Alex Weng

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EDUCATION

CORNELL UNIVERSITY, College of Engineering — Ithaca, NY
Major: Mechanical Engineering | Minor: Business | GPA: 3.798 — **August 2023 - May 2027**

Relevant Courses: Statics | Dynamics | System Dynamics | Introduction to Mechanical Design | Fluid Mechanics | Mechanics of Materials | Thermodynamics | Uncertainty Analysis in Engineering | Linear Algebra | Differential Equations | Multivariable Calculus | Physics I: Mechanics & Heat | Physics II: E&M

Activities: Cornell Unmanned Air Systems | Symbiotic Engineering and Analysis Lab | Cornell Cycling Club (Vice-President) | Cornell CSalt | Cornell Capital Club | Project Level the Field | Phi Sigma Kappa Fraternity

EXPERIENCE

Cornell Unmanned Air Systems Project Team, Ithaca, NY — **February 2025 - Present**
Structures & Payloads Engineer

- Designed and fabricated GoPro gimbal (100° roll/pitch) achieving 60% weight and 55% torque reduction vs. prior model
- Modeled full assembly in SolidWorks; selected servos, bearings, and dowel pins for strength and manufacturability
- Integrated gimbal hardware with aircraft avionics; collaborated with electrical and imaging teams on interface design
- Manufactured and tested 4+ gimbal prototypes using 3D-printed and ordered parts, resolving issues related to GoPro fit, bearing motion, part connections, center of gravity of rotating parts, and space constraints within the aircraft
- Cut bay doors in carbon composite aircraft fuselage using a Dremel; drilled holes and installed threaded inserts

Symbiotic Engineering and Analysis Lab at Cornell University, Ithaca, NY — **July 2024 - Present**
Undergraduate Research Assistant

- Designed and validated mounts for a 94-lb pressure vessel and 25-lb water pump using Fusion 360 and FEA
- Assembled full hydraulic testing system (6 valves, 9 sensors, 40+ fittings) for high-pressure water treatment experiments
- Brainstormed schematics of a WEC-driven carbon sequestration system that pumps 1 GtCO2/year to depth of ~3000m
- Made design decisions based on suitability of different sequestration mediums and methods with WEC power
- Assessed optimization methods for RM6 WEC architecture through literature review, informing design tradeoffs

Cornell University Office of Visitor Relations, Ithaca, NY — **February 2024 - Present**
Campus Tour Guide/Senior Information Specialist

- Use strong interpersonal skills to create a welcoming and positive experience for visitors and prospective students
- Give 2-5 campus tours/week about Cornell's colleges, history, and student life for groups of 10-30 visitors
- Answer calls and emails directed to the university, offer guests self-guided tours, answer questions about Cornell

Cornell University Systems Engineering, Ithaca, NY — **June 2025 - August 2025**
Summer Research Assistant

- Simulated hybrid wind-wave energy converter dynamics using MATLAB, Wec-Sim, and ANSYS AQWA
- Modeled hydrodynamic bodies on CAD and evaluated stability and power capture efficiency of various architectures
- Built Simulink models of each configuration; wrote scripts in MATLAB to analyze their performance

Project Level the Field, Rochester, NY — **June 2024 - August 2025**
Director of Outreach, Cornell Chapter

- Directed recruitment of new student mentors for Project LTF by planning outreach events and advertising
- Coordinated the mentor recruitment process; created an application, interviewed and offered positions to candidates
- Oversaw the connection of the club to the university and ensured logistics of on-campus events were fully hashed out
- Led events at local high schools to identify and support underserved students through the college app process

SKILLS & INTERESTS

Software: SolidWorks, Fusion 360, AutoCAD, ANSYS (FEA/CFD/AQWA), MATLAB, Simulink, Python, Java, MS Office Suite
Core Skills: Mechanical Design, CAD Modeling, Finite Element Analysis (FEA), Computational Fluid Dynamics (CFD), Prototyping
Interests: Mechanical Design, Sustainability, Entrepreneurship, Road Cycling, Soccer