JOSEPH QUINN

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EDUCATION

Vanderbilt University – Nashville, TN   *Graduating May 2027*
       Bachelor of Science in Computer Science & Mathematics; Minor in Data Science
       Relevant Coursework: Algorithms and Data Structures; Database Design and Management; Software Engineering Principles;
       Calculus and Linear Algebra; Mathematical Logic and Discrete Structures.

EXPERIENCE

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, MySQL, and AWS EC2.

Lockheed Martin – *Engineering Explorers Post*   January *2019 - March 2020*
- Selection for a prestigious educational initiative, providing comprehensive insights into Lockheed Martin's engineering methodologies and practices.
- Contributed to interdisciplinary engineering projects, focusing on rover fabrication and rocket engineering. Responsibilities encompassed design, assembly, propulsion system optimization, and the development of launch sequences.

PROJECTS

Snake Learning Model - *https://github.com/josephjquinn/Snake-Deep-Learning*
- Implemented a Deep Q-Learning AI reinforcement learning algorithm interacting 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.
- Visualized training progress using Matplotlib to track agent performance over time.

Mother to Mother Web App - *https://github.com/ChangePlusPlusVandy/MotherToMother*
- Developed a web app for a nonprofit, tracking donations for mothers in need.
- Created client-side frontend with React PWA and Firebase for live session synchronization.
- Implemented NodeJS backend using Prisma and MySQL for user and donation management.
- Adopted agile workflow practices, including weekly sprints, detailed pull requests, and thorough code reviews.

Word Wise Algorithm - *https://github.com/josephjquinn/word-wise*
- Developed a game algorithm for effective word guessing using statistical analysis for the New York Times Wordle web puzzle.
- Achieved a 98% solve rate and an average of 3.7 guesses per word.
- Parsed Wordle game data in CSV format and conducted data cleaning and analysis with Python.
- Created 15+ graphical data visualizations using Matplotlib and Seaborn libraries.

ASL Gesture Model - *https://github.com/josephjquinn/asl-model*
- Built real-time sign language gesture recognition system using computer vision.
- Integrated a Random Forest classifier to classify gestures data, with over 90% prediction accuracy.
- Offered users a choice between a pre-trained model for instant recognition or personalized training with custom gestures.

TECHNICAL SKILLS

Programming Languages: Java | Python | HTML | CSS | Javascript | Typescript | R
Development Frameworks: NodeJS | ExpressJS | React | Prisma
Data Analysis: Matplotlib | Pandas | Seaborn | NumPy | Pytorch
Deployment Tools: Git | Firebase | MongoDB | AWS