DANIEL HARRINGTON

dmharrington03@gmail.com
github.com/dmharrington03
linkedin.com/in/dmharrington03
Portfolio: danielharrington.me/
Boston, MA
+1 407-718-4419

EDUCATION

B.Sc. Physics and Mathematics, Tufts University (in progress–May 2026)

Relevant Coursework: Quantum Mech. I, Real Analysis I, Linear Algebra, Mathematical Aspects of Data Analysis, Calculus I-III, Electronics, Differential Equations
Spring 2024 Coursework: Quantum Mech. II, Real Analysis II, Quantum CS, Thermal Physics

EXPERIENCE

Tufts Nanophotonics Group (PI Aseema Mohanty) – Research Assistant (Fall 2023—)

- Simulating field distributions and developing readout methods for phase-modulated multimode waveguides for mode division multiplexing-based photonic quantum state transmission.

National Institute of Standards and Technology – Summer Undergraduate Research Fellow (Summer 2023)

- Investigated passivation effects of polymers on MoS monolayers for FET photodetection applications
- Characterized polymer effects via Raman, PL, and THz spectroscopy (time-resolved/time-domain)
- Operation and alignment of Class 4 lasers and optics to improve SNR for THz setup
- Identified O_2-passivated S^{2-} vacancies could be impacting our photoconductivity data, presented solutions based on literature to quantify sample homogeneity
- Data analysis/presentation to prepare for colloquium talk and publication

Tufts SEDS Club – Radio Telescope Team Lead, Board Member (Fall 2022—)

- Lead project to develop and construct a 3-meter educational radio telescope for public use
- Develop full-stack software for user observation scheduling, data analysis/storage, dish rotator control
- CAD/build hardware, lead and teach team of ~10, manage ~$9k budget

Tufts Hillel Community Action Partners Club (Spring 2023)

- Develop/lead weekly STEM sessions with middle schoolers (e.g. 3D design, bridge builds, chem demos)

PROJECTS

See Portfolio Site

- **Waveguide Simulations –** FDTD sim of EM wave propagation in 2D waveguides; Python/meep
- **Physics Simulations** – Fluids, EM waves, N spring systems, 3D projection, and more; C++/SFML, JS
- **Exoplanet Data** – NASA data analysis, computed planetary metrics, regression; Python

SKILLS

Software: Python (Pandas, numpy, matplotlib, meep), C/C++, JS, CAD (Fusion360), Mathematica, web development (React, Flask), SQL, Git, Office, LaTeX, Linux/MacOS/Windows

Hardware: Electronics, soldering, prototyping (3D printing, laser cutting, woodworking, etc.)