Mustapha Unubi Momoh

Waterloo, Canada

(548) 255-4426 mustaphaunubi@gmail.com github.com/mustaphau linkedin.com/in/mustaphaunubi

Interests

Machine Learning, Data Science, Generative AI, and Data Visualization

Work Experience

Amazon.com **Waterloo, On**
AWS Community Builder in Machine Learning and GenAI *February 2024 – present*

- Fostering a learning community around AWS services and Machine Learning.

Stealth startup (Contract) **New York, NY (Remote)**
Machine Learning Engineer (Data Science Team lead) *March 2024 - May 2024*

- Trained, packaged, deployed deeplearning models for spoofing verification for credit card and spend management companies.
- Worked with VP of Engineering to set up webhooks, API gateway, and other lambda layers, and to write the API specification and technical report detailing the benchmarking results.
- Led the Data Science team in pitching to two corporate credit card and spend management companies with positive feedback.

Tools: AWS Lambda, Deeplearning, Amazon Sagemaker, API gateway, SQS, TensorFlow serving.

Capgemini, Checkcare, Stealth Startups, Upwork **Remote**
Data Scientist and Generative AI Engineer *April 2023 – present*

- Worked as a Generative AI consultant for Copilot development for a Visual programming language.
- Worked on a Beauty Retail Generative AI POC using PaLM-2, Stable Diffusion, and Vertex AI. Specifically, I finetuned and deployed stable diffusion models and Chat-bison to Vertex AI endpoints.
- Wrote AWS architected solutions for startups and companies for use cases including Medical GenAI, Injury Claims LLM-based processing, and AI-assisted compliance check for Finance Explainer videos.
- Designed AWS architecture for efficient image processing for a bank check processing company.
- Worked as the AI engineer for a proof of concept (POC) of an AI shopping Assistant similar to Shopify's assistant but tailored to the client's inventory.
- Developed a Generative AI POC that generates new tutorial articles and slides based on Atlassian Confluence articles.
- Worked on a project for Causal understanding of REM sleep, Deep sleep, and Sleep latency for a company.

Tools: GCP, Vertex AI, Knowledge graphs, Amazon Neptune, neo4j, Amazon Kendra, Named Entity Recognition (NER), Intent recognition (with finetuned BERT), AWS Bedrock, Large Language Models (Titan, PaLM-2, OpenAI GPTs), Text embedding, Vector DBs, Amazon Kendra, Streamlit, AWS EC2, Explainable AI with SHAP, Bayesian Causal Inference, and Machine Learning.

Founder and Data Analytics Trainer, Karaam Analytics, Lagos, Nigeria *June 2021 – Dec. 2022*

Data Science & STEM instructor, Data Scientists Network and Tuteria Limited *April 2018 – Dec. 2021*

Education

- **University of Waterloo, Kitchener Ontario** **Sept 2022 – Aug 2024**
  Master of Applied Science, Systems Design Engineering
  - **Thesis:** Remote Medical Diagnosis in Virtual Reality: A Mixed-methods Approach to Understanding Patients and Physicians' Perceptions through Thematic Analysis and Regression Discontinuity Design.

Tools: Causal inference, Thematic analysis, Data Science

– **Coursework and Papers:**
  * Advanced Topics in Pattern Recognition (SYDE 770)
    · Project Paper: Comparative Analysis: Real-World Weighted Cross-Entropy Loss Functions Across Various Activation Functions
  * InfoViz for AI Explainability (CS 889)
    · Project Paper: Interactive Dashboard for Text Label Exploration
  * Data Structure in Health Informatics (CS 792)
    · Depression Detection System with Decision Trees and LIME
  * Time Series Analysis (SYDE 631)
    · Understanding Impact of Greenhouse Gas Emissions on Global Warming with Structural Time Series

- **University of Port Harcourt, Port Harcourt** **Jan 2011 – Feb 2016**
  Bachelor of Engineering, Petroleum Engineering

Teaching, Leadership, and Outreach

- *Teaching Assistant for Linear Algebra (SYDE 114, UWaterloo)* *2023 - 2024*
- *Teaching Assistant for 3D visualization in Autocad (SYDE 101L, UWaterloo)* *Fall 2023*
- *Code of Conduct Volunteer (Django 2022 Conference, Porto)* *July 2022 – Sept 2022*
- *Coding Instructor (Code Tenderloin, San Francisco, US)* *Feb 2022 – March 2022*
- *Teaching Assistant for 2021 Code in Place, Stanford University* *April 2021 – May 2021*

Projects and Hackathons

Interactive Visualizations of Les Miserables Character Relationships with D3.js

- Tools: Dimensionality Reduction (t-SNE, MDS, PCA), D3.js, CSS

2024 Nvidia's Generative AI on RTX PCs Contest
- Project: Simplifying Documentation review on Atlassian Confluence with TensorRT-LLM and LLAMA2
- Tools: Quantization, Compiling LLMs to TensorRT-LLM, Docker, Streamlit

2022 Microsoft Responsible AI Hackathon
- Project: Primary Open Angle Glaucoma - Deep Learning Assisted Diagnosis
- Tools: Deeplearning, Azure, Fine-tuning

2022 SAS Hackathon
- Project: End-to-End Marketing Analytics to facilitate the development of customer retention programs
- Tools: SAS Viya, SAS Analytics Studio, Microsoft SQL Server, Python

2022 AWS Data Exchange for APIs Challenge: Security Vulnerability Check and Web Traffic Forecasting

2022 Amazon Sustainability Data Initiative (ASDI) Global Hackathon: Predicting Air Quality

2021 Blackathon (1st place)
- Project: AI Assistive Technology for the Visually Impaired and Blind

Technical Competencies

- **Software and Languages:** Python, SAS, D3.js, R, SQL, Excel, MATLAB
- **Frameworks:** keras, pytorch, OpenCV, pandas, numpy, scikit learn, PyTorch, fastai, TensorFlow, Django
- **Visualization:** D3.js, matplotlib, seaborn, Tableau, Power BI, SAS Visual Analytics Studio
- **Cloud:** AWS, Google Cloud Platform, Heroku, Microsoft Azure