

# MARTIN KOOME

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## PROFILE

An Industrious Master's student in Engineering Artificial Intelligence at Carnegie Mellon University Africa, specializing in Probabilistic Graphical Models, Machine Learning, and Deep Learning. I build and deploy AI systems, develop cloud-ready applications with Docker, and automate workflows with tools like n8n to improve operational efficiency. I led Campus Link, currently incubated at the Industry Innovation Lab, which focuses on streamlining student services at CMU Africa, and contributed to a STEM student dropout study in Kenya that produced actionable, data-driven insights. I am passionate about creating scalable AI solutions that solve real-world problems and deliver organizational and societal value.

## EDUCATION

### Masters of Science in Engineering AI

August 2025 - May 2027

Carnegie Mellon University, Africa

Concentration: Probabilistic Graphical Models and Applied Machine Learning.

Achievement: Community Spirit Award for outstanding collaboration and leadership during induction.

### Bsc Mathematics and Computer Science (Statistics Major)

September 2021 - May 2025

Multimedia University of Kenya, Nairobi, Kenya

Coursework: Measure and Probability, Operations Research, Time Series Analysis, Stochastic Processes, Survival Analysis.

Project: Survival Analysis of Student Dropout in STEM.

Degree Award: Graduated with First Class Honors.

## EXPERIENCE

### Technical Researcher

September 2024 - August 2025

GoJumpStart, Nairobi, Kenya

- Designed and tested business automation workflows using n8n, aligning solutions to client requirements and improving operational efficiency.
- Configured and optimized server environments, including website hosting with NPM and Portainer, resulting in stable uptime and streamlined resource allocation.
- Developed a Minimum Viable Product for a gym automation system using ERPNext and Frappe, showcasing practical application of ERP systems for small businesses.

### Data Science Co-Lead

September 2022 - May 2025

MMU Tech Community, Nairobi

- Coordinated a student data science track of 50+ students, mentoring beginners and providing technical training to improve members' ability to apply core concepts in practice.
- Increased community engagement by 20% through outreach campaigns, targeted events and effective communication strategies.
- Authored clear technical documentation and support resources, enabling peers to troubleshoot and learn independently during weekly sessions.

## PROJECTS

### Survival Analysis of Student Dropout in STEM | Multimedia University of Kenya

August 2024 - May 2025

- Spearheaded a research project analyzing longitudinal higher-education data to model dropout risks among STEM students in Multimedia university of Kenya while addressing policy-relevant education challenges.
- Collected and processed multi-year student records including GPA progression, demographics, and institutional variables, building a dataset of over 400 students.
- Applied Kaplan-Meier estimation, Cox Proportional Hazards modeling, and multivariate analysis to identify significant dropout predictors.

- Presented actionable recommendations to the university management, highlighting interventions that could reduce dropout rates by an estimated 15-20%.
- Utilized two major tools, Python (lifelines, pandas, scikit-learn) and R (survival package).

#### Campus Link | Industry Innovation Lab, CMU Africa

October 2025 - Present

- Led the development of Campus Link, a student-centered platform designed to streamline access to academic and administrative services at CMU Africa.
- Conducted user needs assessments through interviews with students and administrative staff to identify service access bottlenecks.
- Designed and implemented retrieval-augmented generation pipelines using LightRAG, evaluating and selecting language models best suited to the platform's use case.
- Currently working as a student success administration support by aligning the product functionality with both student needs and institutional workflows among other duties that ensure student success.
- Utilized tools such as Python (PyTorch, Transformers), TypeScript, Hugging Face, Git, light RAG and Docker.

#### SKILLS

- **Communication:** Strong written and verbal communication skills, honed through previous leadership and volunteer roles.
- **Technical:** Advanced skills in Python, Machine Learning, n8n automations, ERP Next integrations and intermediate skills in Docker and Cloud Operations.
- **Leadership & Teamwork:** Managed to lead projects, organize tasks and maintain clear communication that strengthen team performance.
- **Languages:** Fluent in both English and Swahili.

#### INTERESTS & ACHIEVEMENTS

- **Data Science Challenges:** Ranked as the top 7th Kenyan on Zindi, the largest platform of data scientists and AI builders.
- **Mentorship:** Volunteered as data science co-lead for more than two years to mentor and provide training to fellow students, and was elected as a delegate in the final year.
- **Leadership:** Served as a EY AI & Data Challenge Ambassador to promote competitions and engage in exclusive mentoring and career development sessions.

#### REFEREE

**Name:** Uzordinma Nwokeaka.

**Profession:** Machine Learning Engineer at ZeroTen Technologies.

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