

KWABENA DUFFUOR ASANTE

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PROFESSIONAL SUMMARY

Data Analyst and ML Engineer specialising in Health Informatics, with expertise in predictive modelling, explainable AI, and responsible AI development across clinical and analytics contexts. Experienced in building end-to-end pipelines from data ingestion to deployment, with a strong focus on AI governance and privacy-compliant system design. Passionate about applying data-driven approaches to improve health outcomes and support evidence-based decision-making.

TECHNICAL SKILLS

Languages: Python, R, SQL, Java, C++

ML/AI Frameworks: Scikit-learn, TensorFlow, PyTorch, Keras, SHAP, HuggingFace, Streamlit, Gradio

Data & Analytics Tools: Pandas, NumPy, Matplotlib, Seaborn, Plotly, Power BI, Tableau

Dev & Deployment: FastAPI, Docker, GitHub Actions, Firebase, Next.js, Kotlin (KMP), Jetpack Compose

Databases: PostgreSQL, MySQL, SQLite, Firestore

Concepts: AI Governance, SaMD Frameworks, Privacy-Compliant AI, Predictive Analytics, Deep Learning, HIPAA Compliance

CORE COMPETENCIES

Team Leadership · Technical Communication · Cross-functional Collaboration · Research Documentation · Stakeholder Presentation · Mentorship

PROFESSIONAL EXPERIENCE

Customer Experience (Part-Time) – Freedom Mobile – Toronto, ON *Aug 2024 – Present*

- Analyse customer usage data to deliver tailored mobile solutions and identify cost-effective plans.
- Build and maintain in-depth product knowledge to educate clients and resolve technical inquiries.
- Identify and troubleshoot technical issues related to customer devices and company systems.
- Maintain sales data reports and analyse stock turnover to support inventory optimisation.

Research & Data Analyst – UENR, Computer Science Dept. – Sunyani, Ghana *Feb 2022 – Jan 2024*

- Conducted statistical analysis using Python (Pandas, NumPy) to support institutional research initiatives.
- Designed and implemented CNN-based models for gestational diabetes prediction, achieving 83% diagnostic accuracy.
- Developed ML models using TensorFlow and Keras to predict student enrollment patterns with 87% accuracy.
- Applied NLP techniques to analyse research publications and identify emerging trends in computer science education.
- Prepared executive summaries and research reports presented to faculty and research teams.

Data Analyst (Co-led, Remote) – Ghana Statistical Service – Accra, Ghana *Jun 2021 – Sep 2023*

- Leveraged SQL and Python to identify data patterns and trends supporting evidence-based policymaking.
- Applied ensemble ML methods to predict infrastructure project outcomes and optimise resource allocation.
- Developed anomaly detection systems to identify data quality issues in national surveys, improving reliability by 25%.
- Built interactive dashboards using Tableau and Power BI to present survey findings to stakeholders.

STEM Educator – Various Educational Institutions – Ghana Education Service Jan 2013 – Apr 2024

- Delivered STEM instruction across junior and senior high levels using interactive digital platforms.
- Integrated LMS tools (Google Classroom, Microsoft Teams) to enhance blended learning delivery.
- Mentored students in practical ICT skills including coding fundamentals and responsible digital literacy.

FEATURED PROJECTS

Wellbeing+ Health App – Capstone (Nytia Labs) | *Kotlin Multiplatform, Jetpack Compose, Firebase, Health Connect, GitHub Actions*

- Served as Technical and Team Lead, building a privacy-compliant Android health app. Delivered full authentication flow, HIPAA-compliant audit trail, granular consent layer, wearable biometric integration, and CI/CD pipeline.

Maternal Health Risk Prediction | *Python, FastAPI, SHAP, Docker, CI/CD*

- End-to-end maternal health risk classification with a FastAPI scoring endpoint, SHAP explainability, Docker containerisation, and CI/CD pipeline integration for production-ready deployment.

Patient Health Records EDA | *Python, Pandas, Matplotlib, Seaborn*

- Exploratory data analysis of a real-world healthcare dataset. Loaded, cleaned, and analysed the data, then built charts to uncover key clinical and demographic patterns.

Fetal Health ML Analysis | *Python, Scikit-learn, XGBoost, Random Forest*

- Built and compared multiple ML models for fetal health classification using cardiotocography data, achieving 95.9% accuracy with XGBoost as the top-performing model.

CardioPredict Deep Learning SHAP | *TensorFlow, Scikit-learn, SHAP*

- Comprehensive ML pipeline for cardiovascular disease prediction using deep neural networks with explainable AI for clinical interpretability.

AI Insights Assistant | *Python, Streamlit, Plotly, HuggingFace LLMs*

- AI-powered customer churn analytics dashboard with natural language querying, interactive visualisations, and LLM-driven insight generation.

Telecom Customer Churn Analytics | *Python, SQL, Power BI*

- Full churn analysis pipeline with interactive Power BI dashboard and Python-based EDA, uncovering key churn drivers across contract types, tenure, and payment methods.

ResumeIQ | *Python, Gradio, HuggingFace LLMs, HuggingFace Spaces*

- AI-powered resume analyser with ATS match scoring, keyword extraction, and improvement suggestions. Built with Gradio and deployed live on HuggingFace Spaces.

EDUCATION

MPS Informatics – Northeastern University – Toronto, ON, Canada 2025 – 2026
Specialised in Data Science and Health Analytics.

MPhil Computer Science – University of Energy and Natural Resources – Ghana 2021 – 2023
Focused on Artificial Intelligence and Software Engineering.

BSc Information Technology Education – University of Education, Winneba – Ghana 2016 – 2020
Blended Computer Science with Pedagogical Technology.

CERTIFICATIONS

- Microsoft Certified Power BI Data Analyst Associate – Microsoft (July 2025)
- Certified SQL Specialist – University of Michigan (February 2025)
- Certified Tableau Data Analyst – University of California (February 2025)