Don Shammah

Backend & Distributed Systems Engineer

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4	9	26	47
APPS IN ONE MONOREPO	REGULATORY BOARDS INTEGRATED	RATIFIED ADRS AUTHORED	COUNTIES SERVED

Backend engineer who designs and ships **money-moving, compliance-critical systems** end to end. Solo architect of **Build Market**, a live East African construction marketplace built on milestone escrow (M-Pesa), event-driven pipelines, and statutory credential verification. Pairs a commerce background with CS fundamentals, and writes down the reasoning behind every major decision.

EXPERIENCE

Solo Architect & Lead Engineer · Build Market

2024 – Present

East African construction marketplace & regulatory infrastructure · Turborepo · Node.js 24 · TypeScript · Next.js · Cloudflare · Render

- **Escrow payments:** Built milestone-based escrow on M-Pesa Daraja 2.0 (STK push, B2C disbursements) with idempotency keys and automated KRA eTIMS invoice reconciliation, designed to prevent double-spend and unauthorized releases.
- **Compliance state machines:** Modelled credential verification across 9 regulatory boards (NCA, EBK, BORAQS, EARB, EPRA, VRB, ISK, NEMA, KEBS), with an operator-queue fallback when board portals go down.
- **Event-driven backbone:** Engineered asynchronous pipelines on NATS JetStream and Redis-backed BullMQ worker pools, with dead-letter queues and poison-pill isolation so one bad message never stalls a queue.
- **Monorepo topology:** Split the platform into 4 apps: edge BFFs on Cloudflare Workers (OpenNext), an admin control plane, a regulatory ops queue, and containerized Node.js 24 worker daemons on Render.
- **Security & audit:** Designed capability-based authorization with typed `safeAction` boundary adapters, step-up session freshness checks, and append-only immutable audit logs.
- **Engineering governance:** Authored 26 ratified Architecture Decision Records defining domain slicing, client-layer boundaries, and data-classification invariants.

SELECTED PROJECTS

Build Market Platform buildmarket.app · case study

Live marketplace connecting homeowners, accredited contractors, and materials suppliers, with county-level fulfillment across all 47 Kenyan counties and milestone-protected payouts.

donshammah.tech source

Static engineering portfolio on Cloudflare Workers Static Assets: Mermaid diagrams rendered to inline SVG at build time (zero client-side JS), plus a security-redaction gate before publish.

SKILLS

Languages

TypeScript · Node.js 24 · Python · SQL · C

Distributed systems

NATS JetStream · BullMQ · Event-driven · State machines · Idempotency

Data

PostgreSQL · Prisma · Redis · Cloudflare R2

Cloud & DevOps

Cloudflare Workers · Render · Docker · GitHub Actions · Turborepo · Linux

Integrations & security

M-Pesa Daraja 2.0 · KRA eTIMS · Capability RBAC · Clerk · OpenTelemetry · Pino

EDUCATION

Bachelor of Commerce

University of Nairobi

2019 – 2022

Contracts, accounting systems, financial governance.

CS50x: Intro to Computer Science

Harvard University

Algorithms, data structures, C memory management, SQL.

VERIFIED CERTIFICATE

CS50P: Programming with Python

Harvard University

OOP, test-driven development (pytest), regex, exception handling.

VERIFIED CERTIFICATE