RANAK DEBNATH

Software Engineer & Data Analyst • AI/LLM-Augmented Systems • Full-Stack Development

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PROFESSIONAL SUMMARY

Founder-level software engineer and data analyst with hands-on experience **architecting production systems** and building **AI/LLM-augmented engineering workflows** that automate complex business processes. Combines a strong data science foundation (Python, machine learning, SQL) with full-stack system design across React Native, NestJS, Next.js and PostgreSQL, including **end-to-end encryption on the Signal Protocol**, **real-time WebRTC calling** and **Stripe payments**. Currently leads **AI-driven document and financial-modeling automation** at a manufacturing firm while founding and scaling a **cross-border software studio** serving clients in the UAE, South Africa, and UK.

PROFESSIONAL EXPERIENCE

CTO | OmniDevX Studio *Dec 2025 – Present*

- **Built an encrypted messenger on the Signal Protocol** (X3DH, Double Ratchet, Sealed Sender) with @mentions, message editing, delete for everyone, message search, multi-device delivery, delivery receipts, and an MFA-protected encrypted file vault.
- **Scaled group voice and video calls** from **6 to 10 participants**, paused video for off-screen participants, and enabled killed-app ringing via CallKit/Telecom.
- **Delivered Executive Protection missions end to end**: a backend session state machine, a CPO app, live GPS tracking with native Mapbox turn-by-turn navigation, SOS linkage, and an append-only mission history with idempotent, retry-safe updates.
- **Developed booking and payments**: auto-dispatch to agencies, **escrow and payouts**, a credit wallet with multi-currency top-up, and admin-editable region-based pricing and subscription plans.
- **Built a Next.js ops console** with four admin levels, account provisioning, pricing and catalog management, referral campaigns and notifications.
- **Improved reliability and performance**: made encrypted backup/restore resilient on poor networks, removed three per-message costs behind UI lag, audited the database for **N+1 queries and missing indexes** (sized for **50k users**), and fixed Stripe edge cases.
- Added about **1,430 tests**, raising messenger coverage from **51% to 74%**, with a permanent **regression test for each fixed bug**, plus written verification runbooks and on-device QA using ADB logcat.

Executive Engineer | Tex Fasteners (BD) Ltd. / Tex Zippers *Dec 2024 – Present*

- **Engineered an AI-assisted pipeline** generating **capital-investment proposals** from Excel financial models via DOCX XML automation, including multi-scope equipment ROI modeling.
- Built Excel/Google Sheets **performance dashboards** with multi-fiscal-year comparisons (**2019–present**), optimized with ARRAYFORMULA/SUMIFS; **used daily company-wide**, saving **1–2 hours** per report.
- Produced **compliance and process documentation**, including a customer test-justification report and a color-development SOP.
- Sourced and evaluated a **multi-country supplier network** (Bangladesh, India, China) for coating materials, building structured procurement tracking systems.
- Developed **data-driven reporting strategies** that improved decision-making accuracy by **20%** and processing speed by **25%**.

Senior Backend Developer | Cleverlyy (Remote) *Aug 2024 – Nov 2025*

- **Built the complete backend system** powering the Cleverlyy application: **50+** modules and **145** API endpoints serving **4,000+** users at **99%** uptime, with **1–3 business-day** feature turnaround.
- **Integrated AI/LLM-driven features** directly into the production app.
- **Partnered directly with the CTO** on system architecture and roadmap decisions.

TECHNICAL SKILLS

- **Languages:** TypeScript, JavaScript, SQL, Kotlin (native Android modules)
- **Mobile:** React Native 0.81, Expo SDK 54, React 19, React Navigation, Zustand, Reanimated, React Native SVG, Expo Camera / Image Picker
- **Backend:** NestJS (Node.js), REST APIs, WebSockets (Socket.IO), class-validator, scheduled jobs (@nestjs/schedule)
- **Web:** Next.js 15 (App Router), React 19, SWR, Tailwind CSS, IndexedDB
- **Databases & storage:** PostgreSQL (Supabase), Redis (ioredis), SQLCipher / op-sqlite (encrypted on-device DB), S3-compatible object storage (AWS SDK)
- **Security & encryption:** Signal Protocol (libsignal: X3DH, Double Ratchet, Sealed Sender), end-to-end encryption, Keychain / Keystore, TOTP / biometric MFA, JWT auth
- **Real-time calls:** WebRTC, mediasoup (SFU for group calls), CallKit (iOS), Android Telecom / CallKeep, foreground services
- **Maps & location:** Mapbox (native SDK + Mapbox GL JS), live GPS tracking, turn-by-turn navigation
- **Notifications:** Firebase Cloud Messaging, Notifee, headless background handlers
- **Payments & communication:** Stripe (wallet, escrow, payouts), Twilio (SMS OTP)
- **DevOps:** Docker / Docker Compose, GitHub Actions CI/CD, SSH deploys to a Contabo VPS, Gradle, Firebase App Distribution, EAS Build
- **Testing & QA:** Jest, React Native Testing Library, mutation testing, ADB / logcat device debugging

FEATURED PROJECTS

- **Bravo Secure** — Encrypted booking platform and Slack-style team messenger for military personnel (private repository).
- **GuardMaster Fencing** — E-commerce website built on Magento. guardmasterfencing.com
- **Cleverlyy** — EdTech platform; built the complete backend. cleverlyy.com

EDUCATION

B.Tech, CSE (Data Science, AI & ML) | Lovely Professional University *Sep 2020 – Jul 2024*

- **First Class (78%)**. Thesis: "Sonar: Mine vs. Stone Predictions." Specialization in advanced data analysis and machine learning.
- Automated reporting workflows using Google Apps Script; managed a team to deliver a machine learning project on schedule and within budget.

CERTIFICATIONS & AWARDS

- 12 Coursera certifications in Machine Learning & Prompt Engineering
- Dean's List Award (O+ grade, Competitive Programming)

REFERENCES

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