Rohan Joshi

(305) 904 - 7446 | rohan.joshi@duke.edu | https://rohanjoshi3.github.io/

EDUCATION

Duke University, Durham NC (GPA: 4.00) **August 2022 - May 2026**

- **Major:** B.S.E. in Mechanical Engineering with Certificates in Aerospace Engineering and Innovation & Entrepreneurship
- **Relevant coursework:** ME Design, Statics, Aerospace Structures, Thermodynamics, Dynamics, Mechatronics, Fluids, Aircraft Performance
- **Honors:** Academic Dean's List (6x)

PROFESSIONAL WORK EXPERIENCE

SpaceX, *Dragon Structures Engineering Intern* **May 2025 - August 2025**

- Validated yield and ultimate margins for Ground Support Equipment (GSE) using Ansys; collaborated with launch engineering team for completed integration at Cape Canaveral launch site
- Authored a Standard Repeatable Procedure (SRP) for Dragon ballasts that pre-approves recurring damage, expanding allowables up to 20x; developed a master hand-calculation tool integrating thermal knockdowns and flight stress states, accounting for all structural failure modes
- Conducted a damage equivalency and fatigue analysis for Dragon lifting lugs for 15-flight qualification test; built an Excel model to determine required test cycles under specific test load cases, performed bushing trade study, and used NASGRO to confirm no fracture risk with current pitting
- Designed and qualified a new load test for a Dragon component by building linear and non-linear FEMAP models; correlated FEMAP results with flight data post-processed in ABAQUS via META, and redesigned test GSE to improve correlation and achieve more representative loading

General Dynamics Mission Systems, *Integration and Test Engineering Intern* **May 2024 - August 2024**

- Designed and assembled 4 mounting fixtures in Creo for tachometers, flow meters, and encoders to aid critical test data collection
- Performed Ansys analysis to validate mount capability under vibration and dynamic loading within test setup
- Produced engineering drawings and navigated designs through formal program approval and release processes
- Assisted with Design Verification Testing (DVT) and Durability Testing, capturing accurate performance data to validate system readiness
- Developed a Python script to classify 40+ oil samples per NAS 1638, automating particulate identification and quantification in hydraulic fluid, cutting analysis time from hours to minutes and improving repeatability

Duke University CoLab Makerspace, *Technician* **December 2023 - Present**

- Actively assisted in 50+ student-led projects by offering technical engineering expertise and ensuring the smooth operation of machinery such as water jet, CNC mill, 3D printers, and laser cutter

Embry-Riddle Aeronautical University: Nanotechnology and Materials Lab, *REU Intern* **May - August 2023**

- Conducted research comparing P-type additives in semiconductors to enhance OECT sensitivity and selectivity for glucose detection
- Utilized advanced laboratory equipment, including the Keithley Source Meter, Bode Analyzer, 3D Printers, SEM, and Profilometer
- Presented promising research findings in a paper and at the Embry-Riddle REU Conference

LEADERSHIP AND EXTRACURRICULAR ACTIVITIES

Duke AERO, *Vice President, Treasurer, Aerodynamics Simulations Engineering Lead, Avionics Engineer* **September 2022 - Present**

- Facilitated cross-team design reviews and built a Confluence knowledge base; led technical workshops to onboard and upskill new members
- Co-led a 45-member team across 7 subteams; grew club budget to $50K (+33%) by securing NC Space Grant (NASA) and other grants; owned purchasing procurement and vendor management; reallocated funds to critical-path builds and reconciled accounts with university finance office
- Directed the FINsight project, developing PCB strain gauge fins; optimized placement (Ansys modal/impact test) of gauges, led wind-tunnel/thermal calibration campaigns, and correlated strain to aero loads for optimizing fin manufacturing; earned podium presentation
- Conducted Ansys Fluent CFD on various rocket configurations, including canards, air brakes, and fins, to iterate aerodynamic design
- Led OpenRocket modeling and cross-team reviews, validating CG/CP/static margin and off-the-rail velocity to ensure flight readiness
- Played a pivotal role in the CAD/FEA/manufacturing of the avionics bay, CO2 Separation, black box, and air brakes of competition rockets

Duke Engineering Student Government, *Director of Academic Affairs for Mechanical Engineering* **January 2024 - Present**

- Effectively coordinated with Mechanical Engineering department administration to revise the engineering curriculum based on student feedback and industry trends, and organized a town hall meeting to address student concerns, enhancing academic engagement

AWARDS AND ACHIEVEMENTS

- Duke AERO: Spaceport America Cup Jim Furfaro Award for Technical Excellence (FINSight) **2024**
- Duke AERO: Spaceport America Cup 1st Place in Design & Build **2024**

OTHER EXPERIENCES AND INTERESTS

Software: NX | Creo | SolidWorks | Onshape | FEMAP w/ Nastran | Ansys | BETA CAE META | Nasgro | Openrocket | Confluence | Python
Manufacturing & Design: Laser cutting | 3D printing | Soldering | Mill | Waterjet
Interests: Intramural Football | Basketball | Drones | Gym | Music | Meditation