

# Patrick Nyaga

## Full Stack Software Engineer

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🐙 GitHub

### 👤 Profile

Full Stack Software Engineer with experience building and maintaining production web applications using React, JavaScript, Python, and backend APIs. Strong foundation in backend architecture, Linux systems, and infrastructure, with hands-on experience designing scalable services, integrating APIs, and supporting enterprise systems. Comfortable working across frontend, backend, and DevOps-adjacent workflows.

### 📁 Professional Experience

#### Kenya Revenue Authority 📄

##### *Business Analyst*

02/2025 - 11/2025

Nairobi, Kenya

- Mapped workflows for the Revenue Assurance EAPI Audit Module.
- Explored protocol analysis of eTIMS communication between servers and fiscal devices.
- Supported the Investigation & Enforcement Dashboard project, bridging business requirements with dev implementation.
- Collaborated with ICT teams to analyze processes, enhance system efficiency, and document technical requirements.

##### *Technology Innovation & Design*

01/2022 - 03/2022

Nairobi, Kenya

- Tested automation approaches for waiver letter processing using AI/ML.
- Experimented with open-source collaboration tools for teams.

#### Konza Technopolis (via ICT Authority Kenya)

12/2023 - 11/2024

##### *Smart City Solutions & Operations* 📄

Machakos, Kenya

- Supported deployment of fiber networks, smart poles, and digital signage infrastructure for smart city rollout.
- Contributed to rollout of Experience Center & Intelligence Operations Center for real-time city-wide monitoring.
- Assisted in operationalizing intelligent traffic management and surveillance platforms with real-time data feeds.
- Monitoring system up-time and performance, ensuring continuous connectivity across smart city infrastructure.

#### Devligence Limited

08/2023 - 06/2024


##### *Software Developer*

Nairobi, Kenya

- Built API-driven CRM modules.
- Designed responsive UIs with Figma + modern JS frameworks.
- Conducted API testing and reliability checks across workflows.

## Education

### Bachelor of Business Information Technology

Riara University 

GPA: 3.65/ 4.00 (First Class Honors)

05/2019 - 07/2023

Nairobi, Kenya

## Projects

### Aframes Booking Web App

07/2025 - Present

Full-stack web application for managing cottage reservations and client inquiries. The frontend is built with React and Tailwind CSS for a modern, responsive user experience, while the backend uses Express and Supabase to handle bookings, contact messages, and availability checks securely and efficiently.

### Khalkeus Construction Group

04/2025 - Present

Developed a portfolio site for a construction company. Focused on optimizing performance, clean code architecture, and user experience across devices. Currently enhancing code structure, responsiveness, and accessibility to align with SEO and mobile UX best practices.

### Expense Tracker

08/2025 - Present

A modern personal finance tracker built with React and Tailwind CSS. It allows users to manage their income, expenses, and wallets, visualize financial insights through charts, and customize settings like currency, language, and notifications.

### Techneia CRM

07/2025 - Present

Designed and developed a modular CRM web application focused on lead and contact management. Handled system planning, requirements analysis, UI design (Figma), and implementation of CRUD operations. Currently rewriting the project in Python to improve scalability, code maintainability, and backend logic separation.

### Ash-Vim-Editor

08/2025 - Present

Minimal Vim-like text editor built from scratch to explore buffer management, modal editing, and low-level input handling.

### API Fuzzing & Hardening Toolkit (Rust)

08/2025 - Present

CLI tool that generates malformed API requests (bad JSON, oversized payloads, replayed timestamps) to test system resilience.

### Compliance Verification CLI (Rust)

08/2025 - Present

Cross-platform CLI that queries compliance APIs, performs offline integrity checks, and stores results in tamper-proof logs.

## Skills

**Core Software Engineering** – Python (FastAPI, Flask), JavaScript (React, Node.js, Express), HTML5, CSS (Tailwind), PostgreSQL, MongoDB, API Design, Backend Architecture, testing, Git/GitHub, CI/CD basics

**Systems & Low-Level Engineering** – C, Rust, Linux (CLI, Internals Fundamentals, Shell Scripting), Reverse Engineering (MIPS, ARM, x86), Fuzzing, Protocol Analysis, API Security, Binary Parsing

**Tools & Platforms** – API Development (Postman, OpenAPI), Network Analysis (Wireshark, TCPdump), System Debugging (GDB, Valgrind, Strace), Build Tools (Webpack/Vite, npm/yarn)

## Certificates

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|--------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| - Elements of AI:<br>Introduction to AI &<br>Building AI – University<br>of Helsinki | - Artificial Intelligence<br>Foundations: Machine<br>Learning – LinkedIn<br>Learning | - Cybersecurity and Emerging<br>Technologies Awareness<br>Training – ICT Authority    |
| - Linux: Introduction to<br>Shell Scripting for DevOps<br>– Coursera                 | - Introduction to Linux<br>(LFS101) – Linux<br>Foundation                            | - A Beginner's Guide to<br>Linux Kernel Development<br>(LFD103) – Linux<br>Foundation |

## References

**Brian Nyangena**, *Managing Partner*, Bayes Consulting  
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