

Tiernan O’Kane

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Versatile mechanical engineer bringing cross-functional R&D, operations, and leadership experience to new environments.

Education

University of Massachusetts Amherst

Bachelor of Science in Mechanical Engineering, cum laude

- University College Cork, Ireland
- University of Minnesota, Minneapolis, MN

Major GPA: 3.9

Spring 2024 Study Abroad

Fall 2023 National Student Exchange

Skills

SolidWorks, MATLAB, Autodesk Fusion 360, Autodesk Inventor, Creo Parametric, Ansys Mechanical, DFMA, Minitab, Arduino, 3D Printing, CNC Machining, Root Cause Analysis, Drafting, Spanish, Microsoft Office Suite

Engineering Experience

Build The Future Rotational Engineer - Prysmian

Summer 2026 – Present

- Rotating through Operations and Research & Development divisions to develop broader business understanding

Intern / Part-Time Engineer - Covestro

Summer 2025 – Spring 2026

- Managed 9 cross-functional engineering projects across process analysis, safety design, and SOP standardization
- Conducted 300+ lab moisture tests, reducing total test time by 40% and improving process consistency
- Designed and fabricated 4 safety guards and modeled 4 trim winder concepts to enhance safety and minimize downtime
- Collected baseline data for polycarbonate inclusion counts, outlining opportunities for quality improvements

Analysis Lead - Senior Design (1st Place)

Fall 2025 – Spring 2026

- Led mechanical analysis for an assembly line learning tool, achieving above a 95% build success rate
- Analyzed structural integrity using MATLAB and Ansys Mechanical; confirmed minimum FOS with hand calculations
- Tested assembly block placement forces over 10,000 cycles, creating a model of material decay for 3D-printed ABS
- Created MATLAB design space for TPU fixtures using a Pseudo-Rigid body model and validated using Ansys Mechanical

Project Manager - Engineers Without Borders

Fall 2023 – Spring 2026

- Coordinated a rainwater catchment system installation, site visits, material selection, and alternative analysis
- Managed design, site evaluation, and documentation, including CAD drawings and bill of materials for greenhouse restoration

Selected Engineering Projects

Double Pendulum - Independent Project

Fall 2024 – Spring 2025

- Designed and built a modular double pendulum with DFMA principles, using CNC, waterjet, 3D printing, and Arduino

Ultralight Bike Wrench - School Project

Fall 2024

- Designed and manufactured a modular wrench using SolidWorks and Ansys Mechanical, exceeding weight targets by 35%

Formula SAE - Ergonomics Subteam

Fall 2023

- Designed and fabricated a lightweight pedalbox via Fusion 360 generative design, achieving a 10% weight reduction

Leadership & Work Experience

Captain - Sail Caribbean, British Virgin Islands

Summer 2024

- Led crews of 10-11 students aboard 46-foot catamarans, managing safety, mechanical systems, and operations

Senior Sailing Instructor - Hyannis Port Yacht Club

Summers 2021–2023

- Trained and mentored youth sailors, directed curriculum design, and implemented safety and leadership initiatives

Activities

Pi Tau Sigma, UMass Fencing Team, UMass Sailing Team - Captain, Sailed Atlantic Crossing, Arm Wrestling