

Paul Ngumii

Lead Software Engineer - Telecom Infrastructure & Full-Stack Platforms

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Summary

Lead Software Engineer with 13+ years building telecom software across customer-facing products, backend platforms, and network automation. Strong across PHP/Laravel, Go, React/Next.js, and React Native, with hands-on experience in RADIUS AAA, TR-069/CWMP, and SIP/VoIP systems. Builds tools that make telecom operations safer, faster, and easier for customers and support teams.

Core Skills

Backend & Platform: PHP (Laravel), Go, Python, Node.js, Bash, REST APIs, SOAP Web Services, Background Jobs, Cron Jobs

Telecom Systems: RADIUS AAA (FreeRADIUS), TR-069/CWMP (GenieACS), SIP routing (Kamailio), VoIP/PBX (Asterisk), Sipwise VoIP platform

Frontend & Mobile: React, Next.js, TypeScript, React Native, Expo, Tailwind CSS, NativeWind, Bootstrap

Databases & Messaging: MySQL, PostgreSQL, SQL Server, SQLite, Redis, RabbitMQ

Infrastructure & DevOps: Docker, Docker Compose, Nginx, Linux, Git, GitHub/Gitea, GitHub Actions/Gitea Actions, CI/CD

Professional Experience

Lead Software Developer - Jamii Telecommunications Ltd

May 2019 - Present

Nairobi, Kenya

- Lead the day-to-day development of the Faiba customer self-care mobile app, web portal, backend services, and internal platforms used by customer support and network operations teams.
- Consolidated separate native Android and iOS applications into a single React Native + Expo codebase, reducing duplicate mobile development effort by approximately 50%.
- Develop and maintain customer account services covering authentication, balances, M-Pesa payments, notifications, and mobile and fixed broadband account workflows.
- Containerized Laravel API services with Docker behind existing load balancers, implementing environment isolation, queue workers, persistent storage management, and rollback strategies.
- Implemented remote configuration and release management features including feature flags, maintenance mode, forced application updates, and internal tester overrides.
- Integrated backend services with Emerald billing, M-Pesa mobile money, Sipwise VoIP, and KRA eTIMS electronic invoice signing.
- Build internal operations platforms using Go and Next.js for network fault management, GPON/fiber provisioning, service desk workflows, customer operations, and tax compliance.
- Built subscriber provisioning and access management solutions using FreeRADIUS and GenieACS, including secure management APIs, TR-069 device provisioning, vendor/OUI detection, and audit logging.

Part-Time Software Engineer – Lightup Networks

Nov 2023 – Present

Remote (Switzerland)

- Develop automation and operational tooling for a production VoIP platform, covering VoIP DID/number provisioning, carrier routing, SIP peer management, CDR validation, and billing workflows.
- Built a Bash CLI tool for secure configuration deployment through a jump host, featuring automated backups, MD5 integrity verification, configuration diffs, diagnostics, and multi-server synchronization.

- Built Laravel-based tooling that generates Asterisk dialplans and Kamailio routing configurations from customer onboarding data, reducing manual provisioning and configuration errors.
- Diagnose and resolve SIP routing, media, and call quality issues using CDR analysis, SIP/RTP packet traces, carrier routing patterns, and infrastructure health checks.

Senior Software Developer – Shimba Technologies
Nairobi, Kenya

Oct 2017 – Nov 2018

- Upgraded subscriber registration systems for Safaricom and Telkom Kenya, delivering new features and maintaining existing integrations.
- Built and deployed the official Jamii Telecommunications corporate website using Laravel.
- Developed REST APIs for Tupay, a Yii-based digital payment platform, supporting payment processing and third-party integrations.

Information Technology Consultant – SimpleKraft
Nairobi, Kenya · Concurrent Consulting

May 2014 – May 2019

- Delivered custom web applications for SMEs using Laravel, CodeIgniter, Yii, and WordPress.
- Designed REST APIs, MySQL database schemas, and reporting dashboards for client operations.
- Provided technical consulting, user training, application support, and leadership for small development teams.

Software Developer – OpenWorld Ltd
Nairobi, Kenya

Oct 2012 – May 2014

- Developed ERP modules and user interfaces using Yii, jQuery, and Bootstrap.
- Built backend features for subscription management, authentication, and accounting workflows.
- Collaborated with product, QA, and support teams to deliver full-stack features throughout the software development lifecycle.

Key Engineering Projects

Network Operations Platform

Built Go/Next.js tooling for GPON/fiber provisioning, alarm handling, and service desk workflows. Replaced direct SSH access to network devices with browser-based workflows for safer routine provisioning and diagnostics.

Mobile Release Platform

Built an EAS release pipeline with TestFlight, Google Play Internal Testing, OTA updates, push-notification segmentation, feature flags, and forced-update controls for staged app releases.

VoIP Operations Platform

Built Bash and Laravel automation for Asterisk/Kamailio covering VoIP DID/number provisioning, SIP routing, route validation, CDR analysis, billing reconciliation, and multi-server configuration management.

Education

BSc, Computer Technology — Jomo Kenyatta University of Agriculture and Technology
Second Class — Upper Division · May 2009 – Sept 2012