Brennan Mahoney

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Education

Boston University College of Engineering Expected May 2025

Bachelor of Science in Computer Engineering (Concentration in Machine Learning) GPA: 3.82/4.00

Relevant Coursework

Deep Learning, Software Engineering, Programming for Engineers, Operating Systems, Machine Learning, Computer Organization, Computational Linear Algebra, Probability-Statistics-Data Science, Algorithms, Logic Design

Skills

Software: Python, C, C++, JavaScript, HTML, CSS, Java, Python, MATLAB, Arduino Code, Onshape, SwiftUI, Verilog
Technical: Soldering, Wiring, Hardware imaging

Work Experience

Software Engineering Intern Summer 2024

John Hancock

- Contributing to large database provisioning, configuration, monitoring, maintenance, release management, migration, and/or decommissioning.
- Exposed to industry-leading, enterprise technologies, including .Net, Java, Spring Boot, JavaScript, Pivotal Cloud Foundry, SQL Server, and more.
- Building solutions that will support advancing the companies state architecture and align with the companies client's strategic vision.

Software Engineering Intern (Applications and IT Team) Summer 2023, December 2023 – January 2024

EG America

- Applied HTML, CSS, and JavaScript for point of sales display/content and worked with git for source code management and collaboration.
- Deployed software using Tanium, software development, hardware imaging.
- Utilized Python and .bat files for credit processor speed improvements and point of sales bugs.
- Troubleshot technology with pin pads, credit processors and fuel technology.

Information Technology Specialist January 2024 – May 2024

Boston University

- Worked with a team to fix software bugs and technical issues within classrooms.

Projects/Extra Curricular

HolyFit IOS App (Personal Developer App)

- Applied SwiftUI to write front-end user interface including the ability to make posts, comments and likes.
- Programmed back-end using Firebase that stores user data for usernames, passwords, and account information.

Audio Style Transfer via Neural Network (Team Leader)

- Collaborated on a team to implement a Convolutional Neural Network (CNN) setup with a VGG19 network for style transfer in audio spectrograms, bridging the gap between image processing and audio data.
- Employed machine learning models for audio synthesis, specifically using the WaveNet vocoder, to convert mel spectrograms back to audio, demonstrating proficiency in both audio analysis and synthesis.

Simple Shell Project

- Created a Basic Shell written in C to accept and execute commands, redirect input/output, and conduct processes in the background.
- Developed a dynamic input parsing function that intelligently handles multiple special characters and command chaining, increasing the flexibility and functionality of the shell.

File System

- Implemented a file system in C with functions for creating, mounting, unmounting, opening, closing, block reading/writing, deleting, and listing files.
- Designed data structures for managing file metadata, file descriptors, and a simulated file allocation table (FAT) within a block-based virtual disk environment.
- Implemented additional file system operations like file seek (`fs_lseek`), file truncation (`fs_truncate`), and retrieving file size (`fs_get_filesize`), enhancing file manipulation capabilities.

Thread Local Storage

- Developed a thread-local storage (TLS) system using C to manage memory spaces unique to each thread, enhancing data isolation and thread safety in concurrent applications.
- Designed a hash table mechanism for efficient mapping of threads to their corresponding TLS.
- Created functions for TLS creation, destruction, read, write, and cloning operations, supporting fundamental operations like memory protection, thread-specific data isolation, and efficient memory usage with reference counting.

Pi Kappa Alpha Fraternity (Recruitment Chairman)

- Led a group of people with the task of meeting, interviewing, and recruiting new members that would fit well within the fraternity.
- Have taken part in philanthropy helping raise over $100,000 for inclusive foundations.