JOSEPH QUINN

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EDUCATION

Vanderbilt University - Nashville, TN *Graduating May 2027*

Bachelor of Science - ***Major in Computer Science &Math; Minor in Data Science***

Relevant Coursework: Algorithms and Data Structures; Database Design and Management; Software Engineering Principles; Operating Systems; Computer Networks; Calculus and Analytic Geometry; Mathematical Logic and Discrete Structures.

Colorado Early Colleges – Douglas County, CO *May 2023*

- Associate Degree of Science *GPA: 4.53*
- 82 concurrent enrollment credits

EXPERIENCE

Lockheed Martin – *Engineering Explorers Post;* Littleton, CO January *2019 - March 2020*

- Collaborated on engineering projects, covering rover fabrication and rocket engineering, including design, assembly, propulsion system optimization, and launch sequence development.
- Selected for a specialized educational program structured to deliver an in-depth exploration of the intricate facets of Lockheed Martin engineering methods and practices.
- Engaged in industry expert-led meetings on space programs for Maven and Osiris-Rex.

Vanderbilt Change++ – *Developer* *August 2023 – Present*

- Student-led software development organization at Vanderbilt University dedicated to providing innovative, cost-free technology solutions to nonprofit organizations.
- Developing and deploying web/mobile applications utilizing: Typescript, React, Node.js, Express, MongoDB, and AWS EC2.

PROJECTS

Snake Learning Model - *https://github.com/josephjquinn/Snake-Deep-Learning*

- Implemented a Deep Q-Learning AI reinforcement learning algorithm that interacts with the snake arcade game.
- Designed and implemented a feedforward neural network model using PyTorch.
- Implemented Q-learning algorithm logic, including state-action-reward-next state updates.
- Fine-tuned hyperparameters such as learning rate, discount factor, and exploration rate for optimal learning.
- Visualized training progress using plotting functions to track agent performance and learning trends over time using Matplotlib.

Mother to Mother Web App - *https://github.com/ChangePlusPlusVandy/MotherToMother*

- Developed a web application for a nonprofit dedicated to tracking incoming and outgoing donations for mothers in need.
- Created a client-side frontend using React PWA, and firebase, incorporating real time synchronization and session management.
- Implemented a custom backed server and database using typescript and SQL, to manage user data and donation information.
- Collaborated with a team and client to deliver a high-quality project using proper PR and sprint workflow.

Word Wise Algorithm - *https://github.com/josephjquinn/word-wise*

- Developed a game algorithm that uses feedback and statistical analysis of letter frequencies to make effective word guesses, systematically approaching the solution.
- Parsed Wordle game data stored in CSV format. Implementing data loading, cleaning, and transformation techniques to prepare the data for analysis using python.
- Conducted statistical analysis on gameplay data, creating data visualizations using Matplotlib and Seaborn libraries.

TECHNICAL SKILLS

Languages: Java | Python | HTML | CSS | JavaScript | Typescript | R
Libraries: Matplotlib | tkinter | pandas | seaborn | NumPy | bs4 | selenium | PyTorch | Prisma
Frameworks: NodeJS | ExpressJS | React | Firebase | MongoDB
Tools: Git | Fusion 360 | Prusa/Cura Slicer | Nvim | Docker