ABRAHAM AJIBADE

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PROFESSIONAL SUMMARY

Results-driven Artificial Intelligence and Machine Learning Engineer with 5+ years' experience driving the design and deployment of end-to-end AI and ML solutions. Expertise spans Generative AI, Deep Learning, and Classical Machine Learning applications, utilizing core frameworks like PyTorch, LangChain/LangGraph and Scikit-learn/XGBoost. Proven success in bridging the gap between development and production by implementing robust MLOps pipelines, integrating deployment tools like Terraform, Docker, and CI/CD across leading cloud environments like AWS, Azure, and GCP. Strong collaborator who communicates complex solutions clearly, aligns stakeholders/non-technical audiences, and drives initiatives with agility and precision.

TECHNICAL SKILLS AND TOOLS

Machine Learning and Artificial Intelligence

- **ML Frameworks & Libraries**: PyTorch, Scikit-Learn, PySpark MLlib, XGBoost, LangChain, Hugging Face Transformers, LangGraph, Vector Databases, Pydantic AI, ONNX, CLIP, BLIP, NeMO
- **MLOps & Production Deployment**: Docker, Terraform, Git, CI/CD (GitHub Actions, Azure Pipelines), Model Serving (Triton Inference Server, AWS SageMaker, Azure ML), Monitoring (Arize), Tracking (Mlflow)
- **ML/AI Domains**: Supervised/Unsupervised Learning, Deep Learning, NLP, Computer Vision, LLMs, RAG, Text-to-Speech, Speech-to-Text, Hyperparameter Tuning,

Programming & Data Engineering

- **Languages**: Python, SQL, Bash
- **Big Data Tools**: ETL/ELT, Spark, Databricks, AWS EMR/Glue, Airflow, Epic Systems
- **Backend**: FastAPI, Pydantic, SQLAlchemy, SQLModel, OAuth

Cloud & Infrastructure

- **Platforms**: AWS, Azure, GCP
- **Infrastructure as Code**: Terraform, Ansible

Standard Practices

- **Code Quality**: pytest, unittest, pre-commit (ruff, sqlfluff), devcontainers
- **Version Control**: Git, GitHub, BitBucket, Azure DevOps

WORK EXPERIENCE

Machine Learning Engineer December 2024-Present

Northwestern Medicine | Chicago, Illinois (Hybrid)

- Architected and led the end-to-end deployment of a high-throughput incident classification system (3,500+ daily reports), containerizing a fine-tuned Mixtral 7x8B model via Triton Inference Server on Azure VMSS, eliminating over 90% of the manual review workload.
- Established a department-wide model deployment framework using ONNX + Triton, resolving cross-backend compatibility for 4+ model families, which reduced deployment time by 25% and unified inference performance.
- Spearheaded the DevSecOps transformation within Azure DevOps, integrating security to automate code and secret auditing, resulting in the remediation of 150+ critical vulnerabilities pre-production.
- Engineered the scalable data orchestration layer on Databricks (PySpark/SQL), automating secure ingestion and HIPAA-compliant storage of patient data, thus enabling real-time model feedback loops and auditability.
- Productionized a medical document summarization microservice, leveraging LLMs and Pydantic AI for automated validation and PII redaction to convert complex reports into 6th-grade readability for clinical staff.
- Collaborated with a team of data scientists to optimize feature engineering pipelines, implementing parallel PySpark workflows that slashed feature generation latency by 92% and directly enabled faster model training and real-time inference.
- Authored and implemented the "Shift-Left" quality strategy across the team, configuring Devcontainers and pre-commit hooks to mandate local execution of tools (ruff, pytest, sqlfluff) prior to commit, which reduced failed remote CI/CD runs by over 40% and minimized unnecessary build runs and charges.
- Authored and implemented architecture design standards for scalable ML systems, driving the adoption of Terraform and standardized MLOps patterns across Azure AKS and Container Apps to improve deployment velocity and governance.

Data Scientist May 2023-November 2024

Blue Lambda Technologies | Atlanta, Georgia (Hybrid)

- Architected and scaled end-to-end ML systems across three distinct domains (real estate, retail, finance), delivering PyTorch, XGBoost, and Scikit-Learn models to production with 95%+ uptime via AWS SageMaker for scalable batch inference and automated retraining.
- Collaborated on the development and deployment of an internal RAG platform using LangChain and Qdrant Vector Database with Gemma 3.4B, resolving up to 7,000 weekly employee queries and reducing support ticket volume by 42% with 88% first-pass accuracy.

- Owned the data engineering backbone for 15+ concurrent models; built and maintained robust ETL pipelines using PySpark on Databricks/AWS EMR, strictly enforcing data lineage and quality gates to ensure production-grade, validated datasets.
- Instituted proactive MLOps monitoring using Arize/MLflow (or your specific tool) to detect data and concept drift; integrated auto-alerts and rollback protocols, successfully sustaining <5% metrics degradation across models over 18-month lifecycles.
- Championed and enforced engineering standards by establishing reproducible ML environments using Docker and Docker-Compose configurations via Devcontainers.
- Instituted static analysis, secret scanning, and automated linting in CI/CD workflows, reducing technical debt by 60% in training and deployment pipelines.
- Designed and implemented scalable feature engineering workflows for structured and unstructured data, which improved model generalization across the three distinct business domains.
- Authored living documentation standards for data flows, model cards, and inference APIs, adopted as team-wide templates to accelerate cross-team collaboration and streamline compliance audits.

Freelance Data Science Consultant January 2019-November 2020
Upwork, Fiverr | Victoria Island, Lagos, Nigeria (Remote)

- Delivered custom ML solutions (Scikit-learn, XGBoost) for classification and regression across diverse client portfolios, achieving 15% average R^2 uplift and 22% precision gain by directly aligning model metrics to business-critical KPIs.
- Architected a real-time incremental data ingestion system using PySpark on AWS EMR, processing 1.5M+ rows per run with sub-minute latency, reducing data-to-model latency by 87% and enabling live predictive scoring.
- Engineered production-grade feature pipelines, incorporating automated hyperparameter optimization and SHAP-based explainability to enable non-technical stakeholders to interpret key model drivers via interactive dashboards.
- Refactored legacy code (Jupyter notebooks) into modular, PEP8-compliant packages; instituted comprehensive pytest/unittest suites (unit/integration/E2E), achieving 99% test coverage and guaranteeing audit-ready client handoffs.
- Automated and scaled preprocessing workflows across multi-terabyte datasets, implementing schema validation, drift detection, and fault-tolerant retries to ensure always-ready data delivery with zero manual intervention.
- Drove model governance and transparency by integrating SHAP values and model cards directly into production APIs, empowering clients to trust and act on predictions with verifiable confidence.

RECENT PROJECTS

Human Resources Policy RAG Chatbot

- Architected and deployed a specialized RAG (Retrieval-Augmented Generation) chatbot, using FastAPI and Qdrant to provide context-grounded answers on human resources policy-related questions within the organization. The entire system was engineered for data privacy by ensuring local language model integration and storing proprietary documentation exclusively within a self-hosted Vector Database, eliminating reliance on external APIs.

Healthcare Data Mart & ML Analytics Pipeline

- Architected a fault-tolerant, HIPAA-compliant healthcare data mart in Databricks, reliably ingesting 30K records per batch from on-prem sources with a <2% failure rate. Automated infrastructure provisioning (Databricks Asset Bundles) via Terraform and Azure DevOps CI/CD, resulting in a 95% reduction in manual data retries and powering downstream compliant ML analytics.

Law Firm Case Management System – AI-Powered Digitization & Search

- Collaborated on the AI digitization of a 22-year legal archive (100K+ documents), implementing an advanced RAG system leveraging OCR, LegalBert embeddings, FAISS, and Llama. The solution achieved 98% extraction accuracy, facilitated 70% faster case lookups, and automated 80% of scheduling from email, significantly transforming firm-wide efficiency.

EDUCATION

Master of Science in Agricultural Economics **2021-2023**
University of Kentucky | Lexington, Kentucky

Bachelor of Science in Agricultural Economics **2012-2017**
University of Benin | Benin-City, Nigeria