Loke Kum Yew

Full-Stack Developer (Web and Mobile)

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[Portfolio](#) | [LinkedIn](#) | [GitHub](#)

Career Interest

AI-driven Full-Stack Developer with a First-Class Honours engineering degree and a passion for building high-impact software. I specialize in leveraging AI-augmented workflows and proprietary development systems to build and scale applications with maximum efficiency. With demonstrated experience creating cost-optimized SaaS solutions and secure web platforms using React, Next.js, and TypeScript, I am seeking a challenging role where I can apply my engineering precision and unique development methodology to accelerate product velocity and deliver robust, high-quality software.

Skills

- *Languages: JavaScript, TypeScript, Python, C++, PHP, HTML/CSS*
- *Frameworks & Libraries: Next.js, React, React Native, Node.js, Express.js, Tailwind CSS*
- *Databases & BaaS: PostgreSQL, MySQL, MongoDB, Supabase, Firebase*
- *Tools & Platforms: Git, GitHub (CI/CD), Docker, Vercel, Render*
- *AI-Augmented Development: Prompt Engineering, GitHub Copilot, Cursor, Cline*
- *Design: Figma, Adobe Illustrator*

Projects

Thesis Publication in ICSR + BioMed 2024 Conference

- *"Personalised 3D Human Digital Twin with Soft-Body Feet for Walking Simulation"*, was published at the ICSR + BioMed 2024 Conference [Link to Paper]
- Enhanced human-robot interaction simulation, implemented soft-body physics to replicate human tissue, and improved modelling accuracy
- Utilised Python APIs, custom C++ scripting, and data visualisation, gaining skills in source control, testing, debugging, and team collaboration
- *Technologies: Python (NumPy, SciPy), C++, SOFA Framework*

Cluck Food App

- React Native mobile app for seamless menu discovery.
- UI/UX with wireframes, prototypes & user journey mapping.
- Meta React Native Specialisation Project [GitHub]

Tamagotchi-Inspired Pet App

- Web-based pet app where users care for a digital pet.
- Built with a React frontend for real-time updates and backend API with MongoDB to store pet and user data.
- Reference to the [GitHub repository](#) and [Live Demo](#)
- *Technologies: React, Node.js, Express.js, MongoDB, WebSockets, Vercel*

Education

Bachelor of Engineering: Mechanical Engineering

Specialisation in Robotics & Mechatronics

Nanyang Technological University | Aug 2020 - Jun 2024

First Class Honours (Distinction), 4.91/5.00

Meta React Native Certification

Meta React Native Specialisation

Meta & Coursera | Jun 2023 - Oct 2023

Experience

Freelance Full-Stack Developer | *June 2024 – Present*

Interactive SG60 Magic Ball Web Application

- Engineered a dynamic UI for a full-stack web application, featuring a **complex, purely CSS-driven holographic projection** and custom user interaction animations.
- Architected a **secure and scalable serverless backend using Supabase**, implementing **custom PostgreSQL functions (RPCs)** for atomic updates and **Row Level Security (RLS)** for data protection.
- Built **secure Next.js API Routes** to decouple the frontend from the database and established a **CI/CD pipeline with GitHub Actions** for automated testing and builds.
- [Live Site] | [GitHub]
- *Technologies: Next.js, TypeScript, Tailwind CSS, Supabase (PostgreSQL, RPCs), Vercel, Git, GitHub Actions*

Email Verification SaaS - GTM Tool

- Architected a cost-optimized, multi-stage email validation engine for a new SaaS product.
- **Leveraged AI framework to rapidly prototype and test multiple open-source tools**, leading to a 36% invalid email reduction in the initial filtering stage.
- Designed a proprietary caching and domain-list system to minimize paid API usage and maximize profitability.
- *Technologies: Python, Node.js, REST APIs, Redis*

Secure SaaS Frontend Template with Supabase & Next.js

- Developed a secure, full-stack application frontend as a template for future projects.
- **Utilized an AI-augmented development system to auto-generate boilerplate code, enforce type safety with TypeScript, and streamline the creation of responsive UI components.**
- Integrated a complete Supabase authentication system and an authenticated user portal.
- Implemented a PostgreSQL schema with Row Level Security (RLS) for data protection.
- Configured an automated CI/CD pipeline using GitHub Actions for quality assurance.
- *Technologies: Next.js, TypeScript, Tailwind CSS, shadcn/ui, Supabase (Auth, PostgreSQL), GitHub Actions (CI/CD)*

Wordpress Plugin Development for Role-Playing Game

- Developed custom **WordPress** plugins with **MySQL**, **AJAX**, and shortcodes for seamless integration.
- **Employed AI assistants for rapid generation of PHP/AJAX code snippets and for debugging complex interactions within the WordPress ecosystem.**
- Built drag-and-drop hierarchy management and interactive loot-drop systems.
- Designed **REST API** endpoints for efficient data retrieval and management, optimized database queries and implemented real-time UI updates.
- *Technologies: PHP, MySQL, JavaScript (AJAX), WordPress API, HTML/CSS*