Richard Olamide Olanite

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Profile

Machine learning engineer with a mechanical engineering background. I build and deploy models for anomaly detection, forecasting and decisions under uncertainty, from raw sensor and time-series data to tested APIs, validated against honest baselines on held-out data. These methods carry over directly to fraud, risk, operations and industrial analytics. Open to remote roles.

Experience

Machine Learning Engineer & Founder, Berm Engineering & Consulting Ltd Jan 2026 – present

- Delivered machine-learning projects for business and individual clients, covering inspection, defect detection and predictive maintenance.
- Lead in-house R&D in anomaly detection, remaining-life prediction and computer vision.

Machine Learning Engineer, Digital Fortress Institute Feb 2025 – Apr 2026

- Built an interactive Streamlit application covering the full machine-learning workflow, from data upload to live prediction, for machine-failure data.
- Applied supervised, unsupervised and reinforcement learning to predictive maintenance and process control, and taught ML tutorials to junior team members.

Selected Projects

Time-to-failure prediction from censored data code

- Predicted remaining useful life when only 5 of 50 training units were observed failing, by modelling the degradation process instead of biased labels: 58% lower error than gradient boosting (RMSE 15.5 s vs 36.4 s on the official test set).
- Turned calibrated predictions into replace-or-wait decisions, cutting simulated cost by 43% versus the historical policy, with 2 failures instead of 5.

Anomaly detection and root-cause analysis on multivariate time series code

- Modelled 10 sensor channels on a 5-million-point benchmark, trained on normal data only. Caught 80% of 146 unseen anomalies at 0.09 false alarms per day (event F1 0.88 vs 0.69 for PCA).
- Named the correct root-cause sensor for 98% of detected anomalies.

BeamTwin: physics-informed surrogate model and Bayesian inference API code · live demo

- Hybrid physics–neural surrogate with 55× lower error than a plain network and 2,700× faster than the simulator, plus Bayesian damage localisation with credible ranges.
- Deployed with FastAPI, Docker, pytest and GitHub Actions CI, with a public web demo.

Battery lifetime prediction with calibrated uncertainty code

- Predicted lithium-ion cell lifetime from the first 100 cycles; 90% jackknife+ intervals held on test cells (39 of 43) and on a batch made a year later (35 of 40).
- Stopping rule from the intervals: 53 of 83 tests ended at cycle 100 with one wrong call (58% of test cycles saved), versus four from point predictions.

Skills

- **Machine learning:** supervised and unsupervised learning, anomaly detection, time-series forecasting, survival analysis, Bayesian inference, deep learning (CNNs, U-Net), surrogate modelling, system identification, Kalman filtering, finite element analysis.
- **Tools:** Python (NumPy, pandas, SciPy, scikit-learn, XGBoost, PyTorch, TensorFlow), SQL, Git, Docker, FastAPI, pytest, GitHub Actions, Streamlit, MATLAB.

Education & Certifications

B.Eng. Mechanical Engineering, University of Ilorin, Nigeria Oct 2018 – Aug 2024

- CGPA 4.09/5.00, Second Class Honours (Upper Division).
- **Certifications (2025):** Advanced Computer Vision with TensorFlow (DeepLearning.AI); Machine Learning with Python (IBM); SQL for Data Science (UC Davis); Building Intelligent Troubleshooting Agents (Microsoft); NLP in Engineering (Northeastern); AI for Mechanical Engineers (Michigan).