Aidan Curtis

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EDUCATION

Thayer School of Engineering at Dartmouth College, Hanover, NH | *Bachelor of Engineering*   Expected June 2026
- Electrical Engineering Major | GPA: **3.89/4.00**
- **Thesis** (in progress): Optimal Control GKP State Preparation

Amherst College, Amherst, MA | *Bachelor of Arts*   May 2025
- Mathematics Major | Major GPA: **4.00/4.00** | GPA: **3.78/4.00**

EXPERIENCE

Undergraduate Researcher – FitzLab @ Dartmouth   September 2025 - Present
- Designed and implemented an optimized atomic rearrangement algorithm for neutral-atom quantum processors, improving array loading efficiency and reducing trap-move time by an order of magnitude
- Designing machine learning–based pulse optimization techniques with PyTorch and QuTip to generate GKP states in superconducting cavities, incorporating noise modeling and hardware bandwidth constraints

Summer Research Intern – NanoLab @ NYU   May 2024 - August 2024
- Engineered a low-noise transimpedance amplifier (TIA) for picoamp-scale electrochemical biosensing, balancing gain-bandwidth tradeoffs and feedback stability
- Performed frequency-domain, transient, and noise analyses in Cadence OrCAD to optimize input-referred noise and ensure stable operation

Undergraduate Researcher – Analog Lab @ Dartmouth   January 2024 - August 2024
- Developed a finger-electrode ECG monitoring device, implementing analog front-end circuitry for low-amplitude biopotential signal acquisition

Teaching Assistant – Amherst & Dartmouth   January 2023 - Present
- Lead TA for upper-level courses in quantum engineering, group theory, and linear algebra (50+ students)
- Selected by faculty for strong technical mastery and instructional leadership

PROJECTS

Multi-Agent Neutral Atom Rearrangement   October 2025
- Implemented a distributed multi-agent routing algorithm to coordinate constrained transport operations in neutral-atom arrays
- Reduced total movement cost and improved configuration time 10x by optimizing path planning under collision and hardware constraints.

PneumaGlove | *Class Project* | Philip R. Jackson Prize Award Winner
- Built a wearable therapeutic platform combining custom PCB electronics, embedded C++ firmware, and a Swift iOS interface for wireless control
- Orchestrated the microcontroller-driven control architecture, including MOSFET switching and regulated power delivery, enabling synchronized hardware–software actuation.

AWARDS

The Porter Prize, Amherst College, Amherst, MA   May 2022
- Honored by the Amherst Physics and Astronomy department as the highest-achieving first-year student in an Astronomy class

Philip R. Jackson Prize, Dartmouth College, Hanover, NH   August 2023
- Best overall project in ENGS 21 class out of 13 groups
- Awarded by a review board of Professors and Professional Engineers for our invention of **PneumaGlove**

ATHLETICS

Amherst College Men's Varsity Soccer, Amherst, MA   August 2021 - May 2025
- NCAA D3 National Champion 2024
- NESCAC Player of the Week Award, NESCAC Champion (2022), and NESCAC All-Academic Team (2022-2024)

Dartmouth College Men's Varsity Soccer, Hanover, NH   August 2023 - March 2024
- 40+ hours a week dedicated to training, lifting, and playing games
- D1 Ivy League student-athlete taking a complete engineering course load

SKILLS

- Software: C, C++, Java, Python (PyTorch, Qiskit, QuTip, NumPy, SciPy), Matlab, x86 Assembly, VHDL, and LaTeX
- Hardware: Fusion 360, Solidworks, Cadence, Spice, Kicad, Raspberry Pi, FPGA, ARM Microcontrollers, and Arduino