

HAN ZHENG

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EDUCATION

Johns Hopkins University

Bachelor of Science

Baltimore, MD

Expected June 2026

- Mechanical Engineering (Aerospace Track)
- GPA: 3.77

SKILLS

Design & Manufacturing: SolidWorks, Creo, Onshape, GD&T, CNC Machining, 3D Printing, Composites Manufacturing

Simulation & Analysis: Abaqus, ANSYS (Mechanical, CFX), Creo Simulate, SimScale, Micro-CT

Electronics, Programming & Tools: C/C++, Arduino IDE, MATLAB, Circuit Analysis & Implementation, Microsoft Office Suite (Word, PowerPoint, Excel)

RELEVANT EXPERIENCE

Chief Engineer

Johns Hopkins University - Design/Build/Fly (DBF)

Baltimore, MD

September 2023 - Present

- Currently designing and fabricating a full carbon-fiber aircraft fuselage using wet layup techniques for the 2026 DBF competition
- Designed and integrated an aircraft empennage with a steerable tail gear using Onshape (2024-2025)
- Performed structural analysis on the aircraft wing using a self-developed MATLAB-based beam analysis tool to optimize fuel tank placement, reducing maximum bending moment by 16% (2024-2025)
- Conducted CFD simulations in SimScale for the aircraft payload at angles of attack from 4°-16° at 20 mph airflow, analyzing flow patterns around pylons to improve aerodynamic performance (2024-2025)

Mechanical Engineering R&T Intern

Albany Engineered Composites

Rochester, NH

June 2025 - August 2025

- Researched the relationship between fiber crimp and the elastic properties of 3D woven composites
- Devised and conducted experiments to study friction within woven preforms under varying environmental conditions and weaving architectures
- Simulated fixture response in Abaqus under preform compaction loads to evaluate stress distribution and deflection
- Designed a fixture in SolidWorks for securing woven preforms during µCT scanning and 3D-printed it in ABS

Mission Collaborator - Team VfOx, DAVINCI Mission

Johns Hopkins University

Baltimore, MD

September 2024 - December 2024

- Identified optimal accommodations for the Venus Oxygen Fugacity (VfOx) sensor on the mission probe based on flow simulations at descent speeds of 20 and 30 m/s using COMSOL Multiphysics
- Quantified risk levels of VfOx accommodations with 5×5 risk matrices, evaluating each accommodation through trade studies

ADDITIONAL POSITIONS HELD

Fabrication Engineer

Johns Hopkins University Whiting School of Engineering

Baltimore, MD

September 2024 - December 2024

- Developed detailed process sheets for manufacturing Stirling engine components, including the flywheel, piston housing, and base plate, based on provided CAD drawings
- Operated lathe, mill, and other tools to fabricate a Stirling engine running at approximately 200 rpm

Product Design Intern

Open Avenues Foundation [Build Project]

Baltimore, MD

August 2024 - October 2024

- Redesigned a multi-purpose veterinary syringe in SolidWorks, implementing an advanced locking mechanism at the syringe tip for secure attachment to feeding tubes and needles
- Developed detailed user needs and product specifications for the redesigned syringe, enhancing user experience and ensuring compliance with Class II medical device regulations

Research Assistant

Fluid Transport Lab

Baltimore, MD

September 2023 - August 2024

- Engineered grid plates with filleted square holes ranging from 6×6 cm to 16×16 cm to vary turbulence intensity for studying how fish schools respond to eddies of different length and time scales
- Coauthored the user manual for a Python package built for 3D Lagrangian particle tracking