Anshul Jain

anshul.jain@colorado.edu | +1-206-600-1808 | https://www.linkedin.com/in/anshul-jain1711/ | Boulder, CO

SUMMARY

Graduate Aerospace Engineering student with expertise in Control Systems, State Estimation, and Systems Engineering. Experienced in designing and implementing control solutions with hands-on proficiency in MATLAB, Simulink, and Python. Proven ability to lead cross-functional teams, mentor peers, and manage complex engineering projects from concept to execution. Adept at problem-solving, communication, and critical thinking, with a demonstrated passion for applying control engineering principles to real-world challenges in aerospace and automotive industries.

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

- Conducted laboratory sessions assisting students in implementing theoretical concepts through hands-on experiments, leading to improved comprehension and practical problem-solving skills.
- Managed and optimized lab workflows for over 50 students weekly by structuring experiment modules, ensuring seamless execution, and enhancing student engagement.
- Provided one-on-one academic support through office hours for addressing academic challenges, clarifying complex concepts and improving student exam performance.

AIRBUS — June 2022 - Aug 2022
Flight Control Intern, Bengaluru, IN

- Developed 6 DOF State-Space model and PID Controller for the YAK-54 aircraft using MATLAB and Simulink to analyse system stability, enabling accurate assessment through poles and zero analysis.
- Simulated aircraft performance by modeling key flight parameters such as pitch rate, pitch angle, position and altitude, optimizing system stability using feedback from Gyroscope and Accelerometer transfer functions.
- Collaborated with a cross-functional team to refine flight control strategies, improving aircraft manoeuvrability and contributing to system-wide performance optimization.

PROJECT EXPERIENCE

CU Boulder — Aug 2023 – May 2024
Graduate Project – Hardware & Simulation Engineer, Boulder, CO

- Designed and implemented an 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 a 0.5U module by evaluating performance criteria and documenting trade-offs, ensuring seamless system integration and function validation.
- Developed a Digital Sun Sensor model in C++ using Basilisk framework to enhance the simulation environment, contributing to improved orientation tracking.

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

- Designed and tested a dual-parachute recovery system for sounding rockets reaching up to 10,000 feet, ensuring successful and stable descent through aerodynamic optimization.
- Mentored new team members by providing training on software tools and parachute system design, accelerating their integration and contributing to overall team efficiency.
- Conducted CFD analysis and ground testing to refine parachute dynamics, incorporating spill holes to minimize wobble and lateral drift for improved recovery reliability.

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, Paris Nov 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".

AWARDS AND ACHIEVEMENTS

E-Summit, R. V. College of Engineering July 2022
Team Member

- Qualified among top 10 out of 32 teams (Rank 1 in Round 1) at Business Marathon, E-Summit, RVCE for our service-based Road Transport solution for damaged roads in hilly areas during rainy season.

R. V. College of Engineering Jan 2020
Scholarship Awardee

- Awarded the SAARTHAKA TRUST Scholarship for securing Rank 1 in Aerospace Engineering (2019), with a scholarship sum of $60.

VOLUNTEER EXPERIENCE

R. V. College of Engineering May 2022
Emcee

- Coordinated a 5-day Faculty Development Program (FDP) focused on the applications of Machine Learning algorithms in Aerospace Engineering, facilitating sessions and ensuring smooth event coordination.

RSS Vishwa Sangh Shibir Dec 2015
Emcee

- Served as the Tamil-language emcee for the 2015 RSS International Conference, effectively engaging with delegates from over 45 countries after acquiring required proficiency in the language within five days.

LANGUAGES

English: Professional Proficiency
Hindi: Native Proficiency