NITZAN BEN ARI

benari.n@northeastern.edu | nben6405.github.io

EDUCATION

Northeastern University   **Boston, MA**
Candidate for Bachelor of Science in Electrical Engineering, Minor in Physics   May 2027
Honors: Dean's List (GPA: 3.756)
Activities: Northeastern Baja SAE
Current Courses: Analysis of Random Phenomena**,** Linear Systems, Nanophotonics, Wireless Communication Circuits
Completed Courses: Electromagnetics, Electronics, Quantum Engineering, Fundamentals of Networks, Circuits and Signals, Embedded Design, Computing Fundamentals, Statics, Differential Equations & Linear Algebra, Physics 2

TECHNICAL SKILLS

Programming: Python, C++, MATLAB, Linux CLI (Ubuntu), Git/GitHub
Applications: Altium Designer, AutoCAD, KiCAD, LTSpice, PSpice, SolidWorks
Electrical: DMM, Function/Signal Generator, Oscilloscope, Soldering, Spectrum Analyzer, Vector Network Analyzer
Machining: Bandsaw, Manual Lathe, Manual Mill

PROFESSIONAL EXPERIENCE

RF Technical Intern | Commonwealth Fusion Systems June 2025 - Dec 2025
Devens, MA
- Performed RF system testing and characterization, optimizing component layout to improve filtering performance and mitigate VCO phase noise while maintaining output power stability.
- Designed impedance matching networks and measured component input/output impedances using RF instrumentation.
- Developed automated antenna test system using Linux based SCPI control to monitor leakage radiation during a 2 MW transmitter demonstration.
- Collected and analyzed antenna gain data across multiple measurement locations to characterize performance.
- Designed an energy recovering snubber for a phase-shifted full-bridge DC-DC converter to replace a thermally failing passive snubber.

Sponsorship Manager | Northeastern Baja SAE June 2025 - Present
- Facilitate communication and foster relationships with new and existing sponsors to support the production of the car
- Coordinate events with sponsors for student members to network and learn more about the industry
- Design a new sponsorship packet and create a newsletter to further improve our relationship with our sponsors/alumni

PROJECTS

nben6405.github.io | My Personal Portfolio Jan 2026 - Present
- Design and deploy a personal portfolio website; actively expanding content and experimenting with CSS styling.

Raspberry Pi DAQ | Northeastern Baja SAE Nov 2025 - Jan 2026
- Designed a Raspberry Pi based data acquisition system integrating MCC DAQ hardware for vehicle suspension and brake instrumentation.
- Implemented automated boot-time logging control, GPIO-triggered acquisition, and multithreaded Python data pipeline.
- Developed real-time sensor calibration mapping converting analog voltages to displacement and pressure measurements.
- Automated timestamped CSV logging and post-run visualization using Python plotting tools.

Brake Light Circuit | Northeastern Baja SAE Oct 2024 - Feb 2025
- Designed op-amp comparator circuit triggering brake light activation based on hydraulic brake pressure threshold.
- Assembled PCB and wiring harness, integrating circuit into vehicle electrical system.
- Tested and validated performance using microcontroller-based data collection.

Calendar Program | Computing Fundamentals Dec 2024
- Developed calendar application using object-oriented Python design.
- Implemented event management, date handling, and user interaction features.

RC Robot ("Mercury Marauders") | Cornerstone of Engineering II Jan - Apr 2024
- Designed and built Arduino-based wireless robot with color sensing and LCD interface.
- Implemented motor control, wireless communication, and sensor integration.