Ethan Mertens Hernandez

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EDUCATION

Cornell University, College of Engineering, *Bachelor of Science, Mechanical Engineering*
Ithaca, NY. Expected May 2027

WORK EXPERIENCE

C2C Engineering, Waimanalo, HI, *Mechanical Engineering Intern* **2024 - Present**

- Produce mechanical plans for HVAC, plumbing, and fire protection systems using AutoCAD
- Perform building heat load calculations with Trace3D Plus to support HVAC system sizing
- Participate in site visits to gather field data and assist in system assessments

Combat Robotics Team, Cornell University, *Project Lead, Mechanical Team Member & Trainer* **2023 - Present**

- Design competition-ready 12-lb combat robot components in Fusion 360
- Conduct quick repairs and piloted RC Combat Robot during live matches
- Mentor new team members on CAD tools, prototyping, and mechanical assembly

Engineering Project Teams Operations, Cornell University, *Experiential Learning Lab Lead* **2025 - Present**

- Oversaw a 4-person team renovating Engineering project team makerspace

Lehmann Lab, Cornell University, *Research Assistant* **2024 - 2025**

- Modeled thermal energy transfers in manure-to-biochar conversion system for pyrolysis
- Collaborated with grad students to redesign a jacketed auger for improved heat efficiency

Autonomous Robotics Waterway Project, University of the Pacific, *Research Assistant* **2021 - 2022**

- Designed and 3D-printed mechanical components for autonomous cleanup robot
- Supported development of object-detection system in Python; contributed to full system build

Family Rental Property Business, Stockton, CA, *Construction Assistant* **2017 - 2023**

- Applied practical mechanical skills in residential renovation: framing, power tools, light electrical, and plumbing

LEADERSHIP & TEAM EXPERIENCE

Cornell Outdoor Education, Cornell University, *Challenge Course Facilitator* **2025 - Present**

- Led team-building workshops focused on communication and problem-solving for student and corporate groups
- Facilitate daily debriefs to promote learning, collaboration, and personal growth
- Manage participant safety on high-ropes courses, including ziplines and rappelling

Outdoor Odyssey Pre-Orientation Program, Cornell University, *Farm Trip Co-Guide* **2024 - Present**

- Lead 6-day wilderness expeditions for incoming freshmen; develop group cohesion and self-reliance
- Certified Wilderness First Responder; taught navigation and survival skills, participated in farm labor

Civil Air Patrol, U.S. Air Force Auxiliary, Stockton, CA, *Squadron Cadet Commander, 2nd Lieutenant* **2020 - 2023**

- Led weekly squadron meetings, developed training curriculum, and mentored cadets
- Delivered educational sessions on aerospace, leadership, and safety

TECHNICAL SKILLS

Software & Design Tools: AutoCAD, Autodesk Fusion 360, Trace3D Plus, TinkerCAD, Arduino
Programming & Simulation: Python (basic), Excel, MATLAB (exposure)
Fabrication & Tools: 3D Printing, Machining, Soldering, Carpentry, Hand & Power Tools
Mechanical Systems: HVAC fundamentals, Thermal Systems, Robotics
Other: Public Speaking, Microsoft Office, Video Editing, Wilderness First Aid