

Ntsako Mbhalati

Full-Stack Software Engineer

Johannesburg, Gauteng

cn.mbhalati@gmail.com | portfolio.mbhalati.com | [LinkedIn](#) | [Github](#)

Full-Stack Software Engineer with a strong foundation in Mathematics and Statistics, driven by curiosity and a passion for solving complex problems. Specializing in JavaScript and TypeScript, proficient in Python, and learning Go (Golang) for fun. Experienced in web, mobile and software development, with hands-on exposure to Amazon Web Services (AWS) and other Cloud technologies. Focused on learning, growth, and creating impactful, scalable solutions.

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.

Professional Experience

Software Engineer (Junior)

Feb 2025 – Present

Quro Medical | Johannesburg, Gauteng – Hybrid

At Quro Medical, I contribute 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 2025 – Present

Christian Revival Church Johannesburg | Johannesburg, Gauteng - Remote

Currently building a multi-app admin system for CRC's Kids Church ministry, designed to serve 1,000+ children weekly with potential national scale. The system includes two mobile apps (parent-facing and volunteer-facing) and a central web dashboard.

- **Mobile & Web Development:** Developing mobile apps with Expo React Native (iOS & Android) and a responsive Next.js web dashboard.
- **APIs & Data Layer:** Implementing end-to-end type-safe APIs using tRPC, Drizzle ORM, and PostgreSQL (serverless Neon), with a local-first sync strategy via WatermelonDB.
- **UI/UX Design:** Managing state with Zustand, designing interfaces with Tailwind CSS, NativeWind, and ShadCN UI, and creating mockups in Figma.

- **Authentication & Notifications:** Implementing authentication, email, and SMS workflows with BetterAuth, Resend, and Twilio.
- **Tooling, Analytics & Deployment:** Organizing the project in a turborepo monorepo with pnpm, implementing automated testing (Vitest), CI/CD pipelines (GitHub Actions), and product analytics with PostHog; planning serverless deployment with AWS Lambda, SST v3, and Pulumi.

Software Engineer (Volunteer)

Sep 2023 – Present

Christian Revival Church Polokwane | Polokwane, Limpopo – Remote

Designed and delivered CRC Polokwane's main website (crcplk.co.za), supporting the church's digital presence and community initiatives.

- Built the site with TypeScript, React, Next.js, and Tailwind CSS.
- Designed responsive layouts in Figma, with SEO optimization and user authentication.
- Collaborated with leadership to align functionality with organizational goals.

Projects

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

SDK and backend service for managing feature flags in multi-tenant applications.

- Built with TypeScript, Node.js, Express.js, React, DrizzleORM, and PostgreSQL in a Turborepo monorepo.
- Will support secure API key management and real-time flag updates via WebSockets.
- Provides a client SDK with React hooks (useFlag) for seamless integration.

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

Lightweight state management library inspired by Zustand.

- Developed core store in vanilla JavaScript with a React wrapper for integration.
- Implements subscription-based updates with minimal re-renders.
- Supports middleware for logging/debugging and simple persistence.

Core Skills

Programming Languages: JavaScript • TypeScript • Python • Go

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

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

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

Languages

English (Native), XiTsonga (Proficient)

References

Available upon request.