ADEJARE ADELUGBA

AI / Machine Learning Engineer

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PROFESSIONAL SUMMARY

AI/ML Engineer with a B.Sc. in Computer Science and hands-on experience building data pipelines, deep-learning models and LLM-based applications in Python. Works across the full cycle: data extraction and cleaning, model training and evaluation, FastAPI and Docker deployment, and clear documentation for non-technical teams. Experience in medical-imaging classification, retrieval-augmented generation (RAG), workflow automation and web scraping.

PROFESSIONAL EXPERIENCE

Integrity Organization Ltd | AI/ML Engineer — July 2026 – Present

- Built backend modules for internal web platforms using Python, FastAPI, PostgreSQL and Docker.
- Built retrieval-augmented generation (RAG) and LLM-evaluation components using LLM APIs, vector search (pgvector) and DSPy.
- Built document-processing and data-extraction pipelines (PDF parsing, OCR) backed by automated tests.
- Built the organisation's website and online store.
- Wrote technical documentation, meeting minutes and progress reports for non-technical stakeholders.

Kontemporary Konsulting Ltd | Data Engineering Intern — Sept 2025 – Oct 2025, Abuja

- Developed a Selenium-based scraping system that aggregated polling-unit records across Nigerian states, replacing manual collection.
- Cleaned and standardised datasets by State and LGA, resolving mislabelled fields for downstream analysis.
- Developed a reusable Python workflow that exports structured multi-sheet Excel reports for stakeholders.
- Designed and developed a multi-page responsive website redesign (HTML, CSS, JavaScript). Code
- Implemented a Random Forest classification model with preprocessing, evaluation and metric visualisation; produced technical documentation for reuse.

TETFund | Data Engineering Intern — May 2024 – Oct 2024, Abuja

- Supported institutional data management with Python and Excel, improving consistency across datasets used for reporting.
- Developed classification and reporting scripts and an automation pipeline that reduced manual reporting work.
- Assisted with database maintenance and smoother reporting workflows.

SELECTED PROJECTS

Multimodal Breast Cancer Detection (final-year project) | *PyTorch, MedCLIP, TabNet, FastAPI, Docker* — GitHub

- Late-fusion model combining MedCLIP image embeddings with TabNet clinical features for three-class diagnosis, served through a FastAPI backend and Dockerised, with API contract tests.

Breast Ultrasound Classification | *TensorFlow, EfficientNet-B0, scikit-learn* — GitHub

- Compared EfficientNet-B0 transfer learning with Random Forest + PCA on the BUSI dataset, balancing classes by augmenting to 4,000 images per class. EfficientNet reached 95.75% accuracy and 0.99 AUC-ROC versus 58.2% accuracy for Random Forest.

Brain Tumor MRI Benchmark | *PyTorch, ViT, DINOv2, Grad-CAM* — GitHub

- Benchmarked a supervised Vision Transformer against self-supervised DINOv2 for MRI tumor classification, with Grad-CAM explainability.

Human Activity Recognition with Transformers | *PyTorch, time-series* — GitHub

- Built a Transformer-encoder classifier on wearable sensor data (HAR-70) with sliding-window segmentation, normalisation and positional encoding.

AURA News Intelligence System | *Python, LLM cascade, GitHub Actions* — GitHub

- Automated news extraction, summarisation and sentiment pipeline running four times a day on GitHub Actions, with a Google Sheets store and a live dashboard on GitHub Pages at zero hosting cost.

AI Engineering Internship Projects (15 tasks) | *LangChain, FAISS, ChromaDB, FastAPI, Redis* — GitHub

- NLP cleaning, semantic search, RAG over ChromaDB, LLM evaluation and tool-calling agents, ending in a full-stack capstone (FastAPI service, Spring Boot gateway, Redis cache, WebSocket UI).

Nigeria Polling Unit Data Pipeline | *Python, Selenium, Pandas, GitHub Actions* — GitHub

- Selenium scraper that structures a State → LGA → Ward → Polling Unit hierarchy into multi-sheet Excel workbooks, with a semantic mapping layer for mislabelled columns and CI-run tests.

Jare Mainframe | *React, Vite, Supabase, GitHub Actions* — GitHub

- Full-stack personal finance and goals dashboard with Supabase auth and database, scheduled jobs, an LLM-assisted workflow that logs transactions from bank alert emails, and an installable offline-capable PWA.

Heart Disease Risk Prediction | *Python, scikit-learn* — GitHub

- Classification system for heart-disease risk with preprocessing, scaling, model training and ROC-AUC / recall evaluation.

SENTRY Cybersecurity Awareness Platform | *JavaScript, Python, scikit-learn* GitHub

- Gamified social-engineering training app with 1,600+ Nigeria-focused scenarios, plus a Random Forest spam-detection model using TF-IDF features.

Portfolio Website | *HTML, CSS, JavaScript, Cloudflare Pages* GitHub

- Built and deployed my portfolio site with project pages, a contact form and automatic deployment on push.

Client Websites | *HTML, CSS, JavaScript, FastAPI* GitHub

- Built a multi-page website with a contact backend for a finance firm, and a portfolio website for a cybersecurity professional.

ADDITIONAL ML EXPERIMENTS

- **Medical Image Classification (Leukemia, Breast Ultrasound, Brain MRI)** – three PyTorch studies; ViT and DINOv2 reach 0.96–0.99 test accuracy on 4-class brain MRI. GitHub
- **Breast Ultrasound Benchmark** – EfficientNet-B0, ResNet50, SVM, XGBoost, random forest and decision tree on BUSI. GitHub
- **GI Endoscopy and Colon Image Classification** – EfficientNet-B0 and ResNet50 on Kvasir (8 classes, 0.91 accuracy) with Grad-CAM. GitHub
- **Sign-Language Letter Recognition** – ResNet-18 transfer learning on 11k images (about 95% validation accuracy). GitHub
- **ECG Image Classification** – DenseNet121 transfer learning on 2,000 ECG images. GitHub
- **HAR70+ Activity Recognition** – Transformer encoder on windowed accelerometer data. GitHub
- **Mobile-Money Fraud Detection** – Random Forest with SMOTE on highly imbalanced transactions. GitHub
- **Nigeria Inflation Forecasting** – hybrid SARIMA + LSTM time-series forecasting. GitHub

EDUCATION

B.Sc. Computer Science | Landmark University 2021 – 2025

CERTIFICATIONS

- Anthropic – Claude 101 (April 2026)
- Anthropic – Building with the Claude API
- Anthropic – AI Fluency: Framework & Foundations
- Anthropic – Introduction to Agent Skills
- AWS Educate – Machine Learning Foundations
- Data Science Certificate – AfriHUB ICT Institute

TECHNICAL SKILLS

Languages: Python, SQL, JavaScript, C#, C++

Machine Learning: PyTorch, TensorFlow/Keras, scikit-learn, Transformers (ViT, DINOv2, MedCLIP), TabNet, CNN transfer learning, Grad-CAM, model evaluation

LLM & RAG: LangChain, DSPy, FAISS, ChromaDB, pgvector, Anthropic / OpenAI / Gemini APIs, LLM evaluation, tool-calling agents, MCP

Backend & Deployment: FastAPI, PostgreSQL, SQLAlchemy, Alembic, Redis, Docker, GitHub Actions, Supabase, pytest

Data Engineering: Pandas, NumPy, Selenium, BeautifulSoup, OCR / PDF parsing, Excel reporting (openpyxl), data cleaning, EDA, web scraping, automation

SOFT SKILLS

Analytical thinking; clear technical documentation; collaboration across technical and non-technical teams; attention to detail; self-directed learning