ANDI ZHOU

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Dear Mr. Doug Wing,

At a recent Lucid Motors career fair at the University of Michigan, I had the distinct pleasure of engaging with numerous enthusiastic engineers and recruiters. However, the highlight of the event was when I was offered an opportunity to ride in a Lucid Air test vehicle. To label that experience as merely "impressive" would be a gross understatement.

From the moment I stepped into the Lucid Air, it became evident that I wasn't just in a car, but in a meticulously crafted experience. Every element, from the spotless 5K display, the seamless UI system, the exceptional noise suppression design and most importantly the unparalleled attention to detail is a real testament to Lucid's mission: designing electric vehicles that is centered around the human experience. It's a mission I'm genuinely excited about and eager to contribute to. With this in mind, I am reaching out to express my interest in the Thermal Mechanical Engineer Position at Lucid Motors.

Although I have an aerospace education, my work experience has been centered around the automotive industry. I have over 9-month of internship experience spanning across both automotive and aerospace and over 2 years of experience as a project leader in my university rocketry team MASA.

At Zoox, I revived a cooling system test rig that was stagnant for 2 years in just 9 weeks. My design recommendations, based on test data, increased the system flow rate by 7.5%. My manager highlighted my fast-paced work ethic and emphasized that I produced more data in 9 weeks than the project had in the previous 2 years.

Further enriching my expertise in mechanical design and CFD software are my internships at Solar Ship Inc. and Volvo Truck North America. At Solar Ship, I developed an extendable yoke mount for an airship cockpit capable of withstanding an 11-G crash load with a safety factor of 2. Meanwhile, at Volvo Truck, I designed a swirl air-coolant separation tank using Star CCM+, achieving a 99% separation efficiency and reducing its mass by 40% compared to the original concept.

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 a thermal mechanical engineer at Lucid Motor.

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

Andi Zhou

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Canadian Citizen
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Education

University of Michigan Ann Arbor **Ann Arbor, MI**
M.S.E Aerospace Engineering **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: Mechanical Design, FEA, CFD, Heat Transfer, Multi-Phase Flow, Thermodynamics, Data Inferencing
CAE Software: CATIA, IPEMotion, Star CCM+, PowerFLOW, ANSA, Solidworks, ANSYS Suite, NASTRAN, Linux OS, Cluster
Coding Language: MATLAB, Python, C++, Simulink, VBScript
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*
- Took charge of a 2-year stagnating cooling system flow test rig; finished it in 9 weeks, yielding key flow data for the L5 vehicle cooling system.
- Devised an automation script in VBS that cuts the testing time from 3 hours to 30 minutes.
- Designed flow testing instrumentation diagram; worked extensively with thermocouples, pressure sensors and flowmeters.
- Made P&ID design recommendations that increased system flowrate by 7.5%.
- 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.
- Collaborated with 6 engineers to design a gondola for an 11-m solar-electric tsorocopter airship for remote area disaster relief.
- Optimized avionics integration using Solidworks CAD, shrinking avionics bay size by 40% and reducing vehicle weight by 5%.
- Conducted and drafted irregular-hour flight tests for a scaled down 3-m tsorocopter, ensuring safety for both operators and equipment.

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%.
- Partnered with Dassault Systèms to enhance truck air intake water drainage, meeting SAE J554 standards using PowerFLOW.
- Refined 100s of powertrain CAD models, repairing surfaces and creating efficient meshes for thermal simulations via ANSA.
- Gained extensive experience working in an Agile team and a large organization.

Leadership Experience

MASA (University Rocketry Team) Ann Arbor, MI
Rocket Fin Lead *September 2019 – December 2021*
- Led a team of 12 in designing, simulating, and manufacturing rocket fins able to take on supersonic flight loads.
- Achieved a thermal-structural SF of 2 at Max-Q via aero-thermal-structural optimization using ANSYS Suite.
- Analyzed rocket aerothermodynamics at Mach 4.49 leveraging ANSYS Fluent and STAR-CCM+.
- Elevated rocket apogee from 40,000 to 60,000 feet via aero-structural optimization.
- Led static testing of prototyped assembly, compared results with Finite Element Analysis, and ensured error stayed below 20%.
- Optimized team design cycles; accelerated design duration by 70%.