**Anshul Jain**

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**EDUCATION**

**Master of Science in Aerospace Engineering Sciences**

University of Colorado at Boulder Aug 2023 - Dec 2025

**Bachelor of Engineering in Aerospace Engineering**

R. V. College of Engineering, Bengaluru Aug 2019 - Jul 2023

**TECHNICAL SKILLS**

**Control Systems:** Linear Control, State Estimation, Kalman Filtering, State-Space Control, Control System Design

**Flight Control & Aerospace:** Aircraft & Spacecraft Dynamics and Control, Performance & Stability, Avionics

**Systems Engineering & Optimization:** Fundamentals of Systems Engineering, Operations Research

**Programming & Tools:** MATLAB, Simulink, Python, C, C++, R, Fusion 360, VS Code, Git, Mathematical Modeling

**WORK EXPERIENCE**

**CU Boulder** Aug 2023 – Present

*Teaching Assistant, Boulder, CO*

* Strengthened communication and interpersonal skills by effectively explaining complex concepts and assisting students in applying theoretical knowledge to practical laboratory experiments.
* Developed leadership and team management skills through organizing and facilitating laboratory activities, ensuring smooth operation and fostering an environment conducive to learning.
* Enhanced problem-solving and critical thinking abilities by guiding over 50 students weekly through challenges, providing tailored support during office hours, and offering constructive feedback on exams.

**AIRBUS** June 2022 - Aug 2022

*Flight Control Intern, Bengaluru, IN*

* Developed 6 DOF State-Space model and PID Controller for longitudinal stability of YAK-54 aircraft using MATLAB and Simulink, analyzing system stability via poles and zeros.
* Simulated aircraft performance by plotting key outputs (pitch rate, pitch angle, position and altitude) and optimized system stability using feedback from Gyroscope and Accelerometer transfer functions.
* Collaborated with a cross-functional team of five engineers, contributing to control system design, optimization, and performance evaluation, while honing communication and teamwork skills in a fast-paced environment.

**PROJECT EXPERIENCE**

**CU Boulder** Aug 2023 – May 2024

*Graduate Project – Hardware & Simulation Engineer, Boulder, CO*

* Designed and developed Attitude Determination & Control Module for CubeSat applications, focusing on achieving 3 arcsec pointing accuracy and compact design requirements.
* Led hardware trades and selected components for the module, ensuring compact 0.5U volume and 0.885kg weight, while documenting trades and component functionality.
* Created Digital Sun Sensor model in C++ using Basilisk framework for simulation environment, contributing to the system’s overall performance evaluation and optimization.

**R. V. College of Engineering** Mar 2023 – July 2024

*Senior Project Team Member, Bengaluru, IN*

* Collaborated with a cross-functional team to design a novel aeroshell aimed at improving heat dissipation during spacecraft reentry, enhancing thermal protection efficiency.
* Gained hands-on experience in large-scale project contributions while working under the guidance of a project lead in a structured team environment.
* Demonstrated strong conflict resolution and communication skills by addressing interpersonal challenges, maintaining team cohesion, and refining my interest in control systems.

**LEADERSHIP EXPERIENCE**

**Team Antariksh, R. V. College of Engineering** Oct 2019 – Aug 2022

*Recovery Sub-System Engineer, Bengaluru, IN*

* Led the design and testing of dual parachute recovery systems for sounding rockets, ensuring effective recovery for rockets with 2k and 10k feet apogees.
* Trained and mentored new team members, guiding them on software tools and parachute system design, while overseeing successful integration of parachute dynamics.
* Conducted ground testing and CFD analysis to optimize parachute performance, including incorporating spill holes to reduce wobble and lateral drift, ensuring reliable recovery operations.

**COURSE PROJECTS**

**Speed Control of a Brushless DC Motor using LQR** May 2022 – June 2022

* Designed and implemented a Linear Quadratic Regulator in MATLAB to regulate the speed of a brushless DC Motor, ensuring stability and performance under varying load conditions.

**Animate Images using Mathematical Modeling** May 2022 – June 2022

* Developed mathematical models in MATLAB to animate images by manipulating their brightness using Gaussian distribution transformations.

**Numerical Analysis of Effects of Wind Tunnel Blockages on Wing Performance** May 2022 – June 2022

* Simulated and analyzed the impact of wind tunnel blockages on the aerodynamic performance of a wing, using SolidWorks for geometric modeling and ANSYS for CFD analysis.

**Aerodynamic Analysis of NACA0015 Airfoil** May 2021 – June 2021

* Conducted aerodynamic simulations and performance analysis of the NACA0015 airfoil using QBLADE and ANSYS, focusing on lift, drag, and pressure distributions for various angles of attack.

**RESEARCH PAPERS**

**73rd International Astronautical Congress**, Co-author, ParisNov 2021 - Sept 2022

* Vageesha S, Darpan B, Trisha A, Anshul Jain, Greeshma A, Rithwik R, “Study of Drag Characteristics of a Parachute for landing on planets and moons with different atmospheric conditions and its optimization using gases with varying properties”.