

Jonah Lefkoff

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OBJECTIVE

Experienced senior engineering student in software and electrical looking for final co-op focusing on system-level design.

EDUCATION

- **Northeastern University**, GPA: 3.63, Boston, MA May 2026
B.S. in Computer Engineering & Computer Science
 - **Activities:** Northeastern Wireless Club (President), Northeastern Outdoors Club (Treasurer/Webmaster), Amateur Radio – Amateur Extra Class (KF0INO), Private Pilot License – Instrument Rated
- **Dawson School**, Boulder, CO May 2021
 - **Activities:** FIRST Robotics Team 2972 (Captain), Varsity Cyclocross (Captain), Theater Technology (Student Head)

SKILLS

- C, C++, Python, Docker, Java, Rust, Node-RED, Unix scripting, RF Engineering, STM32 Platform, I2C/SPI/CAN/UART, RTOS, EDA Software, Network Engineering, 3D Printing, AutoCAD, SolidWorks, MATLAB, Rework, Test Equipment.

EXPERIENCE

- **Fleet Robotics** , *Firmware and Sensor Engineering Co-op*, Somerville, MA January - August 2024
Fleet Robotics is a 2-year old startup that makes underwater robots that inspect and clean ship hulls while underway.
 - **Ultra Wide Band:** Evaluated advanced ultra-wide band radio direction finding and LiDAR technologies to aid in robot localization with respect to base stations aboard large shipping vessels in open ocean.
 - **Battery Management System:** Developed a hardware-level driver for battery management solution as well as R&D on wireless charging technologies to enable increased robot reliability and endurance.
 - **Ultrasound:** Evaluated off-the-shelf ultrasound systems, integrated ultrasound, spectroscopic, and inductive inspection mechanisms for critical analysis of shipping industry assets, enabling customer success through large-scale insights.
 - **IMU:** Implemented high-reliability firmware drivers for on-robot inertial measurement units for robust pose estimation.
 - **Jetson Orin:** Upgraded, tested and implemented software for increased radio connectivity when out of water.
 - **Hardware-in-the-loop:** Designed and manufactured a hardware-in-the-loop test fixture for total robot electrical, software, and firmware validation that was previously only able to be tested on production robot units. This parallelized the speed of firmware and software validation with respect to mechanical engineering and assembly.
- **Guardian Agriculture** , *Robotics Software Engineering Co-op*, Woburn, MA January - June 2023
Guardian Agriculture is the first FAA approved startup building a 10 ft, 850 lb quadcopter for aerial crop application.
 - **Drone Camera:** Designed and engineered a custom on-craft camera solution including hardware and software (python) to aid in precision landing. Worked collaboratively with a small team from design through field testing.
 - **RF Monitoring:** Created custom logging software to monitor RF network performance parameters for increased safety by introducing telemetry that triggers auto protection actions which can auto land an aircraft and increased operator awareness through thoughtful presentation of that telemetry to a pilot.
 - **Network Reliability:** Implemented a ground-based networking system topology to increase reliability of field operations for customers. Developed SOPs, tested hardware for high reliability in the customer operating environment.
 - **Software Pipeline:** Reworked internal tooling to aid in software development life-cycle by decreasing build times by 75% contributing to the organizations CI/CD pipeline efficiency.
 - **Time Sync:** Implemented a one line change after significant research that enabled time synchronization across a fleet of aircraft and prevented the team from a distraction of rewriting multiple services to accomplish the same goal and thereby reduced risk and increased developer availability.
- **Freewave** , *R&D Intern, Embedded Systems*, Boulder, CO October 2019 - August 2020
Freewave is an industry-leading high-reliability machine to machine wireless networking manufacturer.
 - **Software Overhaul:** Developed major kernel refactor for ZumIQ line of IIOT radio systems. Added increased processor overhead to support modern customer needs. Software was pushed to thousands of deployed radio units.
 - **Client Demos:** Designed and engineered client demo solutions on radios using Node RED and Visual Basic.
 - **Water Pumping Solution:** Implemented a custom water pumping solution using ZumLink radios and Node-RED reducing excess power usage by 80%.
- **ArcherDX, Now IDT** , *R&D Intern, Bioinformatics*, Boulder, CO July - December 2018
ArcherDX was a best-in-class genomic sequence testing company specializing in revolutionary blood based cancer tests.
 - **Data Analysis:** Analyzed complex genetic data using Python and Jupyter resulting from Illumina sequencers.
 - **Remission Detection:** Engineered algorithms to detect remission in ctDNA for lung cancer patients as part of the TracerX project in Nature. We were able to detect remission down to the week, years in the future.
 - **High-power Computing:** Developed software for high power computational servers in a fast-paced environment, creating efficient code that executed across very large datasets.