

Abigael Kalunde Sila

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PROFILE

Electrical and Electronics Engineer with a strong foundation in **power systems engineering**, **embedded systems design**, and **infrastructure management**. I have hands-on experience supporting **mission-critical operations** at leading institutions like **Kenya Railways**, **Kenya Airports Authority**, and **Kenya Space Agency**, where I contributed to the reliability of **high-voltage power networks**, carried out **energy audits**, and maintained **backup systems** that ensure uninterrupted operations. My blend of **field experience** and **technical innovation** enables me to approach engineering challenges with both **operational precision** and **forward-thinking solutions**. I am driven by a commitment to **reliable infrastructure**, **sustainable energy practices**, and **technology-driven problem solving**, making me well-positioned to contribute to organizations seeking an engineer who can combine **technical depth** with **practical execution** in **fast-paced, high-stakes environments**.

EXPERIENCE

Electrical Engineering Attachee | Kenya Airports Authority

August 2025 - Present

- **Power Infrastructure Maintenance:** Conducted inspections, maintenance, and repairs of electrical systems across airport terminals, lounges, substations, primary screening areas, and runways, ensuring compliance with safety standards and minimizing downtime.
- **Fault Diagnosis and Troubleshooting:** Identified and resolved electrical issues in power distribution networks, including wiring, circuit breakers, and backup generators, contributing to uninterrupted operations in critical airport zones.
- **Energy Audits and Optimization:** Performed assessments of power consumption in substations and facilities, recommending improvements to enhance energy efficiency and reduce operational costs.

Electrical Engineering Attachee | Kenya Space Agency

August 2025

- Gained foundational knowledge of the Kenya Space Agency's in regulating Kenya's air and space domain, including satellites, rockets, and shuttles under international collaboration.
- Observed the design lifecycle for mission-critical aerospace electronics, including PCB design for embedded systems and IoT applications in satellite and rocket systems.
- Was introduced to the design principles of power systems for aerospace applications, including battery backup systems for rockets and power infrastructure for ground stations.

Electrical Engineering Attachee | Kenya Railways

May 2024 – August 2024

- **Power Infrastructure Maintenance:** Conduct routine inspections, maintenance, and repair of power lines, transformers, generators, switch gear and distribution boxes across substations and passing stations.
- **Power Line Inspection:** Perform inspections of power lines and substations to ensure integrity and safety, addressing faults and damage as needed.
- **SCADA System Operation:** Utilize SCADA systems for real-time monitoring and control of power supply, including mastering the switching sequence for transferring power between substations.
- **Fault Diagnosis and Repair:** Identify and troubleshoot electrical faults, including issues with electrical wiring, lights, sockets, fuses and circuit breakers, and perform necessary repairs.

- **Equipment Procurement:** Purchase critical ensuring proper specifications and handling.
- **Energy Auditing & Monitoring:** Conducted energy audits across substations and passing stations by recording power consumption of third-party organizations supplied through SGR Nairobi.
- Performed daily monitoring of overall power usage, ensuring accurate tracking of energy consumption trends and carried out bi-monthly generator performance assessments.
- **Administrative Support:** Assist in sorting and arranging financial documentation, and support office activities e.g. tender processes.

Freelance Electrician & Developer | Self-employed

2022 – Present

- Undertook **electrical projects** for homes, apartments, and commercial spaces, including wiring, load balancing, and installation of protective devices.
- Installed and configured **solar energy systems**, ensuring safe integration with existing electrical networks for improved energy efficiency and reliability.
- Designed and developed **websites and mobile applications** for individual clients and small businesses, covering UI/UX design and full-stack implementation.
- Managed end-to-end project lifecycles, from requirements gathering and material estimates to coding, deployment, and client support, ensuring compliance with relevant electrical and safety standards.

EDUCATION

BEng Electrical and Electronics Engineering | Moi University

January 2021 – July 2025

- Relevant Coursework:
 - Power Systems
 - Electrical Machines
 - Switchgear & Protection
 - Power Transmission & Distribution
 - Control Systems
 - Renewable Energy
 - Energy Auditing
 - Signal Processing
 - Digital & Analogue Electronics.
- Participated in engineering workshops, field trips, and technical exhibitions.
- Capstone Project: Designed and developed Symphion, an Embedded Systems & IoT prototype SOS device with GPS tracking, live audio, GSM/GPRS connectivity, and custom PCB design.
- Active member of ESA-Moi (formerly TSA), contributing to peer-led initiatives and industry networking.

Programming Certificate | Modcom Institute

January 2020 – March 2020

- Acquired skills in front-end and back-end web development, including HTML, CSS, JavaScript, and server-side technologies.
- Gained foundational knowledge in cybersecurity, with emphasis on ethical hacking principles and practices.

Kenya Certificate of Secondary Education | Asumbi Girls High School

February 2016 – November 2019

- Attained Grade: **A- (77 points)**
- Demonstrated strong aptitude in STEM by actively participating in the National Science and Innovation Congress, with a focus on projects in Physics and Computer Studies.

SKILLS

Power Systems Engineering

- **SCADA Systems:** Proficient in real-time monitoring, control, and execution of substation coupling sequences.
 - **Infrastructure Maintenance:** Experienced in maintaining transformers, switchgear, generators, and distribution networks.
 - **Fault Diagnosis & Repair:** Skilled in identifying, troubleshooting, and repairing complex electrical faults in high and low-voltage systems.
 - **Energy Auditing:** Capable of inspecting power systems, identifying inefficiencies, and recommending corrective measures to optimize energy consumption.
 - **Design Interpretation:** Adept at reading and interpreting technical drawings and schematics for 11kV/33kV power systems
 - **Renewable Energy:** Familiar with integration of solar systems and automation for sustainable power solutions.
 - **Control Systems & Automation:** Familiar with industrial control logic, signal processing, and system simulations.
 - **Backup Power Systems:** Skilled in maintenance of generators and batteries to ensure reliable standby power supply.
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Electronics & Embedded Systems

- **PCB Design:** Proficient in schematic capture and PCB layout using design software.
 - **Embedded Systems & IoT:** Skilled in programming microcontrollers and integrating sensors for IoT applications.
 - **Prototyping:** Experienced in soldering, fabricating, and testing electronic prototypes.
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Software & Design Tools

- **Programming:** Python, C/C++, JavaScript, HTML/CSS, Kotlin, React Native, React, Typescript, Tailwind CSS
 - **Engineering Software:** MATLAB, AutoCAD, EasyEDA
 - **UI/UX Design:** Figma
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Administrative skills

- **Technical Documentation & Reporting:** Proficient in managing and organizing critical engineering documents.
- **Procurement & Budget Tracking:** Experienced in managing the procurement lifecycle for technical equipment, from sourcing and specification verification to tracking expenses against project budgets.
- **Operational Support:** Skilled in providing administrative support that enhances team efficiency, including managing project paperwork and coordinating office logistics to ensure smooth project workflows.
- **Cross-Functional Collaboration:** Proven ability to work effectively within multidisciplinary teams of engineers, technicians, and project staff to achieve technical goals and resolve complex issues collectively.

Soft skills

- Leadership
- Technical Problem-Solving
- Team Collaboration & Communication
- Strategic Planning
- Adaptability under pressure
- Resource Optimization

ACHIVEMENTS

- **Capstone Project - IoT SOS Device:** Successfully designed, prototyped, and tested a functional IoT-based personal SOS device. The project involved custom PCB design, component sourcing, firmware development, and integration with a cloud platform for location tracking and alerts.
- **Power Supply Management:** Played a crucial role in maintaining a continuous and reliable power supply across national agencies
- **Electrical Fault Resolution:** Spearheaded the diagnosis and rapid resolution of critical electrical faults, effectively preventing service disruptions and ensuring operational stability.
- **Infrastructure Maintenance Leadership:** Took initiative in inspecting power infrastructure, enforcing safety protocols, and significantly enhancing the operational efficiency of substations.

ACTIVITIES

- **Engineering Field Expeditions:** Participated in multiple field trips to remote sites, including power plants, gaining knowledge on engineering works.
- **Volunteer Engineering Outreach:** Mentored high school students in STEM workshops through ESA-Moi, promoting sustainable engineering practices in underserved communities.
- **Tech Hackathons and Conferences:** Competed in hackathons and attended industry conferences, networking with professionals and presenting group innovations.
- **Environmental Advocacy:** Involved in university-led initiatives for energy conservation, including audits of campus facilities and tree planting.
- **Certifications and Languages:** Hold Meta certifications in app and front-end development. Proficient in English and Swahili, with basic proficiency in German for international collaborations.

REFEREES

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