

Shawn M. Charles

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EDUCATION

Northeastern University, Boston, MA

Candidate for Bachelor's Degree in Computer Engineering

Candidate for Master's Degree in Computer and Electrical Engineering – Computer Systems and Software Concentration **May 2026**

Coursework: Operating Systems, Database Design, Engineering Algorithms, Digital Design, Computer Architecture, Networks

GPA 3.82/4

May 2025

SKILLS

Technologies: Visual Studio, Arduino, SolidWorks, AWS, Building computers, circuit design, ARM architecture, Raspberry PI

Programming: C++, HTML, CSS, Java, JavaScript, Python, MATLAB, SystemVerilog, MySQL, Bash

WORK EXPERIENCE

Dephy – Boxborough, Massachusetts

January 2024 – June 2024

Software Engineer – MySQL, Bash, Python, C/C++, AWS, HTML, CSS, Raspberry PI

- Designed testing protocols for embedded C code that controlled wired communication between microprocessors
- Developed data storage website through Django Python web server operated in AWS testing exoskeletons
- Created MySQL database for webserver to store users and data taken from exoskeleton
- Implemented Raspberry PI with Bash and Python scripts to gather data from exoskeleton and upload to web server

Harvard Medical School – Boston, Massachusetts

January 2023 – June 2023

Virtual Reality Design Specialist for Neurobiology Research – Python, NI-DAQ, Panda3D

- Debugged and deployed Python code implementing virtual reality games in Panda3D module
- Worked with Lab View to transfer data from games to an auxiliary computer through NIDAQ instruments
- Developed interdisciplinary team skills through working and presenting project to neurobiology members
- Augmented infrastructure skills by assembling virtual reality hardware setup with NI-DAQ

PROJECTS

CPU Emulator – C, Git, Linux

January 2025

- Created processor structure which allowed access to registers and memory represented as arrays
- Incorporated instructions LOAD, STORE, MOVE, ALU operations, CALL, JUMP, IN, OUT, PUSH, POP and RET
- Implemented the ability to run binary machine code through emulate function which invoked required instructions

Medsafe Cooler – MySQL, Python, ESP32, C/C++

December 2024

- Designed a cooler that stores medicine delivery and keeps at temperature to ensure quality of medication
- Created MySQL database and implemented Python scripts to apply the routes to user interface
- Spearheaded backend for the Flask web application to allow users to store medicine data for devices

Homefinder – Python, REST API, Streamlit, MySQL

August 2024

- Provided realtors and homebuyers with a tracker of home prices so they can find the best time to buy
- Designed HTTP routes for MySQL database queries in Representational State Transfer (REST) API
- Integrate Google Maps API so users can easily navigate homes based on location search

LEADERSHIP

- **Club Baseball President:** Leadership and organization of the team including scheduling and player management (2023-2024)
- **Oasis Mentorship:** Guided a team of participants to complete a software project in 8 weeks (2023)

BACKGROUND AND INTERESTS

- Computer Building, Baseball, Golf, Poker, Lifting, Cooking, Basketball, Video Games