

# Benjamin Rotker

[ben.rotker@gmail.com](mailto:ben.rotker@gmail.com) | <https://rotkstar.github.io>

Boston, MA | (978) 835-4318

---

## SUMMARY

Detail-oriented BSECE graduate from UMass Amherst, currently pursuing an MSECE at Georgia Tech. Experienced in embedded systems and automation, with a strong foundation in hardware and software integration.

## SKILLS

Programming & Scripting: Python (NumPy, Pandas, scikit-learn, selenium, Flask), C, C++  
Tools & Software: MATLAB, Linux, Bitbucket/Git, KiCad, JIRA, Microsoft Office

## EDUCATION

### Georgia Institute of Technology

In Progress

*Master of Science in Electrical & Computer Engineering*

GPA: 4.0

Selected Coursework: Statistical Machine Learning, Adaptive Filtering, Advanced Digital Signal Processing

### University of Massachusetts Amherst

May 2023

*Bachelor of Science in Computer Engineering*

GPA: 3.57

Commonwealth Honors College, Dean's list

Selected Coursework: Abstract Data Structures with Java, Embedded Systems Lab, Security Engineering, Hardware Design, Communication Systems, Digital Signal Processing, Systems Programming

## WORK EXPERIENCE

SharkNinja

*Test Engineer*

Fall 2023 - Present

- Engineered test automation fixtures end-to-end, including PCB design, embedded firmware in C/C++, and Python applications, reducing manual testing effort and increasing reliability
- Diagnosed and resolved hardware and software failures in legacy test fixtures, implementing design and code improvements that eliminated recurring errors and reduced downtime

## RELEVANT PROJECTS

### Automated Lab Monitoring System

- Developed a Python-based framework to acquire and log environmental data from 18 lab sensors, processing ~77,760 data points per day
- Built a cross-platform application (Windows & Raspberry Pi/Linux) to visualize lab conditions in real time on a custom webpage and maintain secure backup logs
- Implemented Python web automation to replace a deprecated vendor API, handling edge cases like time synchronization and real-time data retrieval
- Designed a deployable application for coworkers to acquire lab data over a specified time frame and append it to test data sheets, improving accessibility and efficiency
- Experimented with a random forest regressor to predict lab conditions during work hours, providing insights into environmental trends and informing future optimization.

### Air Velocity Measurement Rig

- Built a custom 4-axis CNC machine for a high precision automated airflow sensing application
- Designed a PCB for air pressure and temperature sensing and developed firmware to interface with sensors
- Implemented I2C, UART, RS232, and USB protocols to transfer data between subsystems
- Wrote extensive Python software for data acquisition, synchronization, and analysis, enabling efficient collection and processing of data
- Authored and published three test protocols for airflow measurement, standardizing team experimental procedures
- Facilitated deployment of a duplicate fixture by handling component ordering, shipping, setup, and training at an off-site location