

# Ashima Puri

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Portfolio: <https://cornell-mae-ug.github.io/fa25-portfolio-ap4224/>

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## EDUCATION

**Cornell University**, College of Engineering, Ithaca, NY

**Aug 2024 - May 2028**

Bachelor of Science, Mechanical Engineering, Engineering GPA: 3.2

**Relevant Courses:** Statics and Mechanics of Solids, Dynamics, Mechanical Design, Thermodynamics, Electromagnetism, Mechanics & Heat, Galaxies Across Cosmic Time, Computing, Introduction to Mechanical Engineering, Differential Equations, Multivariable Calculus, Calculus, General Chemistry

## PROJECT EXPERIENCE

**Cornell Mars Rover Project Team**, *Drivetrain Engineer*

**Jan 2025-Present**

- Redesigned rover wheels and actuators in Autodesk Inventor, optimizing wheel treads to improve traction and reduce stress concentrations, resulting in a 20% increase in climb performance
- 3D printed and tested multiple wheel prototypes for effective traversal across rocky Mars-simulated terrain to evaluate traction, durability and ability to avoid and climb out of holes
- Fabricated 20+ drivetrain components and integrated with suspension, actuator, frame, and electrical systems to optimize performance and traction

**Robot Design Project**, *Robot Engineer*

**Dec 2024-Present**

- Built a remote-controlled mobile robot, integrating mechanical structures, sensors, motors, and electronics to ensure reliable driving and wireless remote control
- Implemented a gripping mechanism using rubber grippers to allow the robot to pick up and transfer objects and manipulate containers such as bottles to pour a glass of water
- Redesigned the drivetrain and wheels to traverse across different kinds of surfaces, including indoor floor coverings and grassy terrains

**Circle K at Cornell University**, *Fundraising Chair*

**Nov 2024-Present**

- Led a team of 20 undergraduates in a week-long fundraiser to support the mental health awareness Sophie Fund, raising \$500 through 25 hours of cake pop and rice krispie sales
- Managed event logistics, budgeting, marketing, and task delegation to lead successful fundraisers for multiple charities and group needs

**GE Aerospace**, *Explore Engineering Participant*

**June 2025**

- Analyzed diverse energy sources for propulsion systems, including cost, energy density, storage requirements, and how they impact design decisions
- Conducted detailed research on bypass and compression ratios and their impact on turbofan engine design, including fan diameter, noise, and material limitations

## RESEARCH EXPERIENCE

**Student Spaceflight Experiments Program**, *Co-Founder & Assistant Community Director* **June 2021-June 2024**

- Designed experimental hardware such as test tubes, containment system, and fluid transport setups to ensure astronauts on the International Space Station could safely conduct an experiment furthering space agriculture which studied the effects of microgravity conditions on nematodes
- Mentored 15 student research teams in developing proposals for experiments performed under microgravity conditions on the International Space Station in partnership with NASA and NCESSE

## SPECIALIZED SKILLS & CERTIFICATIONS

**Skills:** CAD (Autodesk Inventor, Autodesk Fusion 360, CREO, Siemens NX, Solidworks, AutoCAD); ANSYS; Microsoft Suite; Machining (3D Printer, Hand Tools, Power Tools, Soldering, Drill Press, Laser Cutter, Welding); Electromagnetism (RF systems, Circuits); Lab View; Confluence; Teams

**Programming:** ROS, Arduino, Python, MATLAB, Java, C++

**Certifications:** Kumon Math Program Graduate, "PredictionX: Lost Without Longitude" from HarvardX, International Baccalaureate Program, Air Force ROTC Type 1 Scholarship

**Languages:** Hindi (Seal of Biliteracy), Spanish (Seal of Biliteracy)