JAY **BURKHARDT**

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Education

University of Massachusetts, Boston	Jan 2021 - May 2022
Bachelor of Science in Computer Science	

Summa cum laude

Middlesex Community College	Jan 2018 – Jan 2021
Associate of Science in Computer Science	

Courses: Compilers, Advanced Algorithms, Operating Systems, Higher Level Languages, Database Management, Ethics in Computing, Computer Architecture and Organization, Theory of Computation, Graphics, Linear Algebra, Discrete Math.

Skills

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

Experience

NYU Grossman School of Medicine with UMass Boston	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

N-Tools-Browser
• JavaScript and WebGL neuroimaging tool for 3D electrode visualization.
• Currently implementing additional functionality for showing electrode signal display over time.
• Public datasets are currently randomized to protect patient anonymity.

Connect-Four Minimax AI
• Connect-four AI in React.js with TypeScript using a minimax depth-first function and normal distribution heuristic function to evaluate board positions.
• Used alpha-beta pruning to reduce the search space.

Hamming (7, 4) RAID 2 Encoding and Decoding
• Implemented a RAID 2 encoding in C using Hamming (7, 4) codes to encode plain text files into seven text files to simulate seven drives.
• Decodes 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.