

YEWO MKANDAWIRE

Software Engineer · Backend Developer · Network Engineering

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PROFESSIONAL SUMMARY

Results-driven final-year Computer Network Engineering student and Software Engineer specialising in backend development, REST API design, and network automation. Experienced in building scalable, impact-driven systems from secure multi-tenant election platforms to a PropTech rental management system serving Malawian universities. Adept at problem-solving across the full stack, from configuring routing protocols and database optimisation to architecting secure authentication systems. Committed to delivering technology solutions that raise standards of everyday life in Malawi and beyond.

EDUCATION

BSc Computer Network Engineering · [University of Malawi \(UNIMA\)](#) 2022 – Aug 2026 (Expected)

Relevant coursework: Network Engineering, Database Systems, Software Development, ICT Project (COM422).

CS50x – Introduction to Computer Science · [Harvard University \(Online\)](#) July 2026 (Expected)

Completed foundational computing coursework covering algorithms, data structures, and web development.

EXPERIENCE

Backend Developer · [Computing Society of UNIMA](#) 2025 – 2026

- Led backend engineering for the Generic Voting System v2 — a multi-tenant election platform designed to be rented by external organisations.
- Architected and implemented a full JWT-based authentication system, including token generation/validation middleware and secure login and logout endpoints.
- Built a cryptographically random password generation utility (7+ character passwords) used during automated user account creation, with email delivery integration.
- Developed RESTful API endpoints following role-based access control (RBAC) principles, supporting Super Admin, Organisation Admin, Electoral Committee, and Voter roles.
- Contributed to system design decisions including database transaction strategies for vote-casting integrity and audit logging for accountability.

Facilitator · [University of Malawi – Computing Department](#) 2025

- Tutored second-year students in Introduction to Computer Network Engineering, reinforcing core networking concepts and practical skills.

Online Programming Tutor · [Freelance / University of Malawi](#) 2026

- Delivered one-on-one Java programming tutorship to first-year students, supporting their transition into object-oriented programming.

Robotics Project Supervisor · [UNIMA Computing Symposium](#) 2026

- Supervised a student robotics team for a symposium challenge, providing technical guidance and ensuring successful project delivery.

PROJECTS

Rental Management System (RMS) · [Entrepreneurial Project](#) 2024 – Present

- Designed and authored the full Software Requirements Specification (SRS v1.1) for a PropTech web platform digitising the end-to-end rental lifecycle in Malawi, from property discovery to booking, payment, and occupancy confirmation.
- Architected a modular system serving four university markets (UNIMA, MUBAS, LUANAR, MZUNI) with role-based dashboards for Super Admin, Agents, Landlords, Property Managers, and Tenants.
- Designed an escrow-style payment flow via Paychangu: funds held until tenant check-in is verified by the property manager before release.

- Integrated multi-channel notifications (Resend email, Africa's Talking SMS) at every lifecycle event, plus real-time tenant–property representative chat.
- Stack: Next.js, Node.js, PostgreSQL, Redis, Prisma ORM, Supabase Storage, Mapbox, Paychangu, Africa's Talking, Resend.

Generic Voting System v2 (Multi-tenant) · *Computing Society of UNIMA*

2025

- A multi-tenant, web-based election platform enabling organisations to securely conduct elections without requiring source-code modifications.
- Designed to support multiple concurrent organisations, each with independent user pools, roles, and elections — eliminating the single-use limitation of v1.
- Key backend contributions: JWT authentication, RBAC middleware, password generation utility, and secure API endpoint design.
- Stack: JavaScript (Node.js), SQL, REST API.

HTTP Anomaly Intrusion Detection System (AA-IDS) · *UNIMA – ICT Project (COM422)*

2025 – 2026

- Co-developed a lightweight hybrid anomaly detection prototype targeting HTTP application-layer threats including SQL injection, XSS, and brute-force attacks.
- Implemented a rule-based detection engine achieving 70% accuracy on structured HTTP log datasets, with feature extraction and alert generation capabilities.
- Designed for low-overhead deployment suitable for small and medium organisations in Malawi.
- Stack: Python, structured HTTP datasets.

Nthambi · *Non-Profit Personal Initiative*

2023 – 2024

- Built a full-stack web application enabling users to donate to individuals in need, focusing on education sponsorship, medical fundraising, and community initiatives in Malawi.
- Developed a beneficiary request system for collecting and verifying beneficiary details to launch fundraising campaigns.
- Integrated with PayChangu for seamless and secure payment processing; implemented donation tracking features and donor/beneficiary profile management.
- Stack: JavaScript, Python (Flask), HTML, CSS, PostgreSQL.

Network Monitoring Tool · *Personal Project*

2026

- Developed a real-time network automation tool for monitoring remote devices, including device availability checks via ping and automated email alerts to administrators.
- Supports real-time device tracking and an alert notification system.
- Stack: Python.

SKILLS

Languages: Python, JavaScript, SQL, Java, C, C++, MIPS Assembly

Web & Backend: Node.js, Flask, REST API Design, JWT Authentication, RBAC, Express.js

Frontend: HTML, CSS, Figma, UI/UX Design

Databases: PostgreSQL, Database Design, ERD Modelling, Normalization

Networking: Routing & Switching, VLAN Configuration, Routing Protocols, Network Automation

Tools: VS Code, Git, Digital Ocean, PowerBI, Supabase, Mapbox, Paychangu, Africa's Talking

Other: Prompt Engineering (cost-optimised AI workflows), Technical Documentation, Business Writing

SOFT SKILLS

Strategic & Analytical Thinking · Communication & Technical Writing · Problem-Solving · Team Collaboration · Active Listening

TECHNICAL WRITING

- Software Requirements Specification (SRS) authored for 4+ projects, including the RMS SRS v1.1.
- Business plans written for 3+ ventures, including RMS Business Plan 2025 and RMS Pitch Deck 2025.
- Online articles on technology and software engineering topics.