

# STEVE ARNOLD OTIENO

## Full Stack Software Engineer

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## PROFESSIONAL SUMMARY

Backend-focused Software Engineer specializing in architecting scalable, multi-tenant SaaS platforms using **Node.js (NestJS)** and **TypeScript**. Deep expertise in building high-availability APIs, event-driven architectures, and immutable financial ledger systems. Evolved from a PHP background to become a core contributor in enterprise environments, with a proven ability to optimize API performance and implement complex security protocols (**RBAC/PBAC**).

## TECHNICAL SKILLS

- **Backend:** Node.js, NestJS, TypeScript, PHP (CodeIgniter), Express.js.
- **Frontend:** React, Next.js, Tailwind CSS, Mantine Core, Shadcn UI.
- **Databases:** PostgreSQL (Prisma), MySQL, Redis, Supabase.
- **Architecture:** Multi-tenancy, Event-Driven Architecture, Microservices, RESTful APIs.
- **DevOps:** Docker, Git, CI/CD (GitHub Actions), AWS.

## PROFESSIONAL EXPERIENCE

**Full Stack Software Engineer** | iTravel Holidays (UK-based) | *Remote*

*March 2024 – Present*

- **Platform Engineering:** Collaborated with the senior engineering team to refactor legacy codebases and optimize RESTful API endpoints, contributing to a **30% improvement in conversion rates**.
- **Fintech Integration:** Assisted in the implementation and maintenance of the **Stripe** payment gateway. Engineered webhook handlers and idempotency logic to ensure a **99.8% transaction success rate** for global bookings.
- **System Architecture (Invoice Module):** Independently designed and built a multi-tenant invoice generation module. Implemented strict database isolation patterns to ensure data privacy between clients, significantly reducing manual billing overhead.
- **Performance Optimization:** Identified and resolved N+1 query issues and optimized database indexing, reducing API response times by **45%**.
- **Agile Collaboration:** Championed code quality through peer reviews and documentation. Active participant in bi-weekly sprint planning, helping streamline deployment velocity.
- **Environment:** Node.js, NestJS, React, MySQL, Redis, Docker, AWS.

## KEY PROJECTS

### GradeHub - Enterprise School Management SaaS | *Lead Architect*

*November 2025 – Present*

*A production-grade SaaS platform for educational institutions handling admissions, finance, and academic reporting.*

- **Event-Driven Architecture:** Decoupled core business logic from side effects (notifications, logs) using an internal **Event Bus (Pub/Sub)** pattern, ensuring non-blocking operations.
- **Financial Integrity:** Engineered a **double-entry ledger system** to track student fees. Implemented transactional updates (**ACID compliance**) to ensure balances are stored and verifiable, rather than calculated on-the-fly.
- **Advanced Security:** Built a **Permission-Based Access Control (PBAC)** system using NestJS Guards and Decorators, allowing for granular, capability-based security policies beyond standard roles.
- **Tech Stack:** NestJS, Next.js, PostgreSQL, Prisma, Redis, Docker.

### ArtisanBase (Multi-Tenant E-Commerce Platform) | *Lead Architect*

*May 2025 – Present*

- **Architecture:** Designed a "Headless" architecture with a single **NestJS** backend serving two distinct Next.js frontends (Admin Dashboard & Public Storefront).
- **Performance:** Integrated **Redis caching** for high-frequency read operations, reducing database load during peak traffic.
- **Tech Stack:** NestJS, Next.js, TypeScript, Prisma, PostgreSQL (Supabase).

## EDUCATION

### Bachelor of Science (B.Sc.) - Computer Science

Technical University of Mombasa (TUM) | 2020 – 2024

- **Capstone Project:** Multi-Tenant Invoice Management System.
- **Architectural Focus:** Designed a schema-shared multi-tenant architecture using **PHP (CodeIgniter)**. Implemented custom session-based data isolation logic to enforce privacy between tenants, establishing the foundational knowledge of SaaS security I now apply to Node.js environments.
- **Core Coursework:** Data Structures & Algorithms, Database Systems, Distributed Systems, Software Engineering.

## **LANGUAGES**

- English: Professional Working Proficiency
- Swahili: Native Proficiency