SIDDHARTH GOEL

CURRENT ADDRESS

First Street Towers 1250 First Street

Room 563

West Lafayette, IN 47906

+1 (408)-333-2025

goel68@purdue.edu

www.linkedin.com/in.goelsiddharth523/

https://www.siddharth-portfolio.com/

EDUCATION

Purdue University, West Lafayette, IN

Bachelor of Science in Aeronautical and Astronautical Engineering

Masters of Science in Aeronautical and Astronautical Engineering

Minor: Computer Science

GPA: 3.83 / 4.00

Honors: Dean's List and Semester Honors- All semesters (Fall 2021 – Fall 2023)

August 2021-December 2024

January 2025 – December 2025

Technical Skills**:** MATLAB, Simulink, Java, C, C++, Python, NX, Ansys, XFLR5, Jira, Confluence

Relevant Coursework**:**

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

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 using CAN, I2C, and SPI protocols.
- Wrote testing and control scripts for various components and actuators in C++, including system identification.
- Conducted post-test data analysis to inform and guide design decisions.
- 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.
- Worked on the preliminary design of a barrel launched electrically powered UAV using NX and XFLR-5.
- Conducted design optimizations using CFD and MATLAB.

AAE 568 Project - Optimal Control of a Quadcopter with a slung load   January 2024 – May 2024
- Worked in a team of 3 to design a control law for a nonlinear Quadcopter with a slung payload system.
- Conducted a literature review for problem selection, scoping, and prior solutions.
- Utilized optimal control theory to maximize payload capacity for a given trajectory, while satisfying oscillation constraints.
- Used MATLAB's optimal control toolset along with the bvp4c solver to numerical generate a control history.
- Solved numerical problems using transformations, scaling, and approximations to encourage convergence and verify accuracy.

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.
- Set up file input output to communicate between different tools used by different parties and automate data transfer between them.

LEADERSHIP EXPERIENCE

Purdue Space Program, Active Controls – Avionics Lead/ Structures Lead/Systems Lead   August 2022 – Present
- 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.
- Utilized 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