Callaghan R. Berry

Phone: Email for phone number **E-Mail:** callaghanberry9@gmail.com
Linked-In: https://www.linkedin.com/in/callaghan-berry/

Education

Tufts University, Medford MA Graduated May 2023
Bachelor of Science in Electrical Engineering, Minor in Mathematics
GPA: **3.73/4.0**, SUmma Cum Laude
Relevant Coursework: Digital Signal Processing, Communication Systems, Feedback Control Systems, Distributed Machine Learning, Probabilistic Systems, Electromagnetic Fields and Waves, Analog/Mixed Signal IC Design

Work Experiences

MIT Lincoln Laboratory
Assistant Staff - HF Radar Engineer, Lexington, MA June 2023 - Present

- Researched new and emerging radar technologies to increase signal-noise ratio, range and doppler accuracy, and clutter rejection for prototype systems
- Designed experimental and prototype systems, including choice of digital waveform generators, timing systems, software defined radio receivers, and RF amplifiers, performing end-to-end tests and validation before deployment
- Analyzed experimental data recordings for environmental noise spectrums and noise source locations via beamforming techniques using MATLAB and Python and put in presentable formats for project sponsors
- Engaged in field deployments to test and showcase systems, setting up and testing antennas, bringing up hardware, and implementing test plans

Tufts University ECE Department
Teaching Assistant, Medford, MA January 2023 - May 2023

- Guided students throughout a semester long course to design, build, and test prototype autonomous robots
- Implemented lesson plans and assisted students during office hours to help design and troubleshoot microcontrollers, motor controllers, light and color sensors, communication systems, and battery systems

Tufts University Residential Life
Resident Assistant, Medford, MA January 2021 - May 2023

- Ensured 200+ students have a safe and enjoyable experience in a living residence community
- Planned and put on hall events to keep residents active and engaged with the campus community

Texas Instruments
Process Integration Intern, South Portland, ME June - August 2022

- Investigated fab issues across multiple teams to improve wafer yields on a variety of products and technologies
- Monitored electrical characteristics of silicon ICs through data analysis to identify and fix process variations in wafer fabrication to ensure functional and reliable products
- Redesigned a failing electrical test structure using Cadence in accordance with design rules, reducing wafer scrap and increasing testing robustness across multiple products in production

Projects

Audio Localization Device Capstone Project

- Designed a portable audio localization device to aid members of hard of hearing communities in identifying the location of audio cues in a space
- Integrated an array of microphones with a microcontroller and computed time delay and angle of arrival relative to each microphone via the Generalized Cross Correlation Phase Transform method
- Tested the device in a variety of acoustic settings to analyze performance relative to customer requirements

Skills

Software/Tools: MATLAB, Python, C/C++, Linux, Cadence, LTSPICE, VHDL, Assembly/Machine Code
Hardware: Vector Network Analyzers, Oscilloscopes, Function Generators, Multimeters, Probes, Microcontrollers, FPGAs