

# Michael Mosuro

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## Education

### Morgan State University

Bachelor of Science in Computer Science

Aug. 2021 – May 2025

Baltimore, MD

## Relevant Coursework

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

## Technical Skills

**Languages:** Python, SQL

**Developer Tools:** VS Code, GIT

**Technologies/Frameworks:** Numpy, Pandas, Scikit-Learn, Matplotlib, TensorFlow, GitHub

## Experience

### Data Science Intern

Battelle Memorial Institute

May. 2025 – Aug. 2025

Columbus, OH

- Contributed to a large-scale disease spread simulation model to analyze outbreak dynamics and agricultural impacts across 48 U.S. states, enabling data-driven policy and mitigation strategies.
- Engineered a computationally efficient approximation algorithm for a complex plume dispersion model, significantly improving runtime without compromising accuracy.
- Designed and implemented a comprehensive end-to-end unit testing framework, ensuring model reliability, reproducibility, and code integrity throughout the development life cycle.

### Minds-Lab (Machine Intelligence and Data Science)

Undergraduate Research Assistant

Sep 2024 – Present

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.

## Projects

### Datathon4Justice: (Fair Chance-Hiring) | (Python, Selenium)

- Developed a scalable Python web scraping solution using BeautifulSoup 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.

## 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, Nicholas 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)