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Eli MacColl

Software Development | Web Development | Data Engineering

Earned a Master's degree in Computer Engineering with a concentration in hardware and software for machine intelligence. Driven self-starter with a passion for technology and problem-solving who is committed to building innovative solutions with a real-world impact. Looking for a collaborative and creative environment where I can contribute in a meaningful way while continuing to expand my horizons.

Skills

Languages: JavaScript, TypeScript, Python, Java, C++, HTML/CSS

Technologies: React, Tailwind CSS, Bootstrap, Redux, NodeJS, ExpressJS, SQL, MongoDB, Redis

Experience

Research at Goodwill Computing Lab | Boston, MA July 2021 - December 2021

- Research assistant at Goodwill Computing Lab, improving high-performance computing and accessibility.
- Performed an investigative analysis of the hardware failures of the Japanese supercomputer, Fugaku.
- Analyzed existing data to identify root causes, examine the temporal and spatial locality of failures, and produced a comprehensive report with visualizations for metrics such as rate of failure and repair time.

Hourly Course Assistant | Boston, MA September 2022 - May 2023

Graded conceptual and coding assignments, ran labs, and hosted office hours for two engineering courses:

Fundamentals of Networks - Fall 2022 Semester

- Taught networking concepts and debugged Python code for two sections of 25 and 65 students.

Wireless Sensor Networks and the Internet of Things - Spring 2023 Semester

- Facilitated labs for a section of 40 students using microcontrollers and Northeastern's wireless network emulator, Colosseum.
- Resource for troubleshooting wiring and debugging C++ code to run on the CC2650 LaunchPad.

Projects

Habitat-Simulating Terrarium

- Built a terrarium to cultivate endangered and hard-to-grow plants by simulating a variety of environmental conditions via programmable growth parameters, including air temperature, humidity, soil moisture, etc.
- Developed software components using HTML/CSS/JavaScript for the UI and C++ for the microcontrollers.
- Designed interactions between the UI, the sensor suite, and actuators inside the terrarium.

ReviewSpot

- Spotify album review web application for content rating and discussion.
- Full-stack development using JavaScript, React, Redux, Bootstrap, ExpressJS, and MongoDB.

Education

Master of Science - **Northeastern University** | Boston, MA September 2021 - May 2023
Computer Engineering | GPA 3.9 | Graduate Dean's Scholarship

Coursework: Database Management Systems, Software Security, Computer Vision, ML/Pattern Recognition

Bachelor of Science - Northeastern University | Boston, MA September 2018 - May 2022
Computer Science and Computer Engineering | GPA 3.7

Coursework: Web Development, Software Development, Database Design, Networks, Algorithms, Foundations of Cybersecurity, Computer Architecture, Computer Systems