviors in a 5'x7' wind tunnel, quantified moment and angular acceleration due to aerodynamic effects.
- Spearheaded high-fidelity full-body 3D CFD for a 27-ft rocket at Mach 4.49 utilizing RANS turbulence models and converged simulations to a 6th order of accuracy.