

Ntsako Mbhalati

Full-Stack Software Engineer

Johannesburg, Gauteng

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Full-Stack Software Engineer with a strong foundation in Mathematics and Statistics. Skilled in building scalable, user-focused systems using TypeScript, React, and Node.js. Experienced across frontend, backend, mobile, and cloud environments (AWS, GCP), with a strong interest in software architecture and developer tooling. Passionate about using technology to solve complex problems and deliver measurable business value.

Core Skills

Programming Languages: JavaScript • TypeScript • Python • Go

Frontend: React • React Native (Expo) • Redux • Zustand • HTML • CSS • Tailwind CSS

Backend & Full-Stack: Node.js • Express.js • Next.js • Flask • REST • GraphQL • tRPC (TypeScript Remote Procedure Call) • Prisma • Drizzle ORM • JWT

Databases & Caching: SQL • PostgreSQL • MySQL • MongoDB • Redis

Tools & Platforms: Git • GitHub • Figma • Vitest • Linux & Unix-based systems (e.g., macOS) • Amazon Web Services (AWS) • Google Cloud Platform (GCP) • Vercel • SST • Pulumi

APIs: • Google FHIR • Google Cloud Healthcare APIs

Mathematical & Statistical Analysis: Multivariate Statistics • Regression Analysis • Regression Models • Time Series Analysis • Complex Analysis • Abstract Algebra • Real Analysis

Professional Experience

Software Engineer

Feb 2025 – Sep 2025

Quero Medical | Johannesburg, Gauteng – Hybrid

At Quero Medical, I contributed to the design and development of digital healthcare products, with responsibilities growing from implementing features to owning key parts of the frontend migration and architecture discussions.

- **UI Architecture & Consistency:** Contributed to the design of a custom UI library built on React and ShadCN components, defining reusable patterns and driving consistency across products.
- **Platform Migration:** Took ownership of critical areas in the ongoing migration of the QM Insight platform from Expo React Native to Next.js, integrating the UI library and improving frontend maintainability.
- **Feature Development:** Built full-stack features to enhance patient and clinician experiences, developing responsive interfaces and maintaining APIs with React, Next.js, TypeScript, tRPC, and other modern tools.
- **Systems Exposure:** Gained experience with backend systems and infrastructure, including Node.js, Express, Google FHIR, GCP Cloud Healthcare APIs, AWS serverless (SST, Pulumi), and CI/CD pipelines with GitHub Actions.
- **Quality & Collaboration:** Implemented automated testing with Vitest, participated in architecture and feature discussions (authentication, permissions, state management, UX), and collaborated with cross-functional teams to deliver reliable, patient-centric solutions.

Software Engineer (Volunteer)

Sep 2023 – Present

Christian Revival Church (CRC) | Johannesburg & Polokwane – Remote

Contributing to the digital transformation of CRC's ministries through ongoing software development initiatives across multiple regions. Currently leading development on a scalable admin system for CRC

Johannesburg's Kids Church ministry, while maintaining and improving CRC Polokwane's public web presence.

CRC Johannesburg – Kids Church Admin System

- **System Overview:** Developing a **multi-app admin system** designed to support **1,000+ children weekly**, with potential for national deployment. The system includes two mobile apps (parent-facing and volunteer-facing) and a central web dashboard.
- **Mobile & Web Development:** Building cross-platform mobile apps using **Expo React Native (iOS & Android)** and a responsive **Next.js** web dashboard.
- **APIs & Data Layer:** Implementing **end-to-end type-safe APIs** with **tRPC**, **Drizzle ORM**, and **PostgreSQL (Neon serverless)**, featuring an **offline-first sync strategy** via **WatermelonDB**.
- **UI/UX Design:** Managing state with **Zustand**, designing interfaces with **Tailwind CSS**, **NativeWind**, and **ShadCN UI**, and creating prototypes in **Figma**.
- **Authentication & Notifications:** Integrating **BetterAuth**, **Resend**, and **Twilio** for authentication, email, and SMS workflows.
- **Tooling, Analytics & Deployment:** Structuring the project within a **Turborepo monorepo** (pnpm), implementing **automated testing** (Vitest), **CI/CD pipelines** (GitHub Actions), and **analytics tracking** (PostHog). Preparing for **serverless deployment** on **AWS Lambda** using **SST v3** and **Pulumi**.

CRC Polokwane – Church Website

- Designed and developed the crcplk.co.za website to strengthen CRC Polokwane's digital presence and community engagement.
- Built with **TypeScript**, **React**, **Next.js**, and **Tailwind CSS**, featuring responsive layouts, SEO optimization, and user authentication.
- Collaborated with leadership to align technical functionality with communication and outreach goals.

Projects

Flagship – Feature Flag SDK (In Progress) | [Landing Page](#) | [Github](#) | [npm Package](#)

SDK and backend for multi-tenant feature flag management with secure key handling and live updates via WebSockets. Built with TypeScript, Node.js, Express, PostgreSQL, and Turborepo.

Springbok – State Management Library (In Progress) | [Landing Page](#) | [Github](#) | [npm Package](#)

Lightweight JavaScript store with React hooks, middleware, and persistence. inspired by Zustand.

Education

University of Limpopo

Jan 2020 - Nov 2024

Bachelor of Science in Mathematical Science (Majoring in Mathematics and Statistics)

Key modules: Complex Analysis, Mathematical Analysis I & II (Real Analysis), Abstract Algebra, Applied Linear Regression, Design and Analysis of Experiments, Time Series Analysis, Sampling Theory.

Languages

English (Native), XiTsonga (Proficient)

References

Available upon request.