Abigail E. Miller

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Education

Cornell University, College of Engineering Class of 2027, Ithaca, NY
Major: Mechanical Engineering
GPA: 3.914
Relevant courses: Statics and Mechanics, Thermodynamics, Fluid Mechanics, Mechanics of Materials, System Dynamics, Dynamics, Mechanical Design, Multivariable Calculus, Differential Equations, Linear Algebra, Physics II: Electromagnetism, Object-Oriented Programming and Data Structures, Intro to Aeronautics

Professional Experience

Cornell University Unmanned Air Systems Project Team, *Integration and Testing Subteam Member* Sept 2024-Present

- Develops the ailerons and ruddervators to allow for effective control of the plane. Utilizes XFLR5 for deflection angles and sizing analysis, and SolidWorks for designing the hinges and linkage system.
- Lead wing loading testing for up to 3gs using a whiffle tree design and strategically placed clamps to simulate flight lift distribution. Performed deflection and lift analysis using AVL to determine the clamp locations.
- Airdrop specialist during competition (2nd place, C-UASC). In charge of the mechanical capabilities, testing, and mount of the airdrop system.

Leonardo DRS (Airborne and Intelligence Systems), *Mechanical Engineering Intern* May-Aug 2025

- Owned design through manufacturing of a test fixture for radio modules to interface with a vibration table; released 10 pages of engineering drawings and coordinated with the manufacturer.
- Performed structural and vibration analysis using Creo Simulation and Solidworks Simulation
- Built test stands for various PCBs

Westfalia Technologies, *Electro-Mechanical Engineering Intern* May-Aug 2024

- Collaborated on the development of autonomous electric vehicle charging for automated parking systems
- Applied SolidWorks, 3D printing, and thermal analysis during the development of the autonomous charger
- Conducted research on cost-effective edge detection technology using Python and Raspberry Pi, reducing costs by over 50%

Engineers Without Borders Project Team, *Digital Agriculture Subteam member* Oct 2023-Aug 2024

- Worked on a team using machine learning and robotics to detect Northern Leaf Blight in maize crops
- Utilized AutoCAD and Raspberry Pi to install and calibrate the camera and wheels of the rover

Leadership Experience

Cornell Alpine Ski Team, Cornell University, *President* (Aug 2025-Present), *PR Chair* (Aug 2024-Aug 2025)

- Administers $50,000 budget, processes reimbursements, and coordinates race registrations and travel arrangements
- Works with the captains and coaches to organize practices and events on and off the mountain
- Managed the team's social media accounts and communicated with donors
- 2024 and 2025 USCSA Nationals qualifier

Mountain Biking Instructor, Cornell Outdoor Education Aug 2025-Present

- Organizes engaging classes for students of all skill levels to improve their mountain biking skills
- Upholds safety protocols and manages emergency situations

Campus Involvement

Course Assistant, Cornell University – *Statics and Mechanics of Solids, Intro to Computing: Design and Development*
Curb PMP Mentorship Program, Cornell University, *Mentee* Sep-Dec 2023
Society of Women Engineers, Cornell University, *Member* Sep 2023-Present

Specialized Skills

SolidWorks, Creo, AutoCAD, Fusion360, Python, Java, MATLAB, XFLR5, 3D-printing, Raspberry Pi, OpenCV, Microsoft Office