Nidhi Shah

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linkedin.com/in/-nidhi-shah/ Engineering Portfolio

EDUCATION

Columbia University/BS Mechanical Engineering **New York, New York**
Fu Foundation School of Engineering and Applied Science | **GPA:** 3.6 Expected 2026

Skills: NX CAD, SolidWorks, Sketching, STK, 3D Printing, MATLAB, Thermal Desktop, Milling, Lathe, Python, Java

Relevant Coursework: Spaceflight Mechanics, Robotics Studio, Aerospace Human Factors

WORK EXPERIENCE

NASA Jet Propulsion Laboratory
Intern, Mars Sample Return – Spacecraft Mechanical Engineering June 2025 – August 2025
- Designed precision hydraulic press tooling for ~5000 lbf spacecraft separation joint press-fit/removal using trade studies
- Modeled and managed large spacecraft and GSE assemblies in NX for torquing operation in constrained ATLO environment
- Created an Excel tool linked to CAD to efficiently design and iterate mass models used for dynamic and structural testing
- Owned tooling qualification near flight hardware, presenting design trade-offs and producing GD&T-controlled drawings

Psyche Inspired
Intern, Iridium Class September 2024 – May 2025
psyche.ssl.berkeley.edu/get-involved/psyche-inspired-iridium-class/psyche-inspired-nidhi-shah/
- Completed 4 artworks that highlight NASA's Psyche mission as a mission ambassador to be posted on social media
- Collaborated with Psyche scientists and engineers to create mission-inspired visual art and a card game

L'SPACE Mission Concept Academy (MCA)
Lead Systems Engineer May 2024 – August 2024
- Led interdisciplinary virtual team of six engineers and integrated all subsystems through MCR, SRR, MDR, and PDR
- Designed a rover capable of traversing and prospecting lunar volatiles within shadowed regions at the Lunar South Pole
- Developed rover CAD, CONOPS, N^2 chart and system block diagrams using JMARS and trade studies to select COTS parts
- Earned skill badges in Teaming, Requirements, Project Management, Systems Topics, Risk Management, and Heat Transfer

Space Dynamics Laboratory
Intern, University Nanosatellite Program Mission Concept Academy May 2023– August 2023
- Developed budgets, mission requirements, and success criteria, designed payload, modeled thermal and pointing systems
- Presented at design reviews and attended 2023 SmallSat Conference in Logan, Utah, discussed with prospective vendors
- Collaborated with four university students to apply systems engineering principles to plan, design, and engineer 6U CubeSat
- Continued towards 2027 launch throughout school year with new members of the larger Columbia Space Initiative club

LEADERSHIP EXPERIENCE

Columbia Space Initiative
Cubesat Team Lead March 2023 – Present
- Led design, iterative prototyping, machining, and integration of a flight-ready 1U CubeSat deployment mechanism
- Design 1U mission for launch in April 2026 with a group of ~50 students, coordinate integration and vibration testing
- Create 6U full and simplified CAD, thermal simulations on Thermal Desktop, analyze results and design thermal systems
- Present progress during design reviews to engineer and non-engineer audiences, write grant proposals for funding

NASA RASCAL Competition Team Lead September 2022 – May 2024
- Led development of detailed mission architecture, CONOPS, budgets, risk matrix, TRL table, and requirements
- Collaborated on seven-page proposal, SolidWorks CAD modeling of innovation, created video presentation for submission
- Conducted meetings twice a week to design a large-scale lunar south pole prospector mission with a team of 15 students

Columbia Formula SAE
Body Lead, Frame Body Aero September 2022– September 2024
- Modeled nose cone, and mounts in SolidWorks, analyzed and optimized aerodynamics in ANSYS, tested body materials
- Ensured rules compliance, completed documentation, design reviews, coordinated livery design and body finishing
- Conducted weekly teamwork sessions to review progress, delegate tasks, and teach technical skills in CAD and testing