

JAY BURKHARDT

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Education

University of Massachusetts, Boston
Bachelor of Science in Computer Science

Jan 2021 - May 2022

Middlesex Community College
Associate of Science in Computer Science

Jan 2018 - Jan 2021

Courses: Compilers, Advanced Algorithms, Operating Systems, Higher Level Languages, Database Management, Ethics in Computing, Computer Architecture and Organization, Theory of Computation

Skills

Languages: JavaScript, C, Java, Python, TypeScript, Scheme, Coq
Technologies: React.js, Git, Vim, VSCode, IntelliJ, Jupyter

Experience

UMass Boston Machine Psychology Group

Boston, MA

Undergraduate Research Assistant - Front-End Team

Sept 2021 - Present

- Developed N-Tools-Browser, a front-end 3D medical visualization application for examining electrode data for clinicians, scientists, and researchers at NYU Grossman School of Medicine.
- Used the X-Toolkit, a graphics library built upon WebGL.
- Developed functionality for mapping electrode coordinates to MRI scans.

Projects

Connect-Four Minimax AI

- Created a connect-four AI in React.js with TypeScript using a minimax depth-first function and normal distribution heuristic function for evaluating board positions.
- Used alpha-beta pruning to dramatically reduce the search tree space

Hamming (7, 4) RAID 2 Encoding and Decoding

- Implemented a RAID 2 encoding in C that uses Hamming (7, 4) codes to encode plain text files into seven text files to simulate seven drives.
- Application can successfully decode the seven files into the original file even if one text file is corrupted.

Other Experience

Middlesex ACE Department

Lowell, MA

Supplemental Calculus Instructor

Sept 2018 - Dec 2018

- Developed lesson plans and taught differential calculus to small groups of students twice a week.
- Met with students for one-on-one tutoring.
- Attended monthly training modules to improve teaching skills.