

Leo Norton

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Education

Northeastern University – Boston, Massachusetts

Graduating May 2027

Candidate for Bachelor of Science in Electrical Engineering

GPA: 3.72

Coursework: Electronics, Electromagnetics, Linear Systems, Circuits and Signals, Embedded Design, Network, Differential Equations and Linear Algebra, Calculus 3

Activities: Wireless Club (Facilities Manager), Northeastern IEEE (Workshop Lead), Game Studio Club (Team Leader), Boston Marathon Medical Team (Amateur Radio Communications), Unicycle Club (President), Bluegrass Club (Scheduling Coordinator)

Experience

National Renewable Energy Lab, Center for Integrated Mobility Sciences

Summer 2024

Electric Vehicle Modeling Intern

Golden, CO

- Programmed hydrogen fuel cell vehicle modeling features independently for EV charging station model EVI-EnSite.
- Wrote Python scripts with Geopandas and Dask for animation generation for data analysis.

National Institute of Standards and Technology (NIST) Communications Technologies Lab

Summer 2023

Quantum Optics and Circuit Design Intern

Boulder, CO

- Designed and built op-amp/voltage-controlled oscillator driver for Pound-Drever-Hall (PDH) laser locking to 4°K optical cavity for optical to microwave quantum transduction experiments.
- Locked to multiple optical cavities using the Red Pitaya field programmable gate array (FPGA) as a proportional integral derivative controller.
- Built and designed circuits for a microwave receiver.
- Operated 4°K cooling cycles and leak-checked dilution refrigerator.

NIST Physical Measurement Lab

Summer 2022

Control Systems Engineering Intern

Boulder, CO

- Designed control system for quantum entanglement optics – created remote voltage control circuit for a high-speed photon polarization switch and digital-analog converter printed circuit board (PCB).
- Implemented a web interface and server to remotely control a Pi-based driver system.

NortWare LLC

Fall 2021 - 2022

Founder and Game Developer

Boulder, CO

- Programmed a 3D adventure game independently in C# and published on the Steam platform (over 100 sales in the first week) for company which creates and markets video games.

Reality Garage

Summers 2019 - 2020

Virtual and Augmented Reality Developer

Boulder, CO

- Developed a virtual reality moon-landing simulation in C# and Unity for display at a museum.
- Programmed an augmented reality information display for wildfire firefighters for the NIST CHARIoT Challenge.
- Won CHARIoT Challenge award for “Most Creative Method of Interaction with AR prototype – Hand Gesture”.

Skills

Electronics: Proficient in circuit simulation and prototyping, printed circuit board design and assembly, Arduino, Raspberry Pi, and FPGA development, PCB milling, certified amateur radio technician

Software: Python, C++, C#, MATLAB, Java, HTML, CSS, LTSpice, GitHub, AutoCAD, SolidWorks, Fusion 360, Adobe Suite, Unity

Laboratory: Soldering, oscilloscope, spectrum analyzer, vector network analyzer, optical table setup, PDH locking, dilution refrigerator operation, MIG welding, laser cutting, 3D printing, CNC milling

Engineering Projects

Tesla Coils: Personal Project (Fall 2024) – Designed and built medium frequency driver for power MOSFET half-bridge circuit to drive homemade coils; produced ~300kV from 120V supply.

Wind Turbine Museum Exhibit: Cornerstone of Engineering (Spring 2023) – Led, designed, and built an interactive, modular wind turbine testing machine for elementary students; Arduino control system with Unity integration.