**Anshul Jain**

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**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, 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”.

**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