MICHAEL MOSURO

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Education

Morgan State University

Bachelor of Science in Computer Science *Baltimore, MD*

Relevant Coursework

- DSA, Software Engineering, Algorithms Analysis , Database Design , Operating Systems , Computer-Architecture

Experience

Code-Path Web 102 Course **Feb. 2024 – April. 2024**

Member *Remote*
- Participated in an intensive full-stack development curriculum, gaining proficiency in React and API integration while executing over 10 hands-on projects that simulated real-world application scenarios.
- The curriculum covers key web development topics APIs, database integration, and deployment, equipping students with industry-relevant skills.
- Developed a full-stack project using React for the fronted , Supabase for the backend ensuring seamless collaboration and high-quality implementation.

SAGE (Smart Wearable Device for Assisted Geriatric Monitoring in Elders **Jan. 2024 – Feb. 2024**

Undergraduate Research Assistant(Minds-Lab) *Baltimore,MD*
- Developed a real-time health monitoring dashboard utilizing Next.js and Tailwind CSS, providing an intuitive user interface for medical professionals.
- Implemented secure authentication routes with Fast-API and jwt-tokens , ensuring user data privacy and system integrity.
- Containerized the application with Docker and optimized PostgreSQL for efficient HRV data storage and retrieval, improving performance and scalability.

Minds-Lab (Machine Intelligence and Data Science) **Sep. 2024 – Present**

Undergraduate Research Assistant *Baltimore,MD*
- Developed python machine learning models using techniques as random forest ,logistic regression and decision trees to achieve above a 95% accuracy in predicting risk factors for coronary artery disease and type 2 diabetes
- Conducted exploratory data analysis (EDA) with NumPy and Pandas, refining large datasets by eliminating redundant features and extracting actionable insights.
- Engineered data-driven heatmaps, statistical plots visualizations to analyze socioeconomic and geographic factors influencing health disparities.

Projects

Bear-assist | *(React,Python,AWS,Lang-Chain,Flask)*
- Developed a full-stack AI assistant using React, Flask, and Lang-Chain to support 500+ CS students with personalized course planning, resume tips, and department-specific Q and A, powered by RAG and a PostgreSQL-based vector knowledge base.
- Integrated Eleven Labs TTS/STT APIs with FFmpeg to deliver real-time speech-to-text and text-to-speech capabilities, enhancing accessibility and allowing users to interact with the assistant via voice across browsers.
- Integrated Docker-based deployment architecture for cross-platform compatibility, ensuring seamless development, testing, and deployment across Mac, Linux, and Windows; enabled professors to update knowledge base content via an admin dashboard and AWS S3-backed document management.

Resonance | *(Next.Js, Tailwind-CSS, Docker, Python, PostgreSQL)*
- Developed a real-time music discussion platform using Next.js for a high-performance, responsive front end and Python for a scalable, efficient backend, ensuring seamless user experiences at scale.
- Integrated Open-AI-API to generate meaningful conversation prompts, fostering meaningful discussion around music to enhancing user interaction
- Leveraged and optimized the Spotify API for accurate music discovery and recognition, ensuring consistent album artwork retrieval and real-time data synchronization.

Technical Skills

Languages: Python, HTML,CSS, JavaScript, SQL
Developer Tools: VS Code, GIT, Docker
Technologies/Frameworks: Libraries: React, Fast-API, Flask, Express.Js

Leadership / Extracurricular

Color-StacK **Spring 2024 – Present**

Member *Morgan State*