

# JAY BURKHARDT

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## Education

### University of Massachusetts Boston Bachelor of Science in Computer Science

May 2022

GPA: 3.9

*Honors:* summa cum laude • Distinction 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, Statistics

## Skills

**Languages:** JavaScript, TypeScript, React.js, Node.js, C, Java, Python, SQL, Scheme

**Technologies:** AWS, Git, Vim, Visual Studio Code, IntelliJ, Jupyter

**Platforms:** Ubuntu, Windows 10

## Experience

### NYU Grossman School of Medicine with UMass Boston

Boston, MA

Undergraduate Research Assistant – Front-End Team

Sept 2021 – May 2022

- Created 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.
- Implemented features for editing electrode attributes, adding annotations, and rendering 3D text tags.
- Published paper in *Frontiers in Bioinformatics – Data Visualization*.

## Projects

### Minimax Game AI

- Game 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 2019 – May 2020

- 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.

## Honors and Awards

- Distinction in Computer Science– University of Massachusetts Boston

May 2022