Sylvester Junior Ampomah
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EDUCATION

The George Washington University, School of Engineering & Applied Science **Washington, DC**
Master of Science in Computer Science
Cumulative GPA**: 3.43/4** **May 2026**
Relevant Coursework: Design and analysis of Algorithms, Advanced machine learning, Advanced Software Paradigms

Kwame Nkrumah University of Science and Technology **Kumasi, GH**
Bachelor of Science | Telecommunication Engineering: **November 2022**
Cumulative GPA**: 3.6/4**
Relevant Coursework: Algebra, Calculus I and II, C programming, differential equations, Data Science. Numerical analysis

TECHNICAL SKILLS

- Frameworks: Pytorch, Tensorflow, MLflow, Pandas, Numpy, Scikit-learn, Jax, Flask, Fastapi, Transformers/LLMs
- Programming Languages: Python, C, C++
- Cloud: Google Cloud, Azure, AWS
- Developer Tools: Vscode, Jupyter Notebook, Google Colab, Git and GitHub, huggingface, Elasticsearch, Docker

PUBLICATIONS

Research, few-shot learning for product recommendation, HCII Conference(Accepted) **August 2024**

- Worked with a co-author to leverage transfer learning techniques with pre-trained LLM models such as BERT to capture contextual relationships in product descriptions for improved model performance.
- Implemented a fine-tuning pipeline for Generative Pre-trained Transformer models for extracting relevant features for model training aimed at improving performance by more than 95%.

Research, IoT Device Fingerprinting for anomaly Detection, WIDECOM 2023(published) **December 2024**

- Set-up experiments to collect data from the network and Link layers from IoT devices
- Designed various neural network architectures to generalize and differentiate between devices on the network that are compromised and devices that are not compromised, achieving a high accuracy score parallel to state-of-the-art models in literature

RELEVANT EXPERIENCE

Developer, Kwame AI ML coding challenge **October 2023 - October 2023**

- Created a working Question Answering AI System for Legal Practitioners, takes users' questions, searches for relevant passages in a given corpus, and returns answers (A Retrieval Augmented Generation system developed on Elasticsearch) containerized in docker and deployed on the Google cloud platform

Smart Eating Assistant **February 2025 – May 2025**

- Built an application that leverages Google Vision and vertex AI Gemini APIs, OpenCV, and FastAPI to extract information from images of processed food to give users relevant information on how the food will impact their health, suggesting alternatives where necessary.

AI Policy Design and Analysis Using Graph Neural Networks (GNNs) **February 2025 – May 2025**

- Designed and implemented a graph neural network (GNN) model for AI policy analysis, enabling identification of regulatory gaps and cross-jurisdictional policy recommendations.
- Integrated embeddings and heterogeneous graph structures to capture semantic and relational features from multi-source datasets, enhancing model interpretability and accuracy.

TECHNICAL PROJECTS

Student, Azubi Africa Hands-on Data Science Bootcamp **November 2022 - August 2023**

- Built a time series Model leveraging Arima, Sarima and Facebook Prophet to predict sales based on data from Corporation Favorita, detect sales trends, draw insights and suggest solutions for informed decision-making
- Worked with a team of 4 to develop a classification model to predict whether a customer will churn or not. Finding relevant data points, using data analysis, visualization and feature engineering, necessary for building a high-performing model
- Created an interactive UI with a team of 4 for Machine learning Model Prediction Using Streamlit and Gradio: Embed constructed models in a GUI for others to interact with Monitor model behavior during inference and querying. Optimizing performance to reduce latency