JULIUS OKWE

ibejulius1@gmail.com

07047501126

Calabar

ABOUT

I'm a curious problem-solver bridging the worlds of science and technology. With a foundational background in Biochemistry and formal training from the ALX Africa Software Engineering program, I bring a unique analytical perspective to software development. Currently contributing to a South African startup revolutionizing waste management, I thrive at the intersection of backend systems and real-world impact. My passion lies in building scalable solutions while continuously expanding my expertise into fullstack development.

WORK EXPERIENCE

Software Engineer at Wastedump, Johannesburg, South Africa

2024 - present

As a key member of a globally distributed agile team, I engineered mission-critical backend services for payment, notifications, and collections. I also led frontend/backend integration and enhanced application security through robust authentication measures.

• Architected and delivered critical backend services from the ground up, including a secure payment processing module, a scalable email notification system, and an automated collections service, forming the backbone of the application's financial operations.

• Spearheaded the seamless integration between the frontend and backend systems, ensuring API consistency, optimal data flow, and a responsive, feature-rich user experience.

• Enhanced application security by designing and implementing a robust authentication and authorization layer for the subscription service, protecting sensitive user data and controlling access to premium features.

• Effectively collaborated in a globally distributed agile team to scope, design, and develop new features, successfully navigating time-zone differences to ensure timely delivery of product milestones.

Python with Raspberry Pi Educator at National Centre for Artificial Intelligence & Robotics

2024 - 2024

As a Python and Robotics Educator, I developed and led a project-based curriculum for high school students, mentoring them in building and programming embedded systems with Raspberry Pi Pico. My role involved fostering practical skills in software development, electronics, and problem-solving.

• Developed and delivered a hands-on, project-based curriculum for high school students on embedded systems using Python and Raspberry Pi Pico.

• Mentored a cohort of students in programming fundamentals and electronics, guiding them from concept to completion on multiple robotics and IoT projects.

• Fostered a collaborative learning environment that promoted critical thinking, problem-solving, and practical application of software engineering principles in a hardware context.

• Provided expert instruction on Python programming for hardware control, GPIO pin management, and interfacing with sensors and actuators.

Inventory and Weighbridge Manager at Releaf Africa, Cross River, Nigeria.

2021 - 2023

• Managed inventory systems, optimizing material workflows and dispatch accuracy.

• Led weighbridge operations, ensuring detailed tracking of raw material receipts.

• Operational Oversight: Manage daily logistics operations, including transportation planning, route optimization, and timely delivery of goods.

• Weighbridge Management: Supervise weighbridge activities, ensuring precise vehicle weighing, accurate documentation, and compliance with legal standards.

• Regulatory Compliance: Safety, and environmental regulations for logistics and weighing processes.

• Record-Keeping: Maintain detailed records of shipments, weights, and transactions for audits and reporting.

Freelance Data Entry Clerk at Evidence Action

2019 - 2021

Provided accurate and timely data entry support for project operations, ensuring the integrity of records used for payment processing, monitoring & evaluation, and strategic decision-making.

• Entered and validated large volumes of project data into Excel spreadsheets with a high degree of accuracy.

• Collaborated with project teams to ensure data completeness and resolve discrepancies.

• Supported payment processing workflows by maintaining up-to-date and error-free records.

• Contributed to monitoring and evaluation (M&E) efforts by preparing data for analysis and reporting.

• Demonstrated strong attention to detail and confidentiality in handling sensitive project information.

VOLUNTEER EXPERIENCE

Laboratory Assistant & Medical Records Officer at First Referral Hospital, Mutum Biyu.

2018 - 2020

Initially leveraged my biochemistry background to support laboratory operations with patient testing, then transitioned to the medical records department where I managed sensitive patient data for over 10,000 individuals, showcasing adaptability and a commitment to data integrity.

• Applied scientific knowledge in a clinical laboratory setting to assist with diagnostic testing and sample processing.
• Successfully transitioned roles to manage and maintain the hospital's patient information system, ensuring accuracy and confidentiality.
• Contributed to the efficient operation of both clinical and administrative functions in a high-volume hospital environment.

Logistics Coordinator at Nissis Vessels and Raphas Hands Foundations

2018 - 2018

Served as a Logistics Coordinator for a critical medical outreach mission providing aid to displaced Cameroonian refugees. Coordinated the distribution of medical supplies and supported a multidisciplinary team of healthcare professionals.

• Managed the end-to-end logistics for the distribution of essential medical supplies in a challenging, resource-constrained environment.
• Collaborated effectively with a diverse team of doctors, nurses, and other medical staff to ensure operational success of the humanitarian mission.
• Played a key role in enabling the delivery of vital healthcare services to a vulnerable refugee population.

PROJECTS

Cryptocurrency Portfolio Tracker

Designed and developed a full-stack cryptocurrency portfolio management application for real-time investment tracking. Tech Stack: React, NestJS, TypeScript, MongoDB, Redis, Docker, Material UI, Chart.js, BullMQ, Jest.

• Built a modern, responsive frontend using React and Material UI, featuring interactive data visualizations with Chart.js and Recharts for portfolio performance, asset allocation, and historical analysis.

• Engineered a robust backend with NestJS and TypeScript, implementing secure JWT-based authentication, role-based access control, and 2FA for enhanced security.

• Integrated real-time market data from multiple crypto APIs and supported automated balance updates, CSV import/export, and exchange API integration.

• Leveraged MongoDB and Redis for efficient data storage and caching, and BullMQ for background job processing.

• Implemented comprehensive testing using Jest and Cypress, ensuring high code quality and reliability.

• Containerized the application with Docker and orchestrated services using Docker Compose, demonstrating DevOps proficiency.

• Followed best practices in code quality with ESLint, Prettier, and TypeScript, and maintained scalable, maintainable codebases across both frontend and backend.

Terminal Text Editor in C

Designed and implemented a lightweight terminal-based text editor in C, inspired by the 'kilo' editor.

• Developed robust terminal I/O handling using low-level POSIX APIs (termios, ioctl, unistd), enabling raw mode input, real-time keypress processing, and dynamic screen rendering.

• Engineered custom screen drawing routines for efficient, flicker-free updates and responsive user experience.

• Implemented cross-platform window size detection and cursor positioning logic, ensuring compatibility across various terminal environments.

• Applied strong debugging and error-handling practices, including graceful recovery from system call failures.

• Demonstrated expertise in systems programming, memory management, and Unix/Linux development tools.

BenefitsHub Nigeria

Designed and developed a full-stack web application connecting Nigerian citizens with government benefits, featuring user authentication, profile management, benefit listings, and an admin dashboard. Tech Stack: Python, Flask, SQLAlchemy, HTML, CSS, JavaScript, Bootstrap, SQLite/PostgreSQL, Git.

• Engineered robust backend services using Flask and SQLAlchemy ORM, implementing RESTful routes, secure authentication, and role-based access for citizens and government agencies.

• Built responsive, user-friendly interfaces with HTML, CSS, JavaScript, and Bootstrap, ensuring accessibility and seamless experience across devices.

• Integrated search, filtering, and application workflows, enabling users to efficiently discover and apply for government benefits.

• Automated deployment and managed environment configuration, leveraging best practices in version control (Git), database migrations, and environment management.

• Centralized access to government benefits for Nigerian citizens, streamlining the application process and improving transparency.

• Demonstrated ability to deliver end-to-end solutions, from requirements gathering to deployment and user support.

Real-Time Collaborative Document Editor

Designed and developed a full-stack real-time collaborative document editing platform, enabling multiple users to edit documents simultaneously with instant updates and conflict resolution. Tech Stack: Node.js, Express, Socket.io, Prisma, PostgreSQL, JWT, React, Jest.

• Architected a scalable backend using Node.js, Express, and Prisma ORM, implementing efficient document versioning and optimistic concurrency control to ensure data consistency during concurrent edits.

• Engineered real-time communication with Socket.io, supporting room-based broadcasting and low-latency synchronization of document changes across all connected clients.

• Implemented secure JWT-based authentication and role-based access control, safeguarding user sessions and document access.

• Developed a modern, responsive frontend with React, providing intuitive document editing and real-time collaboration features.

• Wrote comprehensive automated tests with Jest to ensure reliability and maintainability of both backend and real-time features.

• Followed best practices in code quality, modular architecture, and error handling, resulting in a robust and maintainable codebase.

EDUCATION

University of Calabar (edu.url)

Honour: Bachelor of Science in Biochemistry

Location: Calabar, Cross River State, Nigeria.

Graduation Date: 2016

[ALX Africa](edu.url) (edu.url)

Honour: Certification in Software Engineering Programme

Location: Nairobi, Kenya

Graduation Date: 2025

LANGUAGES

English languages
Native

REFERENCES

Mr. Zakhele Shigonwe
Founder/CEO at [Wancemo Pty](#)

zakhele@wastedump.co.za

Mr. Benjamin Joshua
Lead Engineer at [Wancemo Pty](#)

benjamin@wastedump.co.za

08107160494

Mr. Andrew Ushie
Program Coordinator at [Evidence Action](#)

andrew.ushie@evidenceaction.org

08107160494