Michael Mosuro

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Education

Morgan State University **Aug. 2021 – May 2025**
Bachelor of Science in Computer Science *Baltimore, MD*

Relevant Coursework

- Machine Learning, DSA, Algorithms Analysis, Database Design, Statistics, Calculus I and II

Research Experience

Minds-Lab (Machine Intelligence and Data Science) **Sep 2024 – Present**
Undergraduate Research Assistant *Baltimore,MD*

- Developed machine learning models achieving 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 visualizations (heatmaps, statistical plots) to analyze socioeconomic and geographic factors influencing health disparities.

SAGE (Smart Wearable Device for Assisted Geriatric Monitoring in Elders) **Jan. 2024 – Feb. 2024**
Undergraduate Research Assistant *Baltimore,MD*

- Developed a real-time health monitoring AI-powered dashboard with Next.js and Tailwind CSS, providing an intuitive UI for medical professionals.
- Implemented secure authentication with Fast-API, ensuring user data privacy and system integrity.
- Containerized the application using docker to store data in PostgreSQL and query HRV health data efficiently, optimizing retrieval speed and scalability.

Projects

Datathon4Justice: (Fair Chance-Hiring) | *(Python, Selinuim)*

- Developed a scalable Python web scraping solution using Beautiful-Soup and Selenium to aggregate state-level fair chance hiring data from Indeed, improving access to critical hiring insights across all 50 states.
- Collaborated with a cross-functional team of 8 to perform data analysis on fair chance hiring disparities, producing actionable insights that enhanced employment opportunities for over 1,000 individuals with criminal records.
- Optimized data pipelines by transforming raw scraping outputs into structured CSV files, streamlining integration into predictive modeling workflows, and increasing operational efficiency.

Safe-Core: Amazon Trusted AI Case Competition (Runner-Up)

- Conceptualized and pitched a cutting-edge data-driven security framework utilizing AI/ML techniques to detect vulnerabilities in LLM-assisted code generation.
- Suggested the development of an NLP-powered prompt analysis system, using synthetic data to identify potential security risks in user inputs and enhance model robustness.
- Recommended using AWS Lambda for scalable, real-time security evaluations, reducing latency to 3 seconds for faster response times.

Technical Skills

Languages: Python, SQL
Developer Tools: VS Code, GIT
Technologies/Frameworks: Numpy, Pandas , Scikit-Learn, Matplotlib, TensorFlow , GitHub

Selected Publications

Chelsea Minard, Chukwuemeka Obasi, **Michael Mosuro**, Iyinoluwa Ayodele, Oluwasegun Soji-John, Oluwatobi Olajide, Jamell Dacon. "Exploring Socioeconomic and Demographic Factors in Coronary Artery Disease: Using AI and Knowledge Graphs to Identify Healthcare Inequities." Society of Epidemiologic Research 2025 Mid-Year Meeting, 2025. (SER Meeting 2025)

3rd place poster at (National Symposium on Equitable AI)

Mikayla Brown, Oluwatobi Olajide, **Michael Mosuro**, Okikioluwa Popoola, Iyinoluwa Ayodele, Nyah Nunnally, Obaloluwa Wojuade, Oluwatomiwa Baruwa, Nicholaus Somerville - Edordu, Abimbola Ologurun, Jamell Dacon. "Towards Data-Driven Diabetes Care: Identifying Key Biomarkers and Risk Factors for Type 2 Diabetes through AI Models". Society of Epidemiologic Research 2025 Mid-Year Meeting, 2025. (SER Meeting 2025)