

NITESH RAJ KHANAL

Software Engineer — Blockchain & Cryptography Learner

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Professional Summary

Software Engineer and **CTO & Co-Founder at MVTLAB (USA startup)** with experience building scalable SaaS platforms, secure mobile applications, and decentralized solutions. Skilled in **React Native and SwiftUI** for cross-platform and native iOS development, with additional expertise in **Next.js, NestJS, Golang, microservices, Kubernetes, and database systems** (PostgreSQL, MongoDB, Redis, Firebase). Proven track record delivering high-impact products such as the **Ncell Mobile App**, Evaheld Legacy Vault, and blockchain-based dApps, combining strong technical execution with a focus on performance, privacy, and user experience. Passionate about driving innovation in **mobile development, SaaS products, and secure digital ecosystems**.

Education

Bachelor of Science in Computer Science and Information Technology (BSc. CSIT)

St. Lawrence College, Kathmandu, Nepal

Graduated: 2022 — Score: 67%

High School

Canvas International College, Kathmandu, Nepal

Graduated: 2016 — Score: 63%

Certifications

Certified MERN Stack Developer

Broadway Infosys Nepal (ISO 9001:2015 Certified)

Certificate No.: B16077

Verification: verify.broadwayinfosys.com

Skills

- **Mobile & Frontend Development:** React Native, SwiftUI (iOS), Next.js, React, UI/UX collaboration, performance optimization.
- **Backend & SaaS Platforms:** NestJS, Node.js, Golang, microservices, gRPC, Kafka, Kubernetes, Docker, CI/CD pipelines, cloud-native architectures.
- **Databases:** PostgreSQL, MySQL, MongoDB, Redis, Firebase, Supabase.
- **Programming Languages:** JavaScript, TypeScript, Swift, Golang, Java, Kotlin, C, Python.
- **Cryptography & Blockchain:** AES-256, RSA, ECC, digital signatures, smart contracts (Ethereum/Solana), Web3.js, decentralized identity (DID).
- **Tools & Collaboration:** Git, Jest, Agile/Scrum, team leadership, startup product development.

Professional Experience

Chief Technology Officer (CTO) & Co-Founder, MVTLAB (USA Startup)

June 2025 – Present

- Co-founded **MVTLAB**, a SaaS startup registered in the USA, building a platform for advanced **A/B and multivariate testing** to help businesses optimize websites and user experiences.
- Defined the technical vision and product roadmap, leading a small cross-functional team from ideation to MVP delivery within the first three months.
- Architected the platform using **microservices, Kubernetes, gRPC, and Kafka**, ensuring scalability, real-time data handling, and robust deployment workflows.
- Oversaw backend services in **NestJS and Golang**, supporting high-throughput experimentation analytics.
- Directed frontend development in **Next.js**, designing intuitive dashboards and smart code snippets for seamless website integration.

Software Engineer, Mokshya Protocol

July 2024 – Present

- Built secure and scalable **Web3 + React Native** applications, integrating decentralized wallet solutions and improving user privacy with end-to-end encryption.
- Implemented **MTPROTO protocol** for secure in-app messaging, enhancing communication privacy in decentralized apps.
- Developed and audited **smart contracts** on Ethereum and Solana, ensuring security and gas efficiency for DeFi transactions.
- Integrated **NFTs and tokenomics models** to drive engagement and incentivize user participation within dApps.
- Designed a **decentralized identity (DID)** system for user authentication, enabling users to control their identity without central authorities.

Full Stack Developer, Evaheld Memorials (Australia)

Aug 2022 – Feb 2023

- Developed and maintained the **Evaheld Legacy Vault** platform using Next.js, enabling users to securely store, schedule, and share written, audio, and video legacy content.
- Built responsive, accessible UIs with Next.js and React, ensuring seamless retrieval and playback of multimedia memories across devices.
- Integrated backend APIs for content scheduling, secure authentication, and inheritance triggers, ensuring GDPR-compliant data privacy.
- Optimized **server-side rendering (SSR)** for performance and SEO, improving page load times and search visibility.
- Collaborated with product and design teams to deliver empathetic digital experiences for memorialisation and advance care directives.

Software Engineer, Amnil Technologies Pvt. Ltd

Apr 2022 – Jul 2024

- Spearheaded development of the **Ncell Mobile Application**, a React Native app used by millions for telecom services in Nepal.

- Implemented **AES-256 encryption and biometric authentication**, reducing unauthorized access by 40%.
- Optimized app performance with caching and backend API tuning, reducing response times by 30% and app crashes by 10%.
- Led development of a scalable mobile banking solution with secure transactions and multi-factor login.
- Collaborated with cross-functional teams to deliver intuitive, high-performance mobile user experiences.

Software Engineer Intern, Diagonal Technologies Pvt. Ltd Nov 2021 – Mar 2022

- Contributed to secure communication protocols for a large-scale telecom project, ensuring data confidentiality and reliability.
- Assisted in designing a scalable **C4 architecture** with TypeScript and Node.js for high-traffic applications.
- Built foundational experience in **cryptography**, working with hashing, symmetric, and asymmetric encryption techniques.

Project Experience

MVTLAB SaaS Platform

Multivariate & A/B Testing Platform (Next.js, NestJS, Golang, Microservices, Kubernetes, Kafka, gRPC, PostgreSQL, Redis)
mvtlab.io

- Co-founded and led the development of a SaaS experimentation platform enabling businesses to run advanced A/B and multivariate testing for website optimization and growth.
- Architected a cloud-native system with **Kubernetes, gRPC, and Kafka**, supporting real-time event streaming and analytics for thousands of concurrent users.
- Designed backend microservices in **NestJS and Golang**, ensuring low-latency responses and high system availability.
- Integrated **PostgreSQL and Redis** for reliable data storage, caching, and session management.
- Delivered intuitive dashboards and integration snippets in Next.js, enabling seamless onboarding for non-technical teams.

Yarsha Application

Social-Fi App (SwiftUI, Web3, Blockchain)
[Available on App Store](#)

- Built a decentralized **Social-Fi** iOS application in SwiftUI, integrating Solana wallet support and tokenomics to reward user engagement.
- Designed a secure architecture for **end-to-end encrypted messaging** using MTProto protocol, protecting user data.
- Integrated gamification, peer-to-peer token transfers, and decentralized reputation systems to enhance retention and adoption.

- Optimized performance and user flows, achieving smooth onboarding and reducing crash rates significantly.

Ncell Mobile Application

(React Native, Data Security, Cryptography)

[Available on App Store](#) — [Available on Google Play \(5M+ downloads\)](#)

- Spearheaded development of Nepal's most widely-used telecom application with **5M+ downloads**, built in React Native.
- Implemented **AES-256 encryption** and **RSA key exchange** to secure user data and transactions, ensuring compliance with telecom security regulations.
- Collaborated with backend teams to optimize APIs, improving response times by 30% and scaling to handle 500K+ daily active users.
- Delivered features such as **real-time support chat**, **package purchases**, and **user profile management**, enhancing customer satisfaction.

Tedunet Online Teaching Platform

(Next.js, NestJS, WebRTC, Microservices, PostgreSQL, Redis)

tedunet.com

- Built a GDPR-compliant online education platform for a UK company, supporting live classes, recordings, and student-teacher interactions.
- Integrated **WebRTC** for real-time video conferencing, screen sharing, and interactive whiteboarding.
- Designed backend microservices with NestJS, PostgreSQL, and Redis to support thousands of concurrent learners.
- Implemented payment systems, secure authentication, and role-based access control for students and instructors.
- Ensured compliance with **GDPR and data privacy regulations**, enhancing user trust in the platform.

Mega Solar Energy & Home Automation

(Next.js, PostgreSQL, Redis, API Integrations)

megasolarenergy.com.np

- Developed a corporate website for a solar energy and home automation company in Nepal, showcasing products and services.
- Built a **booking and inquiry system** with Next.js, PostgreSQL, and Redis for efficient customer interactions.
- Integrated SEO, analytics, and lead capture mechanisms to boost visibility and conversion rates.
- Enhanced backend APIs for inventory and project management, streamlining internal operations.

Editor.io (Web App)

(React.js, Bootstrap, Markdown, Live Preview)

editor-io-delta.vercel.app

- Built a collaborative online text editor with **Markdown support**, **live preview**, and CodePen-like features.

- Enabled users to write and test HTML, CSS, and JavaScript snippets with instant rendering in-browser.
- Designed a clean, responsive UI with React.js and Bootstrap for multi-device accessibility.
- Implemented autosave and versioning features, improving usability and reliability.

Bits-Of-c0de Blog Application

(Next.js, TypeScript, Firebase, Redux, TailwindCSS)

bits-of-c0de-gilt.vercel.app

- Developed a modern blog platform with **user authentication (Firebase)** and secure content management.
- Built dynamic content workflows with Next.js and TypeScript, ensuring SEO-friendly architecture.
- Added **dark/light mode support**, responsive design, and accessible UI using TailwindCSS.
- Deployed on Vercel with CI/CD pipelines, ensuring fast iterations and continuous improvements.

Activities and Interests

- **Entrepreneurship & Startups:** Passionate about building and scaling SaaS products, leading teams, and exploring innovative business models.
- **Mobile Development:** Continuous learning in React Native and SwiftUI, experimenting with new design patterns and performance optimizations.
- **Open Source & Tech Community:** Contributor to open-source projects and active in mentoring junior developers in mobile and full-stack technologies.
- **Outdoor Activities:** Trekking, hiking, and exploring nature to balance work with creativity and mindfulness.
- **Personal Growth:** Engaged in problem solving, system design challenges, and staying up to date with emerging technologies.

Research Interests

- **Cryptography & Secure Systems:** Researching protocols for end-to-end encryption, decentralized identity, and secure communication frameworks.
- **Blockchain Protocols:** Interest in consensus algorithms, scalable dApp architectures, and tokenomics models for Web3 ecosystems.
- **SaaS Architectures:** Exploring microservices, distributed systems, and real-time analytics for cloud-native platforms.
- **Human-Computer Interaction:** Investigating user-centric design in mobile applications and SaaS dashboards for improved usability and accessibility.
- **AI in Experimentation:** Future interest in applying machine learning to optimize multivariate and A/B testing for web platforms.