Pranav Narayan

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EDUCATION

University of Maryland, College Park - University Honors — College Park, MD

B.S., Aerospace Engineering - Honors; B.S., Computer Science **GPA: 4.0** Expected May 2026

TECHNICAL EXPERIENCE

Students for the Exploration and Development of Space - SEDS@UMD

Satellite Fabrication - Thermal Subteam Lead Sept. 2022 - Present

- Used Thermal Desktop to develop, in a team, innovative and precise heating for an uninsulated CubeSat payload at 30+ km altitudes, maintaining temperature within the middle 50% of the electronics' range for 2+ hours.
- Conduct research on vacuum phase-change materials, under Dr. Eric Silk, constructing an aluminum phase-change material setup to sustain sensitive electronics over 100+ thermal cycles.

Executive Secretary Apr. 2023 - Dec. 2023

Co-President Dec. 2023 - Present

- Manage and maintain file systems and a membership database for 150+ members of SEDS@UMD, ensuring accurate member information and quick, reliable, controlled file access.
- Handle all financial requests and ledgers for three separate projects, coordinating purchases with Student Government, the College of Engineering, and individual vendors

Robotics @ Maryland

Pneumatics Lead Oct. 2022 - Present

- Lead a team of 5 in developing a solenoid-based pneumatics system to activate a grabbing claw and underwater torpedo, eliminating all motors and reducing power draw by 40% thus far.

Over-Terrain Vehicle (OTV) - Intro to Eng. Design

Software and Mission Lead Fall 2022

- Integrated, using an Arduino, 4 ultrasonic sensors and an H-bridge to detect and navigate an autonomous vehicle around several obstacles to a designated end zone.
- Developed a mission system, using CAD and an Arduino, that utilized an arm and servo motor to retrieve an electric duty cycle within 5% accuracy from the inside of a cylindrical pylon.

Research in Strength of Honeycomb Structures - Intro to Aerospace Fall 2022

- Modified honeycomb structures, using CAD, by identifying superior combinations of Buckling Initiators for compression tests, resulting in a 15% increase in ultimate energy absorption.

UMD Terraformers Fall 2023

- Designing and analyzing several coaxial, contra-rotating propeller designs, using CAD and CFD, to be 3D printed, achieving 10+ kilograms force of thrust.

TECHNICAL SKILLS

Programming - Java, Python, MATLAB, R, C, Arduino

Softwares - Fusion 360, Solidworks, Thermal Desktop, AutoCAD, Altium Designer, Microsoft 365

Languages - English, Tamil: Native Proficiency; Spanish: Working Proficiency

SELECTED COURSEWORK

Engineering: Aerospace Systems, Engineering Design, Mechanics, Thermodynamics, MATLAB

Computer Science: Object-Oriented Programming (Java), Computer Systems (C), Algorithms, Programming Languages

Math: Differential Equations, Statistics and Probability (R), Multivariable Calculus, Linear Algebra