Jacob A. Welsh

919-612-6730|jacob.awelsh@outlook.com|github.com/rufus1079|jacob.monsterjam.org/|linkedin.com/in/jacob-welsh-dev/

TECHNICAL SKILLS

Programming Languages: JavaScript, Python, Java, SQL
Databases: PostgreSQL, MongoDB, MySQL
Frontend Frameworks And Libraries: React.js, Next,js, TailwindCSS
Backend And APIs: Node.js, Express.js, Ruby on Rails, Flask, RESTful APIs
Authentication and Security: Devise, JWT, CSRF Protection, CORS
Development and Tools: Git, Github, Postman, Axios
AI And Prompt Engineering: OpenAI, LangChain, LLM Integration

EDUCATION

University of North Carolina at Charlotte
Bachelor of Science in Computer Science - Software Engineering
Cumulative GPA: 3.66/4.0;
Honors And Awards: Chancellor's List 2020-2024

PROJECTS

Money Bender – E-Commerce Web App
- Built a full-stack eCommerce site for selling handmade jewelry, handling user authentication, product listings, and orders
- Developed a secure Rails backend with Devise auth, PostgreSQL, and CORS for React.js frontend communication via Axios.
- Implemented the entire app independently, using TailwindCSS for styling and AI-driven development..
- Solved CSRF authentication issues, ensuring secure token-based API requests between frontend and backend.

Spotify Unwrapped – Data Visualization App
- Built a React.js & Express web app to visualize Spotify listening data with interactive charts.
- Integrated the Spotify Web API, managing backend requests and OAuth authentication for secure data retrieval.
- Resolved API authentication challenges, enabling users to access both personal and public listening data.

The Blank Pages – E-Commerce Web App
- Produced an Ecommerce application that streamlined paper sales, increasing efficiency and user satisfaction.
- Applied MVC architecture and Mongoose, optimizing database management and application performance.
- Integrated Express framework and developed custom middleware for enhanced functionality.

Reddit Clone Application – Social Platform
- Led a team of 3 to develop Flask application with SQLAlchemy inspired by Reddit.
- Integrated user authentication, database management, and CRUD functionality for users, posts, and groups.

Algorithmic Implementations
- Developed AI search algorithms (BFS, DFS, A*, Greedy, Alpha-Beta Pruning) to solve complex pathfinding problems
- Implemented reinforcement learning (Q-Learning, Value Iteration) to train AI for a Pac-Man-style mini-game

ACTIVITIES

Student Government Association (SGA) — Charlotte, NC
Upperclassmen at Large/Parliamentarian — July 2023 – January 2024
- Established and enforced updated bylaws, ensuring compliance with SGA regulations.
- Played a key role in shaping policies during General Assembly sessions, contributing to meaningful legislative outcomes.

Pi Kappa Alpha — Charlotte, NC
External Vice President — November 2022 – November 2023
- Spearheaded outreach efforts, cultivating relationships with 15 campus organizations.
- Led and mentored a cabinet of six officers and three committees, achieving significant progress on key initiatives and enhancing team performance.
- Streamlined the planning and execution of fraternity events, resulting in increased participation and successful outcomes.