

Aden Walsey

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EDUCATION

Cornell University, College of Engineering, Ithaca, NY

Master of Engineering in Mechanical Engineering with a focus in Design

Expected December 2026

Bachelor of Science in Mechanical Engineering, Dean's List, Varsity Rowing, **GPA: 3.32**

Expected May 2026

SKILLS

Technical: CAD Modeling (SolidWorks, Fusion 360), FEA, ANSYS, DFMEA, MATLAB, Simulink, Python, R, CNC Machining, 3D Printing, Rapid Prototyping, DFM, Lean Manufacturing, ASTM Procedures, GD&T, DFX Design, CFD, Linear Algebra, Calculus, Statistics, Excel, PowerPoint, Adobe Suite (Photoshop, Illustrator, etc.).

Leadership: Cornell Varsity Lightweight Rowing: Second Team All-Ivy (2025), EARC Sprints 2nd place in 1V8+ (2025), Head of the Charles 1st place in 1V4+ (2023); member of Cornell's Big Red Leadership Institute.

PROFESSIONAL EXPERIENCE

Manufacturing Engineer Intern, *Mainspring Energy*, Menlo Park, CA

Summer 2025

- Designed, assembled, and validated a pneumatic jaw tooling jig to copper wire insulation and trigger heat-activated bond coat through current, enabling coil formation for stator manufacturing and reducing process time by 60%.
- Devised and executed qualification tests for injection-molded shipping crates under simulated shipping conditions, verifying structural robustness and safety factors for secure delivery of stator assemblies.
- Conducted a Gage R&R analysis for eddy current sensors to quantify repeatability and reproducibility of precise alignment prior to stator shipment while ensuring efficiency of sensor installation.

R&D Engineer Intern, *Neodyne Biosciences, Inc.*, Fremont, CA

Summer 2024

- Performed a tolerance analysis on device packaging to improve manufacturability and simplify assembly, creating detailed technical drawings in SolidWorks to document and communicate design improvements to manufacturing.
- Developed and implemented test methods addressing an adhesion issue to reduce number of defective products by over 70% and used Excel for data analysis/conclusions.
- Evaluated various low-tack liners to ensure compatibility with machinery to optimize production processes.

Robotics Teacher, *Pinewood School*, Los Altos, CA

Summer 2023

- Taught students how to design, build, and program robotics systems to develop their problem-solving skills.

PROJECTS

Wind Turbine Blade Design, *Advisor Perrine Pepiot*, Cornell University

Fall 2025

- Create and 3D print turbine blade design using Fusion 360 to maximize power output through self-designed wind tunnel experiments.

Load Cell Finite Element Analysis, *Advisor Alan Zehnder*, Cornell University

Fall 2024

- Modeled a ring-shaped load cell with strain gauges in Fusion 360 and evaluated stress, strain, and deflection results under applied load using ANSYS.
- Refined design parameters to maximize load cell's voltage output while confirming compliance with safety factors.
- Validated simulation results with hand calculations to ensure accuracy in measured stress distributions and properties.

Wind Turbine System Dynamics Simulation, *Advisor Douglas MacMartin*, Cornell University

Fall 2024

- Built a MATLAB/Simulink model of a wind turbine with a PI controller and closed loop feedback to maximize performance of turbine with minimal settling time and steady-state error.
- Formulated ODEs and transfer functions to model system efficiency, optimizing generator's speed and angle of attack.

Bicycle Chain Cleaner and Lubricator, *Advisor Deanna Kocher*, Cornell University

Spring 2024

- Collaborated with four engineering students in Mechanical Synthesis course at Cornell University to create an efficient, affordable, and user-friendly cleaning apparatus to increase longevity of bicycle drivetrain components.
- Designed a multi-chambered housing in Fusion 360 with variable orifices to control rate of fluid flow over chain.

INTERESTS

Cycling, Running, Backpacking, Motorsport, Drawing, Furniture Design, Music Production, Film Photography, Cooking.