Allison Newman

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Education

Cornell University (GPA 3.91), *Bachelor of Science, Mechanical Engineering* **Aug. 2024 - Exp. May 2027**
Relevant courses: Statics, Intro to Aeronautics, Mechanics of Materials, Fluid Mechanics, Thermodynamics, Dynamics, Intro to Lasers and Photonics

Experiences

Cornell University Unmanned Air Systems (CUAir), *Structures and Payloads Engineer* **Nov. 2024 - Present**
- Dedicating 9+ hours weekly to help design, manufacture, and test a carbon-fiber-composite search-and-rescue autonomous aircraft as part of the CUASC competition. Performed carbon-fiber layups of fuselage and bulkhead; collecting data with Integration and Testing from wing-loading.
- Currently prototyping a novel tilt-rotor system for a 35lb eVTOL aircraft, optimizing for DFMA and integration with Autopilot and Electrical.
- Prototyped a camera mount in one semester that pans between the plane's winch and freefall airdrop system; designed the camera mount in SolidWorks to be 3D printed; implemented heat-set inserts and press fitting. Optimized weight to be <55 grams by utilizing lightweight filament.

Dewey Smart, *Academic and Test Prep Tutor, College Counselor* **May. 2025 - Present**
- Contributing 6+ hours weekly to instructing and preparing students for College Applications, in addition to academic tutoring in Calculus I and II.
- Creating and personalizing college application lists for 5+ clients; brainstorming and outlining personal statements and supplementary essays; highlighting dedication by creating thorough activities lists; setting deadlines and keeping clients accountable with weekly meetings and check-ins.
- Clarifying key math and english concepts assessed by the SAT, improving score by 200+ points; researching and assigning practice worksheets.

Academic Excellence Workshop, *Facilitator for MATH2940 - Linear Algebra* **Aug. 2025 - Present**
- Curating 2-hour weekly workshops with co-facilitator to reinforce key Linear Algebra principles for undergraduate students; drafting, proofreading, and testing worksheets and games to engage students while highlighting key concepts, totaling 6+ hours of prep weekly.
- Working closely with Linear Algebra TAs and Office of Inclusive Excellence to establish a challenging and reflective workshop to improve students' understanding of difficult concepts by attending biweekly training to reinforce active learning principles built off of group collaboration.

Council of International Educational Exchange Florence, *Study Abroad* **Jun. - Jul. 2025**
- Analyzed structural forces and design principles of Brunelleschi's dome, linking Renaissance architecture to modern engineering concepts.
- Practiced conversational Italian through daily interactions with classmates and local residents, enhancing cross-cultural communication.
- Strengthened adaptability and global awareness through immersive international study in a fast-paced academic and cultural summer experience.

Clubs and Volunteering

Society of Women Engineers, *Communications Codirector, Alumni & Faculty Committee Member* **Sep. 2024 - Present**
- Contacted over 20 professors at Cornell University to secure a diverse group of mentors for the annual student-faculty dinner with 30+ attendees.
- Took full responsibility for the planning committee when the remaining members resigned; promoted the dinner to project teams and clubs.
- Curated a themed social media page dedicated to spreading awareness about opportunities for women in engineering; delegating assignments for two committees with the goal of pioneering a mentorship program to connect undergraduates with Alumni and Professors, as well as publishing an annual magazine with faculty spotlights for all Cornell engineering students.

Projects

Tilt Rotor Mechanism for 35lb eVTOL Aircraft, *CUAir Project*
- Designed a tilt rotor mechanism to provide 45lbs of thrust, capable of flying at 25m/s. Enables transitioning between horizontal and vertical flight.
- Performed statics and dynamics hand calcs on boom, clevis, and gear geometry to ensure a high factor of safety for bearing and bending stress.
- Modeled in SolidWorks linkage vs. gear design to determine optimal rotation mechanics; performed Ansys on booms and brackets for deflection.

Honors and Awards

Asian American Government Executives Network, *Annual Scholarship* **2025**
Recognized with a $2000 scholarship for academic and leadership background that aligns with AAGEN's mission to promote Asian Americans in local, state, and federal government positions. The award is bestowed on individuals with "the potential and motivation to bring significant change to leadership in the public sector".

California State Board of Education, *State Seal of Civic Engagement* **2024**
Awarded for community garden project for demonstrating civic skills and action with a testimony of civic mindedness; one of 6 people in high school of 2000 to receive this state-recognized award.

Skills and Certifications

Technical: SolidWorks, MATLAB & Java (Beginner), GD&T, DFMA, Rapid Prototyping, CNC Routing (Beginner), Shaper, 3D Printing, Woodworking, VCarve (Beginner), Composite Layups & Testing, Knitting, Sewing
Professional: Microsoft Suite, Google Workspace, Confluence, Project Management, OSHA 10-Hour Construction Course