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

• Created and maintained back-end API services using NestJS.

• Tasked with implementing Yoco payment gateway

• Tasked with integrating email services API for system-wide transactional email feature

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

2024 - 2024

• Guided students in Python programming by building interesting projexts with Raspberry Pi.

• Provided tailored feedback to enhance coding comprehension and performance.

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.

VOLUNTEER EXPERIENCE

Medical Records Officer at First Referral Hospital, Mutum Biyu.
2018 - 2020

Helped with medical records and information management for over 10,000 in and out patients.

Logistics Manager at Nissis Vessels and Raphas Hands Foundations
2018 - 2018

Managed logistics and medical supplies at a free medical outreach to a Refugees camp for displaced Cameroonians in Cross River State.

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 Wance Pty

zakhele@wastedump.co.za

07047501126

Benjamin
Lead Engineer at Wance Pty

benjamin@wastedump.co.za

07047501126