FREDA ERINMWINGBOVO

Data Scientist | AI Trainer | ML Engineer

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PROFESSIONAL SUMMARY

Detail-oriented Data Scientist with a strong quantitative foundation in Electrical and Electronics Engineering and seven end-to-end portfolio projects covering the full data science pipeline, from data ingestion, cleaning, and feature engineering through to model training, evaluation, and production deployment, analysing over 2 million records across healthcare, retail, banking, HR, supply chain, and SaaS product analytics domains. Proficient in Python (pandas, numpy, scipy, scikit-learn, statsmodels, matplotlib, seaborn), SQL, R, and Power BI. Experienced in statistical analysis, predictive modelling, MLOps practices, and model deployment via REST APIs and interactive applications. Active user of GenAI technologies including Claude and ChatGPT with applied prompt engineering experience. Pursuing Google Data Analytics, Google Advanced Data Analytics, NIIT Certificate in Data Analytics, Andrew Ng's Machine Learning and Deep Learning Specializations, and the Microsoft DP-100 Azure Data Scientist Associate certification, with a long-term goal of specialising in AI/ML engineering. English proficiency: C1 Advanced. Immediately available globally for remote roles.

CORE COMPETENCIES

Python	pandas, numpy, scipy, scikit-learn, statsmodels, matplotlib, seaborn
R Programming	tidyverse, ggplot2, tidymodels, Quarto
SQL	joins, aggregations, subqueries, window functions, SQLite, MySQL
Machine Learning	Random Forest, Decision Tree, SVM, XGBoost, Logistic Regression, K-Means
Statistical Analysis	feature engineering, class imbalance (SMOTE), cross-validation, hyperparameter tuning
Model Deployment	Vetiver REST API, Shiny interactive app, MLOps pipeline practices
GenAI & Prompt Eng.	Claude, ChatGPT, prompt engineering, AI-assisted analytical workflows
Power BI	DAX, data modelling, interactive dashboards, executive reporting
Advanced Excel	pivot tables, Power Query, dynamic charts, colour-coded dashboards
Tools & Platforms	RStudio, Jupyter Notebook, GitHub, SQLite, MySQL Workbench, Microsoft Office Suite
Communication	Quarto HTML reports, executive storytelling, structured analytical thinking

PORTFOLIO PROJECTS

Stroke Prediction and Risk Modelling

Healthcare Organisation | R | ML | Clinical Analytics | Quarto | 5,109 records
- Built end-to-end clinical stroke prediction model using R and tidymodels, applying SMOTE to address severe 95/5 class imbalance, a real-world data challenge requiring specialist handling beyond standard accuracy metrics.
- Trained and tuned five classification models (Logistic Regression, Decision Tree, Random Forest, SVM, XGBoost) using 5-fold cross-validation and grid search hyperparameter tuning across the full data science pipeline.

- Selected Logistic Regression as the deployment model based on highest ROC-AUC of 0.847 with clinically balanced sensitivity (0.737) and specificity (0.739), demonstrating business-context decision-making over raw metric optimisation.
- Deployed the validated model following MLOps best practices as a Vetiver REST API endpoint and interactive Shiny clinical decision tool, enabling real-time stroke risk prediction from patient characteristics, end-to-end pipeline execution from raw data to production deployment.

Business Intelligence and Revenue Optimisation

NovaMart Global | Python | ML | Quarto | 524,878 records
- Built a six-theme BI system across 524,878 transactions from a UK-based retailer operating in 38 countries, covering segmentation, churn prediction, cross-sell recommendations, demand forecasting, inventory replenishment, and price optimisation.
- Applied RFM segmentation via K-Means clustering (k=4), revealing that 717 Champion customers (16.5% of base) drive 65% of total revenue, identifying critical concentration risk with direct business impact.
- Constructed churn prediction models (Logistic Regression, Random Forest, Decision Tree) using engineered behavioural features with class imbalance handling, achieving ROC-AUC of 76.39%.
- Generated 194 cross-sell association rules via Apriori algorithm with lift values up to 27.2, and produced Holt-Winters demand forecasts with actionable pricing and inventory recommendations.

Retail Card Portfolio: Fraud Intelligence and Transaction Risk

NorthBridge Bank | SQL | Python | Quarto | 1,296,675 records
- Designed and executed a seven-theme fraud intelligence investigation across 1,296,675 credit card transactions spanning 18 months of retail card portfolio data.
- Built a full data pipeline in Python, cleaning, feature engineering, and constructing an in-memory SQLite database, then conducted all analysis exclusively in SQL across seven structured business questions, ensuring auditability to institutional banking standards.
- Delivered demographic, geographic, temporal, and amount-based fraud risk profiles with actionable monitoring rule recommendations in a Quarto HTML report styled to institutional banking standards.

People Analytics: Employee Attrition Intelligence

Meridian Group | Power BI | Python | Quarto | 1,470 records
- Delivered a seven-theme people analytics investigation identifying root causes of a 16.1% attrition rate, with overtime identified as the single strongest predictor at three times the rate of non-overtime workers (31% vs 10%).
- Built a five-page interactive Power BI dashboard covering executive overview, department and role analysis, compensation profiling, satisfaction scoring, and demographic breakdown.
- Compensation analysis revealed leavers earn significantly less on average; the Under $3K income band carries the highest attrition rate, providing three urgent executive action recommendations with measurable business impact.

Supply Chain Analytics: Operations Intelligence and Risk

DataCo Global | Excel | Python | Quarto | 180,519 orders
- Conducted a seven-theme supply chain investigation across 180,519 global orders covering five markets, identifying a 57.3% late delivery rate as the single most critical operational risk with measurable correlation to profit per order.
- Built a professional eight-sheet Excel workbook with formatted analysis tabs, summary tables, and a colour-coded executive dashboard, plus a Quarto HTML companion report with seven tabbed analysis sections and matplotlib visualisations.

Customer Purchasing Behaviour and Demographics

Blackwell Electronics | R | ML | Quarto | 80,000 records
- Performed end-to-end customer analytics on 80,000+ transaction records using R, covering data preprocessing, feature engineering, and cross-validated predictive modelling.

- Developed and evaluated three ML models (Random Forest, Decision Tree, SVM) to predict purchase channel, age bracket, and region, achieving 93.2% accuracy on purchase channel prediction.
- Uncovered significant regional spending variations across North America, Europe, and Asia, with actionable inventory allocation and targeted marketing recommendations.

Trial Activation Intelligence

Splendor Analytics | Python | SQL | Quarto | 966 organisations | 170,526 events
- Conducted a rigorous end-to-end investigation into trial activation for a SaaS workforce management platform, analysing 966 trialling organisations across 28 behavioural activities to define what a good trial looks like.
- Applied four independent analytical methods — chi-square tests, Mann-Whitney U tests, Logistic Regression, and Random Forest — confirming that no single activity significantly predicts conversion, an honest and strategically important finding for the product team.
- Defined three evidence-informed trial goals grounded in product-value logic, achieving a 1.13x conversion lift for fully activated organisations (23.4% vs 20.7%), with a 24.3% activation rate across the trial cohort.
- Built two production-ready SQL mart tables (trial_goals and trial_activation) following data warehouse conventions with a staging layer, enabling real-time activation tracking at scale for the product team.

PROFESSIONAL EXPERIENCE

Investigation, Inspection and Maintenance Officer

Ibadan Electricity Distribution Company (IBEDC) Aug 2019 – Mar 2022
- Conducted field investigations and physical inspections of electricity meters to identify energy theft, tampering, and billing anomalies; building systematic, evidence-based analytical thinking directly transferable to data science.
- Authored detailed investigation reports with evidence, findings, and corrective recommendations, supporting revenue protection and demonstrating structured written communication at professional standards.
- Maintained precise field documentation and applied analytical prioritisation to escalate high-risk cases, demonstrating independent structured problem-solving and attention to detail.

Investigation and Inspection Officer (NYSC)

Jos Electricity Distribution Company (JEDC) 2017 – 2018
- Performed meter inspections and energy theft investigations throughout the Jos distribution network, producing structured reports and supporting loss reduction through accurate, timely documentation.

EDUCATION

Bachelor of Engineering (B.Eng) | Electrical and Electronics Engineering

Ambrose Alli University, Ekpoma, Edo State, Nigeria | Graduated 2016
Strong quantitative foundation in systems thinking, signal analysis, and structured problem-solving, directly transferable to machine learning, statistical modelling, and data engineering.

CERTIFICATIONS & PROFESSIONAL DEVELOPMENT

In Progress	Google Data Analytics Certificate	Google · Coursera	2026
Planned	Google Advanced Data Analytics Certificate	Google · Coursera	2026
Awaiting Exam	Certificate in Data Analytics	NIIT, Abuja	H1 2026

Planned	Machine Learning Specialization	Andrew Ng · DeepLearning.AI	2026
Planned	Deep Learning Specialization	Andrew Ng · DeepLearning.AI	2026
Planned	Microsoft DP-100 Azure Data Scientist Associate	Microsoft	2026

ADDITIONAL INFORMATION

- **Availability:** Immediately available for remote freelance and full-time roles worldwide.
- **Portfolio:** All seven projects published and publicly accessible at *__freda-erinmwingbovo.github.io__*, fully reproducible with documented methodology, code, and executive recommendations.
- **English Proficiency:** C1 Advanced, demonstrated through professional-grade written reports, structured analytical documentation, and stakeholder-ready communication across all seven projects.
- **GenAI Integration:** Active daily user of Claude and ChatGPT in analytical workflows; experienced in prompt engineering for data science tasks, evaluation, and output refinement, directly relevant to AI training roles.
- Engineering Foundation: B.Eng in Electrical and Electronics Engineering provides strong quantitative skills in systems thinking, signal analysis, and structured problem-solving, directly transferable to machine learning and AI model development.