Loke Kum Yew

Full-Stack Engineer & AI Systems Architect

Specialising in Scalable Web Platforms & AI-Augmented Development

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Career Interest

Full-Stack Engineer with First-Class Honours and a specialisation in **AI-augmented development workflows**. I partner with startups and enterprises to architect and deliver robust web platforms and cloud infrastructure. Expert in **stabilising fragile legacy web platforms** and accelerating product velocity. Extended expertise in building high-performance **offline-first mobile architectures**. Proven track record of delivering high-stakes projects, from bespoke enterprise event systems to venture-backed SaaS acceleration.

Technical Skills

- **Web Development (Primary):** TypeScript, React, Next.js, Node.js, Python, Tailwind CSS, PHP.
- **Cloud & Infrastructure:** AWS (Lambda, Cognito, S3, CloudFront), Supabase (PostgreSQL/RLS), MongoDB.
- **Mobile Development:** React Native (Expo), Offline-First Architecture (WatermelonDB/SQLite).
- **AI Integration:** Prompt Engineering, AI-driven development (Cursor, Cline, *GitHub Copilot*).
- **Tools & DevOps:** CI/CD (GitHub Actions), Docker, Vercel, Linear, Figma.

Professional Experience

Principal Software Consultant | Loke Software
June 2024 – Present | Remote (Based in Bangkok/Singapore)

Strategic technical partner for international startups and enterprises. Manage a high-stakes portfolio of engagements focused on system stabilization, cloud architecture, and offline-first mobile development.

Venture-Backed Travel SaaS (USA) | Lead Web Engineer
- **Infrastructure & Security:** Spearheaded forensic audit and remediated vulnerabilities via refactored **AWS Lambda** and **Cognito** auth flows.
- **Modernization:** Led **Node 20** migration and standardized **CI/CD** environment management to ensure 99.9% production uptime.
- **Systems Architecture:** Re-engineered payment and registration modules for high-concurrency traffic and complex multi-role permissions.
- **Process Leadership:** Implemented automated **GitHub Actions** and formal QA protocols to mitigate technical debt and increase velocity.

Enterprise Event Technology (Singapore) | Systems Architect
- **Multi-tenant Platform:** Architected greenfield SaaS using **Next.js** and **Supabase** with secure data isolation and dynamic schemas.
- **Cross-Platform Desktop:** Developed custom **Windows & Mac** applications featuring local MySQL persistence for 100% offline event reliability.
- **Hybrid Integration:** Engineered a web-to-hardware bridge for industrial **UV Printing Kiosks** enabling merchandise customization via real-time API interactions.

Scientific Data Platform | Mobile Systems Architect
- **Local-First Persistence:** Developed a high-performance **React Native** application using WatermelonDB (SQLite) for 100% offline functionality.
- **Data Engineering:** Designed a custom pull-only sync engine to orchestrate large-scale data and media transfers from **Supabase**.

AI SaaS Platform | Prompt Architecture
- **Technical Audit:** Conducted forensic audits of the generation platform, identifying systemic architectural flaws and data bottlenecks hindering product scalability.
- **Reasoning Engineering:** Architected V2 prompt reasoning chains and structured output schemas to ensure deterministic model behavior and minimize LLM hallucination.

Selected Web Projects

Interactive SG60 Magic Ball | Next.js & Supabase
- Engineered a high-performance dynamic UI with complex CSS-driven holographic projections.
- Architected a serverless backend with Row Level Security (RLS) for enterprise-grade data protection.
- [[Live Site]](#) | [[GitHub]](#)

Email Verification SaaS Engine | Python & Redis
- Designed a cost-optimized, multi-stage email validation engine using **Redis caching** to minimize paid API usage, resulting in a **36% reduction in operational costs**.

Education

Nanyang Technological University (NTU) | *Singapore*
Bachelor of Engineering (Mechanical & Mechatronics)
- **Honours:** First Class Honours (Distinction), GPA: **4.91/5.00**
- **Engineering Foundation:** Strong foundation in logic, control systems, and complex system design.

Meta React Native Certification | *Coursera*
- Specialization in cross-platform mobile development and UI/UX implementation.
- [Certificate Link](#)