



MUHAMMED NAZAL K

Full-Stack Developer

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Professional Summary

Full-Stack Developer specializing in scalable web and mobile applications with experience in **AI systems**, **RESTful APIs**, **GraphQL**, and modern frontend architectures. Focused on clean architecture, performance optimization, and delivering production-ready applications across web and mobile platforms.

Technical Skills

Languages: JavaScript, TypeScript, Python, HTML, CSS

Frontend: React, Next.js, React Native (Expo), Redux Toolkit, Tailwind CSS

Backend: Node.js, Express.js, FastAPI, Django, GraphQL

Databases: MongoDB, PostgreSQL, MySQL

Tools & Deployment: Git, GitHub, Docker, Firebase, Prisma, Render, Vercel, Expo EAS

Professional Projects

University Management Platform — Full-Stack Educational System [Live Demo](#) | [GitHub](#)
Scalable university operations platform for academics, admissions, and faculty management.

- Architected **MERN stack** system with **Role-Based Access Control (RBAC)** using **JWT** and **Firebase Authentication**.
- Integrated real-time communication using **Socket.io** following **Clean Architecture** principles.
- Implemented secure payments via **Stripe API** and **Razorpay API**.
- Designed optimized **MongoDB schemas** and scalable **REST API architecture**.

Full-Stack E-commerce Platform — MERN Commerce Application [Live Demo](#) | [GitHub](#)
Production-ready commerce platform with analytics and secure payment workflows.

- Built secure authentication using **JWT** and **Google OAuth 2.0**.
- Implemented centralized state management with **Redux Toolkit**.
- Integrated **Cloudinary** and **Razorpay API** for scalable media and payments.
- Developed analytics dashboard using **Chart.js**.

Additional Projects

TunnelX — URL Shortener & WebSocket Tunneling Engine [Live Demo](#) | [GitHub](#)

- Built custom **WebSocket-based tunneling engine** to securely expose local services.
- Developed **URL shortening system** with alias routing and public-to-local mapping.
- Implemented **SHA-256 token hashing** for secure tunnel authentication.
- Designed **multi-language agents (JavaScript & Python)** for local service connection.
- Added **real-time bandwidth and status monitoring** dashboard.

Brototype Enquiry Assistant — RAG-Based AI System [Live Demo](#) | [GitHub](#)

- Built **Retrieval-Augmented Generation (RAG)** pipeline using **Next.js** and **LangChain**.
- Integrated **Astra DB** vector storage and **Groq LLMs**.
- Implemented **Redis caching** and citation-based response system.

Thira — CMS & Digital Storefront Platform [Live Demo](#) | [GitHub](#)

- Developed CMS using **Next.js App Router** and **MongoDB**.

- Implemented secure admin layer with **NextAuth** and **bcrypt**.
- Optimized media delivery using **Cloudinary** and performance-focused design.

Expenzo — Mobile Expense Management App

[Live Build](#) | [GitHub](#)

- Built cross-platform app using **React Native (Expo)** and **TanStack Query**.
- Developed secure backend using **Express.js** and **PostgreSQL (Prisma)**.
- Automated recurring workflows using **Node-Cron** and integrated **Firebase FCM**.

Become a Cook — AI-Powered Culinary Training App

[Live Demo](#) | [GitHub](#)

- Engineered AI evaluation system using **FastAPI** and **Google Gemini**.
- Implemented dynamic scoring algorithm with structured validation via **Pydantic**.
- Optimized frontend performance using **Next.js**.

Education

Software Development Program — Brototype Bootcamp

Aug 2024 – Present

Kerala, India

[Certificate](#)

NAMHSS Peringathur — 12th Senior Secondary (Computer Science)

Jun 2022 – Apr 2024

Kannur, Kerala, India

Events & Community

Google Developer Groups (GDG) Event — Attendee

Dec 2025

Kerala, India