

# MARTIN LENGA MWAPAHÉ

Data & Machine Learning Graduate | Python | Predictive Analytics

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## PROFESSIONAL SUMMARY

BSc Informatics and Computer Science graduate (Strathmore University) with hands-on experience in predictive analytics and data-driven systems. Built a final-year machine learning solution for early student dropout risk detection, covering end-to-end data preparation, feature engineering, model benchmarking (Random Forest and alternatives), and rigorous evaluation using precision, recall, F1-score, ROC-AUC, and confusion-matrix analysis. Strong in Python (Pandas, NumPy, Matplotlib, Seaborn), scikit-learn, SQL, and Git-based collaboration; able to communicate findings clearly and support data-informed decisions. Seeking Data/ML Graduate roles to develop reliable models and deliver actionable insights.

## EDUCATION

- Strathmore University, Nairobi — BSc Informatics and Computer Science (Hons)  
2022–2026 | Completed (awaiting graduation)
- Alliance High School — KCSE: A- (79 points out of 84)  
2018–2021 | Leadership: School Games Captain; Under Secretary, Social Welfare Society Club

## PROFESSIONAL EXPERIENCE

**Mwalimu National SACCO — IT Attachment (Networking & Systems Support)**

Nairobi, Kenya | February 2025 – April 2025

- Assisted with network configuration, monitoring, and troubleshooting within an enterprise financial institution environment.
- Supported LAN/WAN connectivity, router/switch configuration support, and network diagnostics.
- Worked within secure and regulated IT processes, maintaining professionalism and adherence to internal controls.

## PROJECTS

1) **Early Student Dropout Detection & Support System (Final Year Project - BakiDarasani)** — Machine Learning

- Built an end-to-end classification pipeline to identify students at risk of dropout, including data cleaning, missing-value handling, encoding, and feature engineering.
- Benchmarked multiple algorithms and selected a Random Forest model; validated using train/test split and k-fold cross-validation with hyperparameter tuning.
- Measured performance using precision, recall, F1-score, ROC-AUC, and confusion-matrix analysis to reduce false negatives for at-risk students.
- Integrated a student-facing chatbot and proposed targeted intervention strategies; used feature importance to explain key risk drivers and support data-informed follow-up.

**Repository:** [github.com/is-project-4th-year/BakiDarasani\\_Project](https://github.com/is-project-4th-year/BakiDarasani_Project)

**Tech:** Python (Pandas, NumPy, Matplotlib, Seaborn), scikit-learn, Jupyter; Git/GitHub

2) **Online Bus Booking System** — Django / PostgreSQL

- Built a web-based platform to facilitate bus ticket booking and management using Django and PostgreSQL.
- Integrated notifications for bookings, seat confirmations, and customer updates; implemented a user feedback mechanism.
- Integrated M-Pesa (Daraja) API payments to support mobile money checkout and transaction confirmation.

**Repository:** [github.com/Martinlenga/online\\_bus\\_booking\\_system](https://github.com/Martinlenga/online_bus_booking_system)

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## TECHNICAL SKILLS

**Programming:** Python, Java, JavaScript

**Data & ML:** Pandas, NumPy; scikit-learn; exploratory data analysis (EDA); data cleaning and preprocessing; feature engineering; train/test split; k-fold cross-validation; hyperparameter tuning; model evaluation (precision, recall, F1-score, ROC-AUC); model interpretability (feature importance); visualization (Matplotlib, Seaborn); statistics fundamentals (descriptive stats, basic hypothesis testing)

**Databases:** PostgreSQL, MySQL, MongoDB, Oracle (foundational)

**Web/API (supporting):** Django, REST APIs, HTML5, CSS3, M-Pesa (Daraja) API

**Tools:** Jupyter Notebook, Git/GitHub, Linux; API integration (including M-Pesa Daraja); Figma, Balsamiq

**Core CS (coursework):** Data Structures & Algorithms; Object-Oriented Programming

**Networking (secondary):** Cisco Networking (intermediate); network monitoring & diagnostics

**Security (secondary):** CEH course completed (pending certification)

**Spoken Languages:** English (Fluent); Kiswahili (Fluent); French (Basic)

## CERTIFICATIONS & TRAINING

- Microsoft Learn badges in Machine Learning.
- Cisco Networking Certificate (Intermediate).
- Certified Ethical Hacking (CEH) course completed at Strathmore University iLabAfrica Centre (pending certification).
- Udemy Online Courses: Data Analysis with Pandas and Python; Python Certification; Django with React; Complete JavaScript Course.

## LEADERSHIP & SERVICE

- Service-Based Learning — Little Sisters of the Poor (Jan–Apr 2024): Completed 225 volunteer hours supporting elderly care routines.
- Community Involvement: Participated in Mater Heart runs and Standard Chartered Marathons.

## EXTRA-CURRICULAR ACTIVITIES

- Sports & Fitness: Football; marathon participation; hiking and archery.

## INTERESTS

Applied machine learning; predictive analytics; data cleaning and modelling; building data-driven systems and web applications.

## REFERENCES

Available upon request.