

# EBENEZER KWAW

DATA SCIENTIST | MACHINE LEARNING  
ENGINEER | PUBLIC HEALTH ANALYST |  
CLOUD ENGINEER IN TRAINING



## CONTACT INFO

Agona East District Health  
Directorate, Ghana

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## PROFESSIONAL SUMMARY

Results-driven **Data & Machine Learning Practitioner** with 8+ years of experience in public health analytics, program management, and digital health innovation. I design end-to-end ML solutions, build data-driven web applications, and convert complex datasets into actionable insights.

I have delivered **production-ready ML apps** using Python, Scikit-learn, Transformers, Streamlit, LightGBM, and cloud-based tools. Currently expanding expertise in **AWS Cloud Engineering** and **full-stack development** to build scalable, secure, and intelligent systems.

Passionate about leveraging **AI, digital health, and data science** to transform healthcare delivery, improve disease surveillance, and

## TECHNICAL SKILLS

- Machine Learning (Supervised/Unsupervised), Transformers, Scikit-learn
- Python (Pandas, NumPy, Plotly, GeoPandas, Streamlit)
- Data Analysis, Data Visualization, EDA
- SQL, Excel, Power BI
- FastAPI, Flask, Git, GitHub Actions
- Cloud Computing (AWS – in progress), Deployment
- Geospatial Analytics, DBSCAN, LightGBM
- Full-Stack Development (HTML/CSS/JS – Beginner; Streamlit Apps)

## PROFESSIONAL SKILLS

- Public Health Program Management
- Research & M&E
- Leadership & Team Coordination
- Technical Documentation
- Communication & Stakeholder Engagement

drive decision-making in low-resource settings.

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## PROFESSIONAL EXPERIENCE

### Machine Learning Engineer (Intern)

#### Thrive Africa – Future of Work (Remote)

Sep 2025 – Present

- Developed and deployed a **Transformer-based text classification model** (DistilBERT) for customer support automation.
- Cleaned and analyzed large unstructured datasets, uncovering insights that improved model design.
- Built baseline ML models (TF-IDF + Logistic Regression) and improved final model accuracy and F1-score through fine-tuning.
- Developed a **Gradio interface** for real-time inference with optional FastAPI/Flask integration.
- Used GitHub workflows (branching, PRs, peer review) for version control and CI/CD.
- Delivered final project demo, documentation, and deployment architecture

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## SELECTED ML & DATA PROJECTS

### ITN Usage Prediction App (Public Health ML Solution)

- Built a predictive ML model to forecast **mosquito net usage behavior** among survey respondents.
- Developed a **full Streamlit app** with scenario simulation, risk segmentation, and automated predictions.
- Enabled stakeholders to upload CSV/Excel/Google Sheets for bulk predictions.
- Web app link: <https://itn-usage-prediction-nywkrchz3teyvjze27um8.streamlit.app/>

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### Post-Caesarean Pain Prediction Dashboard

- Created a **Random Forest-based clinical decision support system** predicting pain levels after C-section.
- Integrated interactive dashboards and automated risk classification.

- Deployed on Streamlit Cloud with a clean, user-centered UI.
- Web app link: <https://post-cs-pain-app-lx87gvgzyf3jucg8xq2l5e.streamlit.app/>

### **Surveil Ai — Outbreak Risk Dashboard (MVP)**

- Developed an epidemiological surveillance system supporting:
    - ✓ Login/Auth
    - ✓ Case reporting
    - ✓ DBSCAN hotspot detection
    - ✓ Shapefile-based district mapping
    - ✓ Automated data storage (SQLite + hashed passwords)
  - Built scaffolds for LightGBM-based outbreak risk scoring and CI/CD pipelines.
  - Web app link: <https://surveilai-e23cnv8c8balpcvxbwjckn.streamlit.app/>
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### **Loan Defaulter Risk Prediction App**

- Built a supervised ML model to classify loan applicants by risk level.
  - Integrated a simple and intuitive Streamlit interface for real-time predictions.
  - Web app Link: <https://machine-learning-model-to-predict-loan-defaulters-mazkvkvr4t2q.streamlit.app/>
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### **Movie Recommendation System**

- Developed a content-based recommender using cosine similarity and metadata.
  - Streamlit UI allows users to search titles and receive personalized recommendations.
  - Web app link: <https://movierecommendation-khmzfv7djvecuar2hcmc6j.streamlit.app/>
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## **PUBLIC HEALTH EXPERIENCE**

### **District Nutrition Officer / Public Health Officer**

#### **Ghana Health Service – Agona East District | 2021 – Present**

- Lead M&E for key health programs including routine immunization and COVID-19 vaccination.
- Supervised National Immunization Day operations, logistics, and data reporting.
- Member of the Disease Emergency Preparedness Committee supported outbreak response strategies.
- Designed SOPs and M&E tools that improved data quality and reporting efficiency

## District Representative & IPTp Program Coordinator

### RootsLink Africa (Malaria Elimination Program) | 2023 – Present

- Coordinated community rollouts of IPTp malaria interventions.
  - Trained and supervised volunteers, developed SBCC materials, and strengthened community engagement.
  - Created a **Kobo-Collect M&E system** for real-time tracking and reporting.
  - Prepared district reports used by NMEP-Ghana for policy and planning
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## RESEARCH & INNOVATION PROJECTS (ONGOING)

- **AI-Enabled Referral System Strengthening** – Using ML to predict referral delays and optimize emergency response.
  - **Diabetes Prediction System** – Data-driven risk prediction app for early detection.
  - **Anaemia-in-Pregnancy Intervention Platform** – ML-based prediction and targeted intervention design for pregnant women.
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## EARLY CAREER EXPERIENCE

### Nutritionist

*Samartex Hospital, Samreboi* | 2018 – 2021

Implemented nutrition programs, monitored outcomes, and collaborated with clinical teams to improve patient care.

### Nutritionist

*Shama Health Center* | 2016 – 2017

Delivered counseling, community outreach, and data collection for nutrition programs.

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## EDUCATION

- **BSc. Public Health (Community Nutrition)** – UDS (2012–2016)
- **Data Science Certificate** – Thrive Africa & KTU (2025)
- **Machine Learning & AI Certificate** – Thrive Africa & KTU (2025)
- **Cybersecurity Certificate** – Thrive Africa & KTU (2025)
- **Data Lab Certificate** – World Quant University (Ongoing)
- **Advanced Cloud Engineering** – (Ongoing)
- **Project Management in Global Health** – Univ. of Washington (2023)

## REFERENCE CONTACTS

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