

Juhি Singh

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EDUCATION

Cornell University, College of Engineering, Ithaca, NY

Bachelor of Science, Mechanical Engineering, **GPA: 4.22/4.3**

Expected May 2027

Courses: *Mechanics of Materials • *Fluid Mechanics • *System Dynamics • Statics • Dynamics • Mechanical Design • Thermodynamics • Differential Equations • Linear Algebra • Computing • Waves, Oscillations, and Quantum Physics

SPECIALIZED SKILLS

Software: SolidWorks, ANSYS, CFD (ANSYS Fluent), AutoCAD, Fusion 360, 3D Printing, Rapid Prototyping, MATLAB, Python, LaTeX, STAAD (basic FEA), XFLR5 (an analysis tool for airfoils, wings and planes)

Manufacturing: Machining (Mill, Lathe), Composites, Soldering, Drill Press, Band Saw, Woodwork

ENGINEERING EXPERIENCE

Cornell University Design Build Fly (CU DBF)

Ithaca, NY

Undergraduate student project team that creates a custom radio-controlled aircraft for the annual AIAA competition

Aerodynamics, Stability and Controls Subteam Lead

Apr 2025 – Present

- Leading design for all aerodynamic and control subsystems: wings, tail, control surfaces, servos, and integration
- Directing all relevant technical tasks including CAD in SolidWorks, analysis in XFLR5 and MATLAB, and CFD
- Developing detailed manufacturing plans and assembly order to streamline building and testing
- Coordinating and facilitating weekly subteam meetings, scheduling, logistics, and new member onboarding

Aerodynamics, Stability and Controls Subteam Member

Oct 2023 – Apr 2025

- Responsible for designing and modeling the wing and its control surfaces across 3 aircraft iterations using SolidWorks, tailored to the specific competition mission profiles
- Performed airfoil and stability analysis in XFLR5 to direct aircraft design decisions, validated airfoil analysis in ANSYS Fluent
- Justified design decisions during critical design reviews and iterated design based on feedback
- Manufactured the aerodynamic surfaces using laser-cut wood, monokote, and 3D-printed parts, and implemented servos to actuate control surfaces
- Participated in flight tests and troubleshooted control and stability issues to refine aircraft design
- Collaborated with Mechanical and Propulsion subteams to ensure functionality and alignment of project goals

Folditure

Hoboken, NJ

Mechanical Engineering Intern

May 2025 – Jul 2025

- Worked on an origami-based, re-deployable 50 kW Lunar Solar Array as part of a NASA Phase II SBIR grant
- Prototyped a novel folding geometry using CNC-machined aluminum sheets riveted to hinges, determined assembly order, and assisted with troubleshooting and design improvements
- Designed and assembled mock-up solar panel sections and tested deployment of folding mechanisms
- Designed 3D-printed solutions using SolidWorks to facilitate prototyping and testing, including a dual-axis tracker mount and assorted custom hinges
- Researched and optimized material choices such as carbon fiber and MLI to minimize weight
- Minimized cable weight by 72% by optimizing solar cell wiring configurations (series/parallel)

Atria Power Corporation

Bangalore, India

Structural Engineering Intern

May 2024 – Aug 2024

- Modeled, analyzed, and designed sloped mounting structures for residential rooftop solar installations using STAAD (Structural Analysis and Design software) to withstand wind speeds up to 150 kmph
- Calculated and simulated wind loads in accordance with the Indian government code of practice and analyzed based on factor of safety and displacement constraints
- Improved design to increase factor of safety by 67%, factoring in cost, usability, and site requirements
- Used AutoCAD to model the designs and make 2D drawings to send to manufacturers