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, Deans List: 5x

Relevant Coursework

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

Skills

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

Work Experience

Software Engineering Intern Summer 2024

John Hancock

- Collaborated with the team to update the onboarding screens by removing the skip button to ensure complete setup, and researched error boundary implementation for smooth user transitions during crashes.
- Created a new SOQL query to correct the communication between CareGiver and the Salesforce Data Cloud, enabling secure access and updates to patient sessions with a "Legacy" claim status.
- Projected to complete an update to the mobile app's Start Session UI in React Native to ensure the ICPs start their shifts near the insured to help prevent future insurance fraud.
- Conducted QA testing for the new development implementations to ensure smooth functionality for the user.

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 and conducted hardware imaging across computers.
- Utilized Python and .bat files for credit processor speed improvements and point of sales bugs.

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

WalletWatch Mobile App (Personal App)

- Developed a comprehensive expense tracking application using React Native, providing users with tools to manage and analyze their personal finances.
- Implemented user authentication and data storage using Appwrite, ensuring secure and reliable access to user data.
- Designed and integrated a user-friendly interface that allows users to input and categorize their weekly expenses, displaying breakdowns and summaries.

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.

File System

- Implemented a file system in C 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 (Lead 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 led and taken part in philanthropy fundraisers helping raise over $100,000 for inclusive foundations.