

Esther Mukite Kituyi

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LinkedIn — GitHub — Portfolio

Professional Summary

Electrical Engineer and Data Scientist specializing in predictive risk modeling and credit scoring. Expert at leveraging machine learning (XGBoost) and feature engineering to solve complex financial problems, including default prediction and loan eligibility optimization. Skilled in Python, SQL, and building robust data pipelines to drive data-informed decision-making.

Technical Skills

- **Engineering:** Power Systems, Smart Grid Technology, Electrical Design, IoT Systems.
- **Data Intelligence:** Python (NumPy, Pandas, Scikit-Learn, XGBoost), SQL, Predictive Risk Modeling.
- **Database & Pipelines:** PostgreSQL, Medallion Architecture Logic, Data Cleaning, Validation.
- **Development Tools:** Google Colab, VS Code, Git, Microsoft Excel (Expert).
- **Visualization:** Power BI, Tableau, Matplotlib, Seaborn.

Experience

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| Ngao Labs
<i>Data Science Trainee</i> | Feb 2026 – Present
Nairobi, Kenya |
| <ul style="list-style-type: none">• Developing end-to-end machine learning solutions for financial risk assessment and expenditure prediction.• Implementing ensemble methods (XGBoost) and advanced feature engineering to optimize model performance.• Collaborating on automated data pipelines for large-scale financial and tourism datasets. | |
| Women Techsters Fellowship (Tech4Dev)
<i>Data Science & Engineering Fellow</i> | Sep 2024 – Present
Remote |
| <ul style="list-style-type: none">• Engineered a Smart Grid Anomaly Detection system using Python to identify technical faults and energy theft.• Implemented Medallion Architecture to streamline data pipelines from raw ingestion to executive-level visualization.• Analyzed consumption patterns to optimize load balancing and improve grid reliability. | |
| CCI Kenya (AT&T Campaign)
<i>Technical Support Specialist</i> | Jul 2024 – Dec 2025
Nairobi, Kenya |
| <ul style="list-style-type: none">• Interpreted technical system data and error logs to provide actionable solutions for global infrastructure clients.• Identified recurring system patterns, reducing average resolution time for technical troubleshooting. | |
| Centre for Transport and Road Engineering (CeTRE)
<i>R&D Intern</i> | Feb 2023 – May 2023
Nyeri, Kenya |
| <ul style="list-style-type: none">• Assisted in data collection for e-mobility research to support green energy transition initiatives. | |

Education

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| Dedan Kimathi University of Technology (DeKUT)
Bachelor of Science in Electrical and Electronics Engineering | 2019 – 2024
Nyeri, Kenya |
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Selected Projects

Loan Default Prediction Model (SuperLender Challenge)

Built a credit scoring model to assess customer creditworthiness. Engineered "Interest Ratio" and "Loan History" features to predict default risk, achieving a top-tier leaderboard ranking on Zindi.

Financial Inclusion Prediction

Developed a machine learning model to predict bank account ownership across demographic segments. Optimized features to identify key drivers of financial eligibility and customer behavior.

Tanzania Tourism Expenditure Prediction (Rank #1)

Created an ensemble XGBoost model to predict visitor spending. Reached Rank #1 on Zindi by developing complex interaction features and custom "Luxury Segment" indicators.

IoT Smart Metering System

Designed a GSM-enabled prototype for real-time utility monitoring, focusing on data collection for energy optimization.