Divij Garg

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Education

University of Illinois at Urbana-Champaign GPA: 3.92/4.00

Bachelor of Science in Computer Science & Mathematics — Chancellor's Scholar *August 2022 – May 2026*

Relevant Coursework: Algorithms, Data Structures, Systems, Numerical Methods, Differential Equations, Probability

Experience

Varda Space Industries El Segundo, CA

Program Management Intern *May 2025 – Present*

- Managing spacecraft deliverables, test campaigns, and mission scheduling to align with program milestones.

NASA L'Space Mission Concept Academy Remote

Project Manager *August 2024 – December 2024*

- Submitted a preliminary design review for a lunar mission as part of a NASA academy teaching mission development.
- Managed team of 12 through weekly meetings and assignment of tasks and de-scoped with a 30% budget cut.
- Developed mission budget, 7-year GANTT chart for mission schedule, trade studies for mission instruments, rover model through NX-CAD, and risk charts/matrices and verification matrices for payload subsystem.

Virginia Tech Physics REU Blacksburg, VA

Radio Astronomy Researcher *May 2023 – July 2023*

- Conducted comprehensive analysis of over 300GB of data on pre-existing galaxy hydrogen patterns utilizing Linux.
- Co-authored **a research paper** detailing two groundbreaking discoveries, contributing to an extensive 10+ year study.
- Presented research at two research symposiums to over 200 attendees, receiving feedback and inviting further discussion.

Illinois Combinatorics Laboratory Champaign, IL

Math Research Assistant *May 2021 – May 2023*

- Led the development of an innovative Python algorithm with NumPy and SymPy, speeding large polynomial calculations by 60% through threading, leading to the discovery of new formulae and patterns within the dataset.
- Examined large mathematical datasets through Linux packages/Jupyter Notebook to identify patterns in polynomials.

Leadership & Involvement

Illinois Space Society Guidance, Navigation, and Control (GNC) Team Champaign, IL

GNC Team Lead *July 2025 – Present*

- Leading implementation of Extended Kalman Filter and Unscented Kalman Filter for rocket state estimation.

GNC Team Member *August 2024 – June 2025*

- Developed and refined **rocket systems code** with a focus on memory optimization, reducing memory usage by 25%.
- Engineered flight software in C++ to calculate rocket tilt angle for the second stage launch.

Human Lander Challenge (HuLC) Champaign, IL

Software Team Lead *December 2024 – June 2025*

- Developed two-phase flow fluid simulations of cryogenic line chill-down using GFSSP and Python to model microgravity propellant transfer, validating **results** against published benchmarks and integrating thermal and pressure analyses.
- Achieved finalist status in annual NASA HuLC competition and received Best Technical Presentation award.

Illinois Model United Nations Champaign, IL

President *December 2023 – May 2024*

- Led 8-person executive board, expanded conference attendance by 60% and club membership by 25%.
- Improved gender ratio (10:1 to 2:1), increased weekly meeting attendance by 70%, and reduced costs by 15%.

Projects

Vertical Landing Rocket Challenge March 2024 – April 2024

- Worked on the gimbal assembly for motor control and testing with the avionics system in Python for controlled landing.
- Constructed fins to stabilize rocket dynamics and built/attached shock absorbers and landing legs to main rocket body, resulting in near-optimal landing sequence within the test launch and Best Landing Sequence Award.

Technical Skills

Programming Languages: Java, Python, C, C++, JavaScript, TypeScript, HTML/CSS, Haskell, FORTRAN
Developer Tools: Linux, Git, Docker, Firebase, Android Studio, Azure, NX-CAD, Jupyter Notebook, Figma
Libraries & Frameworks: REST, React, MATLAB, NumPy, Matplotlib, Pandas, ChakraUI, Node.js