

Shawal Mbalire

ITU GCYE, Intern IoT-ra, Electrical Engineering Junior
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Summary

Aspiring electrical engineer passionate about automation, IoT, and software engineering. Hands-on experience with Python development, embedded systems, and web development. Proven leadership in organizing technical events and driving innovative projects.

Experience

Africa Developer Group

Backend Developer

Dec 2024 – Jan 2025

- Developing and demoing system architecture for a compliant cloud using docker compose and google cloud

International Telecommunication Union

Generation Connect Youth Envoy

May 2024 – Present

- Engaging youth in technology initiatives and promoting innovation through advocacy and events.
- Collaborating with international teams to organize seminars and global youth dialogues.

IoT-ra (Internet of Things - Research & Applications) Lab

Embedded System Intern

March 2024 – Present

- Developing IoT-based cloud solutions for agricultural automation.
- Designing low-cost systems to monitor environmental factors using sensors.
- Writing Python scripts for sensor data collection and analysis.
- Contributed to the bee hive project, focusing on sensor integration and data analysis.

netLabs!UG

Engineering Intern, E-waste Recycling Project

February 2023 – Present

- Refurbishing e-waste to build functional computers for underprivileged communities.
- Conducting hardware diagnostics and installing dual-boot systems (Windows 11, Ubuntu 22).
- Building automated scripts for system diagnostics and repair.
- Tutored students in computer repair and operating system installations.

Green Hub East Africa Ltd

Engineering, Software Development, Data Analysis Intern

Jan 2024 – Sep 2024

- Developed Python scripts for data analysis and database creation.
- Contributed to automation solutions for e-mobility and battery swapping systems.
- Created web pages to support internal projects and streamline internal workflows.

Makerere AI Lab

Communication and Participation Lead

Feb 2024 – May 2024

- Led hackathon communication, coordinating student participation across universities.
- Built the event website and managed online engagement.
- Automated participant data collection and feedback analysis using Python.

The Marconi Research and Innovations Laboratory

Undergraduate Researcher

Feb 2024 – Aug 2024

- Trained a natural voice language model on a Runyankore dataset.
- Focused on dataset preparation, model training, and performance evaluation.

Dojo Hub (SMC) Ltd

Internship Coordinator

Jun 2023 – Aug 2023

- Managed intern schedules, organized training spaces, and ensured program logistics.
- Monitored intern progress and facilitated hardware/software learning.
- Created Python-based tools to automate attendance tracking and session evaluations.

Education

Makerere University

Bachelor of Engineering, Electrical and Electronics Engineering

2022 – 2026

Mengo Senior School

UACE, Physics, Chemistry, Mathematics

2019 – 2021

UCE, General

2015 – 2018

Nabweru Parents Primary School

PLE

2010 – 2014

Skills and Certifications

Top Skills: Python Development, Web Development, Computer Repair, PostgreSQL, Automation**Certifications:** Machine Learning with Python, ChatGPT API, Introduction to Cybersecurity, AI Capstone Project, IoT Development

Publications

A Low-Cost IoT Cloud-Based Solution for Intelligent Rearing of the Black Soldier Fly

- Co-authored and accepted for publication in IEEE Xplore, focusing on sustainable IoT applications.
- Developed Python code for data visualization and analysis.