

SAWYER BOWERMAN

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EDUCATION

University of Massachusetts - Boston

Boston, MA

Bachelor of Science: Computer Science and Mathematics

May 2026

- **GPA: 3.5 – Dean’s List**
- **Relevant Coursework:** Data Structures & Algorithms, Systems Programming (C, Assembly), Computer Vision, Compiler Design, Operating Systems, Functional Programming (Racket), AI (Python)
- **Intro. to Computing Teaching Fellow & Grading Assistant:** Taught classes/facilitated test prep to hundreds of students
- **Undergraduate Research Fellow:** Developed automated computer vision pipeline for real-time detection and tracking of extracellular vesicles in microscopy video data. (Can be viewed on my GitHub)
- **STEMPOWER Research Fellow (Alfred P. Sloan Foundation) - 2% Acceptance Rate:** Spearheaded migration of legacy MATLAB jamming algorithms to Python for improved computer vision and Machine Learning integration. Collaborated with graduate team to modernize signal processing codebase and enable CV framework compatibility.

PROFESSIONAL EXPERIENCE

Exelon – PECO

Malvern, PA

Engineering Intern for Transmission & Substation Engineering Asset Health and Analytics branch

June 2025 – Current

- Engineered data analysis workflows to extract and classify equipment maintenance records from Cascade databases, applying NLP techniques within an Agile environment, leveraging automation and secure coding practices to improve app resiliency.
- Developed automated weekly reporting system using Python and SQL to identify transmission/substation assets missing maintenance triggers, reducing manual effort and improving reporting accuracy through data pipeline automation.

CRK Properties

Baltimore County, MD

Sub-Contractor

May 2023 – August 2023

- Collaborated with CEO to design and prototype a WAN-enabled IoT leak detection system for commercial buildings, reducing water damage risk through automated monitoring and early detection.

Vote Jobs Maryland

Baltimore, MD

Data Entry & Analysis Operator

July 2021 – August 2021

- Developed automated Python web scraping bot to streamline legislative data processing, reducing manual Senate/House data entry time while improving database accuracy for 100,000+ voter records.
- Maintained 100% data integrity standards for sensitive electoral information through an automated multi-check process.

Barcoding Inc.

Baltimore, MD

Hardware & Software Configuration Specialist

March 2020 – June 2021

- Developed Python- and SQL-based applications to automate RFID product tracking and extract operational metrics, cutting manual reporting overhead by 40%.

TECHNICAL SKILLS

- **Languages:** Python, Java, C#, C, C++
- **Tools:** Git & GitHub, SQL, Machine Learning/AI, Raspberry Pi/Arduino/ESP32, emacs, Anaconda, Agile/GitHub Actions
- **Platforms:** Windows10, MacOS, Linux (Ubuntu, Debian)

PROJECTS & OUTSIDE EXPERIENCE

Relevant Personal Projects

Boston, MA

Personal Projects

2023-2025

- **Developed "Rigid" - a real-time gesture-controlled VST3 audio plugin** using JUCE framework and computer vision, enabling hands-free audio effect manipulation across major DAWs (FL Studio, Ableton Live, Logic Pro).
- **Implemented OSC protocol for low-latency communication** between Python-based gesture classifier and C++ audio plugin, achieving real-time gain automation and granular audio effects triggered by palm/fist gestures.
- **Integrated webcam-based hand tracking** with custom machine learning classifier, eliminating need for wearable hardware while maintaining professional audio production workflow compatibility.
- **Designed Python-based automated trading system** implementing mean-reversion financial strategies with Tesseract OCR for real-time market data analysis and decision-making algorithms.
- **Developed Python web crawling utility** that automatically searches and analyzes README files across GitHub repositories based on user-specified keywords, demonstrating web scraping and automation skills.
- **Constituted a fully functional and comprehensive terminal-based wordle clone** running in linear time complexity.

ACTIVITIES & LEADERSHIP

Algorithms Club

Boston, MA

Club Leader

November 2022 – Present

- Worked with a wide group of peers to strengthen their programming and technical skills through Leetcode and Codewars, achieving top 28% global ranking on Leetcode platform.

Umass Boston Music Production Club

Boston, MA

Council Member

September 2024 – Present

- Served as a workshop presenter and advisor, working closely with leadership to inform key decisions and run meetings.