

Avery J. Khan

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Summary

Aerospace Engineering graduate student with a focus on aircraft structures, flight dynamics, and autonomous systems. Experienced in wind tunnel testing, CFD simulations, and flight control systems. Strong background in structural analysis, UAV design, and systems integration.

Education

North Carolina State University

Master of Science in Aerospace Engineering

Expected May 2025

Relevant Coursework: Hypersonic Aerodynamics, Finite Element Methods, Space Flight Mechanics

University of Maryland, College Park

Bachelor of Science in Aerospace Engineering

Graduated May 2023

Capstone Project: Design and fabrication of a VTOL drone for Mars atmospheric testing

Research Experience

Graduate Research Assistant, NCSU High-Speed Aerodynamics Lab, 2023–**Present**

- Developed CFD models to simulate shock interactions in supersonic inlet flows.
- Conducted experiments using schlieren imaging and high-speed pressure sensors.

Undergraduate Researcher, UMD Space Systems Laboratory, 2021–2023

- Assisted in modeling of satellite attitude control systems using MATLAB/Simulink.
- Built and tested components for a student-designed CubeSat project.

Technical Skills

ANSYS Fluent, OpenFOAM, MATLAB/Simulink, SolidWorks, Python, CATIA, LaTeX, Git, Arduino

Selected Projects

- Simulated hypersonic flow over re-entry capsules using OpenFOAM with turbulence modeling
- Designed and prototyped a deployable UAV wing mechanism using CATIA and 3D printing

Awards and Honors

AIAA Foundation Graduate Award, 2024

Dean's List – University of Maryland, 2019–2023

Conference Presentations

“Shock Wave Behavior in Hypersonic Inlet Design,” AIAA SciTech Forum, January 2024.

“CubeSat Attitude Control Using Reaction Wheels,” UMD Undergraduate Research Conference, April 2023.

Professional Memberships

American Institute of Aeronautics and Astronautics (AIAA)

Sigma Gamma Tau – Aerospace Engineering Honor Society