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, machine learning, Deep learning

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 Google cloud platform

Zettalearn **Kumasi,GH**
Instructor, Teaching Python for Machine Learning **January 2023 - August 2023**

- Developed and taught a Python course for machine learning to 20 final-year undergraduate students
- Supervised a student to build a federated learning model for anomalous detection on computer network traffic to improve network security. Achieved an overall f1-score of 95%
- Supervised a student in building a machine-learning model for electricity consumption prediction with Automation using Arduino for a student community of 10,000 people

TECHNICAL PROJECTS

Student, Azubi Africa Hands-on Data Science Program **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 behaviour during inference and querying. Optimizing performance to reduce latency
- Worked with a team of 4 Sentiment analysis Model leveraging a Pre-Trained Hugging face model: Based on Transfer Learning. Used hugging face pre-trained such as BERT and DISTILBERT (on TensorFlow, PyTorch frameworks)-to classify text as Neutral, Negative or Positive
- Designed API Endpoints for a sepsis prediction model using FastAPI, prioritizing efficiency, security, and latency. The API was containerized using Docker and deployed on Google Cloud platform