

Education

- MSE/BSE Mechanical Engineering**, University of Michigan Ann Arbor (GPA: 4.00) *Jan 2024 - Dec 2024*
 - Digital Control Sys, Finite Element Methods, Adv Batteries, Robotic Kinematics & Dynamics, *Aug 2021 - Dec 2023*
 - Microelectromechanical Sys, Design Optimization, Experimental Design, Nanofab
- BS Aerospace Engineering (transfer)**, University of Illinois Urbana-Champaign (GPA: 3.80) *Jun 2019 - May 2021*
 - Discrete Structures, Data Structures, Flight Mechanics, Structures, Comp Architecture, Numerical Methods, Algorithms

Experience

- General Motors** / Virtual Design Development (CAE) Engineer - Warren, MI *July 2024 - present*
 - Developed software interface that organizes files into structured directories, reducing navigation complexity
 - Created modal analysis, fatigue/damage, and g-loading FEA models using static/dynamic simulations, satisfying shock/vibration requirements for speed sensor bracket
 - Conducted charge port structural analysis based on identified requirements/inputs to drive future fastener design scope
- Relativity Space** / Integrated Performance Engineer Intern - Long Beach, CA *May 2024 - July 2024*
 - Built convection GUI to automate hand calcs for 10+ geometries, improving efficiency by ~50% *May 2023 - Aug 2023*
 - Created and analyzed thermal models of Terran R throttle valve actuator/mechanism and thermal protection system, verifying thermal requirements were fulfilled, and anchored results by planning testing/instrumentation
 - Developed transient computational model of frost formation using propellant fill rate, enhancing boil-off quantification
 - Implemented postprocessing tool using API for heat flow between component subgroups, reducing runtime by ~95%
- University of Michigan** / Graduate Student Instructor - Ann Arbor, MI *Jan 2024 - Dec 2024*
 - Instructed lab sections totalling 60+ students with 95% satisfaction; taught students to run vibration, vapor compression cycle, tensile/fracture toughness, DC motor control, turbomachine, wind tunnel experiments and test data analysis
- Rivian** / Aerothermal Systems Engineer Intern - Irvine, CA *May 2022 - Aug 2022*
 - Automated StarCCM+ simulation workflow, reducing preprocessing time by 66%
 - Owned and developed insulation pack for human comfort through rapid design iteration by optimizing geometry and configuration, then conducted material stack and fan development testing, with implementation in 15,000 vehicles
 - Evaluated heat management by determining evaporator cooling power for ambient conditions and quantifying benefits of roof surface treatment and material selection for EDV and R1S, resulting in potential range improvements of ~2%
- Tesla** / Manufacturing Engineer Intern - Austin, TX *Jan 2022 - May 2022*
 - Streamlined Model Y fascia assembly line and reduced cycle time by using process flow layouts and time studies
 - Designed and assembled 2QPC buffer storage and quality inspection lighting, saving ~80% in cost
 - Established standard work/operations procedures for production, trained operators, managed schedules and vendors
 - Proposed and led key design change review, reducing finished goods transfer time by 70%
- H.A. Automotive Systems** / Design Engineer Intern - Troy, MI *Jun 2021 - Jan 2022*
 - Designed, assembled, validated green filter taillamp prototype, generating \$100,000 market value revenue
 - Employed DFMEA, DFM, and CAD modeling for plastic/metal components/enclosures, improving structural stiffness

Activities

- Illinois Space Society** / NASA RASC-AL Competition Subteam Lead *Aug 2019 - May 2021*
 - 2021 finalist team; led radiation/MMOD protection, mechanical systems, FEA of deployable lunar habitat
 - 2020 finalist team; researched nuclear propulsion, defined systems level specifications for Mars mission concepts

Skills

- C++, Java, Python, JavaScript, MATLAB, TensorFlow; NX, CATIA, SolidWorks, AutoCad; ANSA, HyperMesh
- Thermal Desktop, Ansys, TaiTherm, StarCCM+, Adams, Abaqus; STK (Lvl 1 Certified), EAGLE
- 3D printing, Mill, Lathe, Laser cut, Water jet, GD&T

Honors & Awards

- University of Michigan: Dean's List, University Honors, James B. Angell Scholar, Budd Scholarship
- University of Illinois Urbana-Champaign: Dean's List, James Scholar