MEGGIE CHEN

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EDUCATION

Cornell University, College of Engineering, Ithaca NY — Expected May 2027
Mechanical Engineering
GPA: 3.96/4.00
Relevant coursework: Object Oriented Programming, Statics & Mechanics of Solids, Dynamics, System Dynamics, Thermodynamics, Fluid Mechanics, Intro to Aerospace

TECHNICAL EXPERIENCE

STRUCTURES AND PAYLOADS ENGINEER, *Cornell University Unmanned Air Systems (CUAIR)* — **November 2024 - Present**

- Design and manufacture a carbon-fiber composite leaf spring landing gear with custom suspension for a 35 lb fixed-wing eVTOL aircraft, capable of 1 m/s landing impact at 15° roll. Achieved 36% weight reduction (1200g→770g)
- Perform FEA (finite element analysis) using Ansys to determine landing gear durability, and validate with physical testing on a custom built testing platform.
- Developed and validated four payload-winch linkage prototypes using SolidWorks modeling, hand calculations, 3D printing, and physical testing. Wrote documentation, including BOM and manufacturing documents.
- Delivered Preliminary and Critical Design Reviews to a panel of six leads; implemented feedback to achieve 15% size and weight reduction, improving linkage compactness and efficiency.
- Manufactured wings, tail, fuselage, and structural skeleton of a 12-ft wingspan eVTOL aircraft using a carbon fiber, fiberglass, and epoxy resin composite wet layup process
- Integrated landing gear system under 2-week timeline into the fuselage under tight spatial constraints, coordinating with Airframe and Integration & Testing subteams.
- Ensure 10% factor of safety for landing gear interface with fuselage to ensure fuse structural integrity

UNDERGRADUATE RESEARCHER, *ASTRALab* — **June 2025 - December 2025**

- Collaborated with a 2-person team to compile a dataset of binding energies for 16 ionic liquids, supporting development of a machine learning model to predict properties of potential electric propulsion fuels.
- Executed 18 Density Functional Theory simulations in CP2K using the PBE exchange–correlation functional and Gaussian Plane Wave basis set, each requiring 5–24 hours of computation to determine optimized binding energies.
- Programmed and ran 8 molecular dynamics simulations in LAMMPS to optimize neutral molecule configurations, streamlining subsequent CP2K simulation workflows.

PROJECTS

MODEL RACING CAR DESIGN COMPETITION, *Intro to Mechanical Engineering Course* — **November - December 2024**

- Designed modular car parts in Fusion 360 and fabricated through rapid prototyping (i.e. laser cutter), winning 2nd place overall in course competition
- Increased car speed by 15% through iterative design improvements, enhancing assembly precision & stability
- Optimized vehicle performance by conducting torque and velocity analyses to balance speed and power

LEADERSHIP EXPERIENCE

Secretary, *Women of Aeronautics and Astronautics* — **August 2025 - Present**

- Curated and distributed monthly newsletters highlighting aerospace opportunities, events, and achievements.
- Organized speaker events for 60+ attendees, bringing prominent female figures in aerospace (e.g., Jeanette Epps) to share insights and experiences
- Led meetings for a 25-person organization, fostering networking and educational opportunities within the aerospace community.

SKILLS

PROGRAMMING: Python, Java, Matlab
SOFTWARE: Solidworks, Fusion 360, Microsoft Office
TECHNICAL: Wet carbon-fibre layups, Lathe, Mill, 3-D printing, Rapid Prototyping