Aditya Chadha

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Education

North Carolina State University | Raleigh, NC **August 2022-Present**
Pursuing a Bachelor of Science in Aerospace Engineering, Minor in Mathematics
GPA: 3.33

Skills

Technical Knowledge: HTML, MATLAB, Python, Java, Building and maintaining Computer hardware
CAD: SolidWorks, 3Dexperience, AutoCAD, Ansys: Spaceclaim, Workbench, Fluent

Experience

Ontic | Manufacturing Engineering Intern | Creedmoor, NC **May 2024-July 2024**

- Enabled the transfer of new products for production from Collins Aerospace using the 3P manufacturing methodology. Brainstorming, diagramming, and building cell layouts improved and increased the production rates of these products by 33%.
- Attempted the implementation of a Machine Learning Vision System to improve production efficiency. Projected improvement was reducing product waste by 90% through the reduction of nonconformance and defects of the parts. Cut costs in the inspection budget by 50%.
- Supported project management team with data ingest of parts, drawings and operation sheets allowing structured access to each part for manufacturing

NC State | BEFAST Research Assistant | Raleigh, NC **May 2025- Present**

- Concentrated on doing CFD Simulations for different projects coupled with Conjugate heat transfer CFD simulations for unwrapped Rotating Detention Engines

Project - AeroSpike Design and Simulation Proposal

- Simulated different Aerospike geometries, based on a paper, from Mach 3 to Mach 5 in Ansys Fluent to analyze heat flux, heat load, and propose a material choice to withstand those heat loads.
- Resolved the peak heat flux over the Aerospike at 3 - 5 Megawatts depending on the speed. The material selected for withstanding the heat load was Hot-Pressed Silicon Nitride.
- Employed trajectory analysis in OpenRocket with the Aerospike geometry and observed a 3-5% drag reduction with a 10% increase in apogee when modeled on a SpaceShot hobby rocket.
- Designed the Aerospike to be a deployable assembly from the Nosecone using Solidworks

University Engagement

High Powered Rocketry Club **January 2023- Present**

- Developing an Openrocket Plugin in Java to simulate the logic of the Club's Airbrake logic to better predict Apogee.
- Led the Aerodynamics sub-team and worked in conjunction with the Airbrakes team of a project rocket Legacy. Ran various CFD simulations in Ansys fluent to quantify the drag force acting on the rocket from the airbrake's deployment at Mach 0.379.
- Ran simulations to confirm the location of the center of pressure, center of gravity, and stability of the rocket through its flight through a python library, RocketPy.

First Year Engineer Design Day **April 2023**

- Tasked as the Mechanical Design Leader to build a floor mounted crossbow that could shoot 30ft accurately.
- Collaborated with the other Design Lead in SolidWorks to create a CAD model of the crossbow before the fabrication of a prototype.
- Facilitated meetings to inform my other team members, on the state of the prototype. Asked for feedback on the shaft length and material for the string to fire the bolt in the main shaft to improve overall reliability.

Honors and Certificates

Semester Dean's List **December 2022**
CSWA Academic (SolidWorks) **January 2023**
NCSU Honors Program **August 2022 - Present**