PRINCE MENSAH

Kigali, Kigali city, Rwanda

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PROFESSIONAL SUMMARY

I am an AI Engineer focused on building production-ready AI applications. I leverage large language models (LLMs) for a range of NLP tasks and also fine-tune them mainly for healthcare applications. I mostly deploy my applications using cloud-native technologies like Docker, Kubernetes, and AWS, and create intuitive interfaces with FastAPI.

TECHNICAL SKILLS

Languages	Python, JavaScript, C/C++, MATLAB, SQL, R
AI & ML	PyTorch, JAX, RAG, Flux, Hugging Face Transformers
Backend & APIs	FastAPI, Flask, Streamlit, Docker, RESTful APIs
DevOps & Deployment	Git, MLflow, Apache Airflow, DVC, Docker, AWS

WORK EXPERIENCE

SevenX Jul 2025 – Present
Artificial Intelligence Engineer *Kigali, Rwanda*

- Building RESTful APIs and fine-tuning large language models for healthcare applications, including medical text analysis and patient data processing systems.
- Developing scalable AI architectures using Docker containers and microservices for deployment in healthcare environments with strict compliance requirements.
- Implementing model versioning and monitoring pipelines for healthcare AI systems, ensuring reliability and accuracy in clinical decision support applications.

InstaDeep Dec 2024 – April 2025
AI Research Engineer Intern *Kigali, Rwanda*

- Researched on physics-informed deep learning approaches for remote sensing applications, focusing on vegetation parameter estimation from satellite imagery.
- Collaborated with research teams to develop a novel transformer-prosailvae architectures for environmental monitoring.

ALX Africa Sep 2022 – Dec 2022
Software Engineer Intern *Accra, Ghana*

- Built RESTful APIs for real-time data synchronization and integrated third-party services including payment gateways and shipping providers.
- Implemented automated testing suites and CI/CD pipelines using GitHub Actions, and Docker for continuous deployment and quality assurance.

Google Feb 2020 – Aug 2020
Data Analytics Intern *Accra, Ghana*

- Analyzed healthcare datasets to identify patterns in patient outcomes and treatment effectiveness, providing some helpful insights for healthcare providers.
- Developed healthcare analytics dashboards using Tableau to visualize patient demographics, treatment protocols, and clinical performance metrics.

KNUST Oct 2021 – Nov 2022
Research & Teaching Assistant *Kumasi, Ghana*

- Tutored undergraduate students in course including Differential equations, Numerical methods, and Linear algebra.
- Collaborated with faculty on research projects involving numerical methods, differential equations, and advanced linear algebra.
- Designed tutorial materials and mid-semester exams while maintaining regular office hours for student support.

PROJECTS

Physics Informed Transformer-VAE for Biophysical Parameter Estimation | ***Transformer, PROSAIL***
ML/CV *Personal Project*

- Developed a novel architecture combining transformer networks with physics-based radiative transfer modeling for accurate biophysical parameter retrieval from Sentinel-2 satellite imagery.
- Implemented self-attention mechanisms to capture complex spectral relationships while maintaining physical consistency through the PROSAIL model, significantly improving feature extraction and parameter estimation.
- Project link: [GitHub]

Text Summarization System | ***LLM-based, FastAPI, Streamlit, Transformers***
NLP *Team Project*

- Developed a full-stack text summarization system with FastAPI backend for authentication and transformer-based summarization.
- Implemented user-friendly Streamlit frontend for text input and summary visualization, with comprehensive API documentation.
- Project link: [GitHub]

Sentiment Analysis on Movie Reviews | ***BERT, Apache Airflow, MLflow***
NLP *Team Project*

- Developed an end-to-end ML pipeline for sentiment analysis using BERT, orchestrated with Apache Airflow for automated workflow management.
- Implemented MLflow for experiment tracking and DVC for data versioning, with FastAPI for model deployment.
- Project link: [GitHub]

Question-Answering System | ***Flask, Streamlit, Docker, SentenceTransformers***
NLP *Personal Project*

- Developed a Question-Answering (QA) system capable of processing user queries and returning relevant passages from a given corpus as answers. The system leverages advanced machine-learning techniques and efficient data retrieval mechanisms.
- Implemented Generative AI (GPT 2) model to provide direct, concise answers based on retrieved passages, and utilized Streamlit to create a UI to interact with the ML system.
- Project link: [GitHub]

EDUCATION

African Master's in Machine Intelligence (AMMI) *Feb 2024 – April 2025*
Master of Science in Machine Intelligence

African Institute for Mathematical Sciences (AIMS) *Nov 2022 – Aug 2023*
Master of Science in Mathematical Sciences

Kwame Nkrumah University of Science and Technology (KNUST) *Oct 2017– Nov 2021*
Bachelor of Science in Mathematics

AWARDS & CERTIFICATION

Young African AI Research Fellowship (YAAR) 2023
Research Award *Ascend 360*

- Prestigious award initiated at Deep Learning Indaba Conference 2023, sponsored by Jeff Dean, Chief Scientist at Google DeepMind and Google Research.
- Selected to nurture and develop emerging AI talent across the African continent.

Master's in Mathematical Sciences Scholarship 2022
Academic Award *AIMS*

- Full scholarship awarded by African Institute for Mathematical Science in collaboration with Ghana Government.
- Awarded to talented postgraduate students from the African continent for studies at AIMS-Ghana.

GNPC Scholarship Award 2017
Academic Award *Ghana National Petroleum Corporation*

- Competitive scholarship awarded to Bachelor's students demonstrating excellent academic performance.

· Supported my entire undergraduate education at KNUST.

AWS Certification 2023
Professional Certification *Amazon Web Services*

· Completed Python for Machine Learning and Deep Learning Program.
· Gained proficiency in building ML and DL algorithms on AWS platform.