Vinn Nguyen

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EDUCATION

Massachusetts Institute of Technology (MIT) — **Cambridge, MA**
Bachelor of Science in Mechanical Engineering — *Expected Graduation 2027*
GPA: 4.9/5.0
Relevant Courses: Product Design Process, Design and Manufacturing I/II, Global Engineering, Engineering Computation (Matlab), Thermo-Fluids I/II, Mechanics and Materials I/II, Dynamics and Controls I

EXPERIENCE

Mechanical Engineering Intern — **Cambridge, MA**
Pascal Technology — May 2026 – August 2026

- Rebuilt a compressor durability test stand. I fabricated the tubing-coil test volume, solenoid valve, and orifice system, and programmed TwinCAT PLC control so it tracks an ideal pressurization curve
- Automated efficiency testing of reciprocating-piston compressors across speed, inlet pressure, and pressure ratio, using thermocouple, pressure, and power data
- Produced engineering drawings for critical refrigerator components, and supported heat exchanger fabrication and root-cause analysis of pinhole defects

System-Level Optimization of Green Hydrogen Production through Electrolyzer and Balance of Plant (BoP) Modeling — **Cambridge, MA**
Undergraduate Researcher (Lab: The Global Engineering and Research Center; Supervisor: Samuel Heath) — September 2025 – May 2026

- Developed a first order model to evaluate the reduction levelized cost of hydrogen in Proton Exchange Membrane Electroyzers due to changes in stack innovation and balance of plant (BOP) innovations
- Conducted techno-economic analyses to identify drivers of cost and performance
- Achieved 1st place undergraduate student "Best Poster Award"

Fabrication of Perovskite Solar Cells Across Diverse Environmental Conditions — **Cambridge, MA**
Undergraduate Researcher (Lab: Accelerated Materials Laboratory for Sustainability; Supervisor: Dr. Tianran Liu) — June 2024 – January 2025

- Fabricated and characterized perovskite solar cells by spin coating. I built an Arduino/Raspberry Pi system that monitors humidity, temperature, and solvent vapor in real time.

Recovery of Agricultural Nutrients from Spanish Groundwater with Selective Electrodialysis & Nanofiltration — **Cambridge, MA**
Undergraduate Researcher (Lab: The Lienhard Research Group; Supervisor: Samuel Heath) — Jan 2024 – September 2024

- Ran nanofiltration and selective electrodialysis experiment and adapted a multi-ion transport model to simulate groundwater treatment for irrigation.
- Co-authored a published paper on selective aluminum separation from waste cryolite electrolyte via nanofiltration.

PROJECTS

Design and Manufacturing I (2.007) Robot Project — **Cambridge, MA**
February 2026 – May 2026

- Designed and built a 12 lb robot that spun a car wheel to 230 rpm, pulled a 15 lb wheel, and ran laps around the game board.
- (a) Engineered a chain-and-sprocket drive (b) Built a high-torque winch with a custom carabiner and a railing latch (c) Designed a 3D-printed mini robot that deploys from the main robot to run laps
- Placed top 8 of 120 and won the "MacGyver Prize" for creative use of adapted parts

Design and Manufacturing II (2.008) YoYo Project — **Cambridge, MA**
September 2026 – Present

- Designing and fabricating 50 YoYos by CNC Machining, Injection Molding, and Thermoforming
- Utilizing Design for Manufacturing (DFM) principles

Product Engineering Process (2.009) Product Project — **Cambridge, MA**
September 2026 – Present

- Conceptualizing, designing, and fabricating a novel menstrual cup applicator and remover for first-time users

SKILLS AND INTERESTS

- **Design & Thermal:** SolidWorks, Fusion360, OnShape, Engineering Drawings, Compressor Testing, Test Stand Design
- **Programming & Controls:** TwinCAT (PLC), MATLAB, Python, Arduino, Raspberry Pi
- **Fabrication:** Design for Manufacturing (DFM), Lathe, Mill, Waterjet, FDM Printing, Soldering, MIG Welding, Injection Molding, Thermoforming, Hand Tools
- **Interests:** Renewable Energy, Thermo-fluids engineering, Sustainability, Rock Climbing, Playing the Ukulele, Eating Hotdogs