

Kenneth Kelly Muhindi

Backend & Web3 Engineer

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Summary

Skilled Software Engineer with extensive experience in backend development, blockchain integration, smart contract development and system architecture design. Proficient in a range of technologies including Javascript/Typescript and Core Java, and tooling such as Node.js with Express, I excel at designing scalable microservices architectures that enhance system performance and user experience.

My expertise extends to developing and optimizing RESTful APIs, implementing robust security measures, and leveraging cloud platforms like AWS and GCP for efficient deployment and management of applications. With a strong background in blockchain technologies, particularly in creating secure smart contracts and decentralized solutions on EVM and Cardano ecosystems, I have successfully completed projects that integrate blockchain with traditional systems.

I am passionate in promoting Agile methodologies and committed to fostering collaborative environments that drive project success. I have a zeal for leveraging cutting-edge technologies and best practices and generally advancing software development through strategic problem-solving and continuous improvement.

Core Competencies

Languages & Frameworks

Javascript/Typescript, Java (8/11/17), Spring Boot, Node.js with Express

Messaging & Distributed Systems

Kafka, RabbitMQ, Event sourcing & CQRS

Databases

PostgreSQL, MongoDB, Redis

Cloud & DevOps

AWS Lightsail, GCP, Docker, Kubernetes, GitHub Actions, Bitbucket CI/CD

Blockchain & Web3

Solidity, EVM and UTXO blockchains, Consensus mechanisms, Wallet development, Key management, On-chain/off-chain architecture

Project Management

Agile, Scrum, Jira, JetBrains YouTrack

Other

Payments integration, System design, API design, Clean Code/SOLID

Experience

Senior Backend Developer - TX Meta

June 2024 – Present

- Architected and implemented a secure, multichain wallet architecture utilizing a hierarchical key derivation scheme to securely manage 10+ distinct digital assets, with easy dynamic support for new listed tokens.

- Implemented stablecoin (USDT/USDC) and mobile-money integration across the platform, enabling cross-border transactions that facilitate seamless payments and remittances for users.
- Developed a high-performance transaction processing module capable of handling both on-chain and off-chain transactions with low latency and high throughput, ensuring efficient transaction management.
- Collaborated closely with the frontend team to deliver a seamless user experience, focusing on wallet onboarding, transaction history, and real-time notifications.
- Developed scalable backend services and APIs to support wallet operations, user authentication, blockchain interactions, transaction history, and notification systems.
- Conducted regular security audits and implemented best practices based on CCSS guidelines to ensure the wallet meets industry standards for security and compliance.
- Development of Solidity smart contracts for lending and borrowing features, including interest rate models, collateral management, and liquidation mechanisms.
- Optimized wallet performance and scalability by identifying and addressing bottlenecks in transaction throughput and overall system efficiency.
- Led an agile team of 3 developers in adopting best practices for code quality, testing, and deployment, resulting in improved delivery timelines and reduced bugs through an agile workflow.

Lead Platform Engineer (Temp. Contract) — C2C Advisory Services Ltd

June 2024 – February 2025

- Architected Java-based microservices for payments and membership management using Java(Spring Boot), PostgreSQL, and MongoDB for a financial platform to support 2M+ users.
- Integrated mobile-money payments(M-Pesa) and implemented transaction processing queue using Kafka for high-throughput transaction processing, increasing TPS by 40%.
- Implemented Visa payment gateway integration on the platform, enabling seamless card payments for users.
- Improved critical system performance by 35% through code optimization, database indexing, and caching strategies using Redis.
- Setup observability stack with Prometheus and Grafana for real-time monitoring and alerting of system metrics.
- Managed CI/CD pipelines on Bitbucket/GCP and led API documentation with OpenAPI.
- Designed system architecture and data models to ensure scalability, reliability, and maintainability.
- Mentored a team of 2 developers in Agile practices, improving code quality and delivery timelines.

Senior Backend/Blockchain Engineer — Africa Blockchain Centre

January 2022 – May 2024

- Designed and implemented smart contracts as access control on offchain medical data sharing, enabling secure and private patient data management on the Cardano blockchain.
- Desinged and implemented Solidity smart contracts for a decentralized lottery system on Ethereum, including random number generation, ticket management, and prize distribution mechanisms.
- Developed REST API to integrate with Plutus smart contracts, enabling seamless interaction between off-chain applications and on-chain data.

- Led development of TraceLedger, a blockchain-based track-and-trace solution for coffee bean supply chain transparency with merkle root implementation for integrity proofs leading to a 80% cost reduction.
- Developed design specification for an on-chain lottery platform on Cardano, including smart contract architecture, transaction flow, and user interaction models.
- Provided technical leadership for a crypto tipping mobile app supporting multiple blockchain assets.
- Guided a team of five remote developers in Agile sprints, introduced code reviews and CI/CD pipelines, improving delivery schedules.

Software Developer — BandaHealth

August 2017 – December 2021

- Developed BandaGo, a mobile medical application for low-resource facilities, with middleware for efficient data caching and optimization of API performance (30% improvement).
- Worked on the refactoring of platform middleware from Java to Go for improved performance and scalability, resulting in a 50% reduction in response times.
- Implemented secure REST APIs for patient data management, ensuring compliance and data integrity.
- Developed and maintained a custom iDempiere ERP modules for healthcare management, integrating with third party systems for patient data synchronization.
- Led UI redesign, enhancing user adoption, and built custom iDempiere ERP plugins for business logic customization.

Other Past Experience

IT Support Specialist — JKUAT University

January 2011 – July 2017

- Built web applications for document research management and a proposal submission system, increasing submission rates.
- User support and training for university staff on IT systems, security protocols, and data management best practices.

Skills & Technologies

- **Blockchain & Web3:** Solidity, EVM chains zkSync, Hardhat, Foundry, Openzeppelin and EVM Layer-2s, Bitcoin, Web3 wallet design & integration, Bitcoin, Cardano development
- **Backend Development:** Java & Spring Boot, Node.js & Express, TypeScript
- **Databases:** PostgreSQL, MongoDB, Redis, Supabase
- **Cloud & DevOps:** AWS, GCP, Docker, Kubernetes, CI/CD (Bitbucket, GitHub Actions)
- **Messaging:** Kafka, RabbitMQ
- **Payment Integration:** M-Pesa, Daraja API
- **Front End:** React, React Native
- **Systems Design/Architecture:** Microservices, Event-Driven Systems, API Design

Education & Certifications

- Software Architecture and Design Course — Memi Levi (2025)
- Haskell/Plutus Development Course — Input Output Global (2023)
- Solidity Blockchain Developer Course — Udemy (2019 + Updated 2025)

- Cardano Developer Professional Certification — Emurgo Academy (2022)
- BSc. Information Technology — KCA University (2017)
- Diploma in Information Technology — JKUAT (2012)

Professional Affiliations

- Intersect MBO Member, Cardano Blockchain DevEx Community (2023 – Present)

References

Available upon request.