

Suparno Saha

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TECHNICAL SKILLS

Languages: TypeScript, JavaScript, Kotlin, Python, Java, C

Mobile & Frontend: React Native, Expo (Native Modules, EAS, OTA), Jetpack Compose, CameraX, Media3/ExoPlayer, React, Next.js, TailwindCSS, Redux, WebGL

Backend & Tools: Node.js, Express, Django, REST APIs, JWT, OAuth 2.0 (PKCE), MongoDB, LangChain, Sentry, Amplitude, Git, Gradle

EXPERIENCE

Unencumbered Interactive Pvt Ltd

Mar 2026 – Aug 2026

Software Engineering Intern | [yap](#) | [iykyk](#)

Remote

- Shipped **yap** (React Native/Expo, Android + iOS) to both app stores as one of two engineers, owning all native Android code, analytics, and most of the RN frontend — **16.6k users** at **30.3% Day-7 retention**.
- Built the app's **crash-reporting and performance-tracing layer** (Sentry v8 native linkage, custom sampler, per-stage upload spans) and root-caused **~20 production crash classes**; user-perceived crash rate fell from a **9.28% peak to 1.45%**.
- Wrote **Kotlin native modules** via Expo Native Modules, including a from-scratch notification layer that works around Android's immutable notification channels with versioned channel IDs while keeping RNFirebase deep linking intact.
- Owned **Amplitude** instrumentation across both products, giving zero-instrumentation apps their first behavioural data layer: fixed **12 event-tracking bugs** and moved tracking state from refs to Redux/MMKV, structurally eliminating a stale-closure bug class.
- Sole owner of the Android app for **iykyk** (Kotlin/Compose, CameraX, Media3), building an **audio scoring engine** that runs a second **AudioRecord** stream alongside CameraX capture (one RMS float per 50ms frame, ~2.4KB/round) to rank moments by room-relative energy without re-decoding video; rewrote its decode fallback non-blocking, **6.3s to 3.7s** per 30s of audio.
- Owned video and graphics work across both apps: a **WebGL filter-test harness** with a **.cube** 3D-LUT parser and custom fragment shader running at **60fps**, so filters could be iterated on without cutting a mobile build, plus a Compose Stories-style clip viewer on a continuously-buffered ExoPlayer playlist.

PROJECTS

NextWeeb | *React, TypeScript, TailwindCSS, Django, MyAnimeList API*

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

- Engineered a **content-based recommendation system** that analyzes a user's full anime watch history (**1000+ entries**) and ranks **500 fetched candidates** by multi-factor similarity (genre, themes, score proximity, popularity), filtering watched titles and regex-detecting sequels.
- Implemented secure authentication using **OAuth 2.0 PKCE**, migrated from session cookies to **stateless JWT auth**, and designed **15+ REST API endpoints** with protected routes and relational data models powering personalized dashboards.

Supernote | *Next.js, TypeScript, Express, MongoDB, LangChain, Clerk Auth*

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

- Architected an **AI-driven ideation workflow** that transforms raw startup ideas into structured, multi-stage project plans covering market research, monetization, scalability, and technical complexity.
- Implemented **LangChain orchestration** with vector embeddings and structured prompt pipelines to generate context-aware node suggestions across an interactive **graph-based visualization system** with real-time editing, backed by a modular MVC backend.

ACHIEVEMENTS & LEADERSHIP

- Game Development Lead — GDG on Campus, HITK:** Hosted an auditorium event on breaking into game development, opening with a competitive play session of self-published games and covering game jams, shipping on itch.io, and the indie dev community, closing with a hands-on Unity walkthrough.
- 1st Place — TechTrix Software Development Hackathon 2025:** Won overall by building Synapse, an AI-powered React Native learning app, iterating live on judge feedback during finals.
- Top 3 — Blockchain Track, Hacksagon 2025 and Best Beginner Team — HackForge:** the latter for a 12-hour build of an emergency response system spanning **2 mobile apps and 1 web platform**.

EDUCATION

Heritage Institute of Technology

2028

Bachelor of Technology in Computer Science and Business System

YGPA: 8.77