SIDDHARTH GOEL

CURRENT ADDRESS
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EDUCATION

Purdue University, West Lafayette, IN — August 2021-December 2024
Bachelor of Science in Aeronautical and Astronautical Engineering
Minor: Computer Science
GPA: 3.87 / 4.00
Honors: Dean's List and Semester Honors- All semesters (Fall 2021 – Fall 2023)
Interests: CFD, Aircraft Design, Control systems engineering, Machine Learning and Artificial Intelligence

Technical Skills**:** MATLAB, Simulink, Java, C, C++, Python, NX, CFD, Simcenter 3D, Ansys, XFLR5, Jira
Relevant Coursework**:**

- Aerodynamics
- Control Systems
- Data Structures And Algorithms
- Applied Optimal Control and Estimation
- Dynamics and Vibrations
- Intro to Applied Stochastic Processes
- Advanced Programming in C

DESIGN EXPERIENCE

Purdue Space Program (PSP), Purdue University

Active Controls- Structures Lead — August 2022-August 2023

- Developed the structural architecture of a lander vehicle.
- Designed and manufactured a 3-D printed gimbal with 2 degrees of freedom for thrust vectoring.
- Optimized air intake design for the vehicle to improve thrust output using CFD.

Active Controls – Avionics Software Lead — August 2023 - Present

- Developed a buffer system for onboard telemetry handling between flight computer and sensors.
- Wrote testing and control scripts for various components and actuators in C++, including system identification.
- Developed a custom Kalman filter for state estimation paired with an LQR controller.

Drone Design Intern at Redon Systems — May 2023 – August 2023

- Wrote iterative sizing code for electric UAV's using MATLAB.
- Completed the preliminary design of a barrel launched electrically powered UAV using NX and XFLR-5.
- Conducted design and stability analysis of UAV's using CFD to implement optimizations using Simcenter 3D.
- Modelled flight dynamics in Simulink for an aircraft with only pitch and roll control.

Purdue Aerial Robotics Team — August 2023 - Present

- Developed an electric aircraft sizing algorithm for initial mass estimation, and airfoil selection of an unmanned aerial vehicle.
- Conducted planform design, performance and stability analysis, CFD, and wind tunnel testing for design validation.
- Manufactured and Assembled wing section for the aircraft's structure using composites.
- Produced a system design methodology, and set guidelines with leadership to develop an improved design process for future teams.

RESEARCH EXPERIENCE

Research Assistant, VRSS labs, Purdue University — August 2023 - Present

- Developed an accident analysis framework for establishing safety standards in construction in space.
- Analyzed disasters using FLAPP framework to capture inter-player interactions, pathogen propagation, and system failure.
- Designed an app to autonomously create the analysis graphics using analysis tables and user provided data.

LEADERSHIP EXPERIENCE

Purdue Space Program, Active Controls – Avionics Lead/ Structures Lead — August 2022 – January 2024

- Directed teams of 10 members spread across 2 projects building autonomous lander vehicles.
- Coordinated with leadership and technical teams to set project requirements, goals, and team culture.
- Worked with project management tools such as git hub, JIRA, and confluence to handle task allocation and documentation.
- Introduced guided analysis formats such as Root Cause and Correction analysis to troubleshoot problems and inspect accidents.

AFFILIATIONS - Honors Society for Aeronautical and Astronautical Engineers – Sigma Gamma Tau (SGT) — August 2022 - Present