

Abel Lee

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Summary

Full-stack software engineer experienced in building and deploying production systems across the AI/ML, web, and cloud infrastructure stack. Proficient in JavaScript/TypeScript, Python, and Go with hands-on expertise in React, Next.js, Node.js, FastAPI, and cloud services (AWS, Docker, Vercel). Strong track record of designing scalable architectures, optimizing performance, writing clean and testable code, and shipping features end-to-end in fast-paced startup environments.

Technical Skills

Languages: JavaScript, TypeScript, Python, Go, SQL, HTML, CSS
Frameworks: Next.js, React, Node.js, Express, FastAPI, Tailwind CSS, shadcn/ui, MobX
Databases: MongoDB, MySQL, SQLite, Firebase, Redis
Cloud & DevOps: AWS (EC2, S3, Lambda), Docker, Vercel, CI/CD, GitHub Actions
AI/ML & APIs: LLM Integration, OpenAI API, Speech-to-Text, Text-to-Speech, REST APIs, WebSockets
Tools & Testing: Git, Jest, FFmpeg, Puppeteer, Linux, Stripe API, NextAuth

Experience

Functional AI Partners

Feb 2026 – August 2026

Lead Product Engineer (Full Time)

Singapore

- Architected and built an AI voice emcee system for live webinars, designing the real-time pipeline orchestrating LLM inference, speech-to-text, text-to-speech, and telephony APIs with sub-second latency.
- Engineered fault-tolerant WebSocket connections and event-driven architecture to handle concurrent audience interactions during live events, ensuring 99%+ uptime during pilot demos.
- Implemented CI/CD pipelines and containerized deployment (Docker) to support rapid iteration and zero-downtime releases.

Functional AI Partners Pte. Ltd

Jun 2025 – Dec 2025

AI Solutions Engineer Intern

Singapore

- Developed real-time AI voice agents integrating LLMs, speech-to-text, text-to-speech, and telephony APIs, optimizing for low-latency (<500ms) conversational response times.
- Built and deployed full-stack AI prototypes (Next.js, FastAPI, MongoDB) that translated complex business requirements into production-ready systems, reducing solution validation cycles by ~30-40%.
- Wrote comprehensive unit and integration tests (Jest, pytest) to ensure reliability across API endpoints and frontend components.

Microsoft Learn Student Ambassador

2025 – Present

Student Ambassador

Singapore

- Led a growth campaign to drive student adoption of Microsoft Copilot, designing outreach initiatives and hands-on sessions that increased awareness and usage across the campus community.

Synscribe

Aug 2025 – Sep 2025

Full-Stack Developer Intern

Singapore

- Engineered SEO automation pipelines using Python and Next.js that programmatically generated and deployed search-optimized landing pages, reducing manual content production and deployment time by ~60%.
- Designed and implemented a modular LLM-powered content generation pipeline with configurable templates, rate limiting, and error handling for production reliability.

Truffle Technologies

Apr 2025 – Aug 2025

Software Engineer Intern

Singapore

- Built and optimized React (MobX) UI components and integrated REST APIs, improving frontend performance, reliability, and maintainability across core user flows.
- Debugged and resolved complex edge cases during UAT with stakeholders, writing regression tests and ensuring on-time production releases for multiple feature iterations.

MGG Software

Jun 2024 – Jun 2025

Software Engineer Intern

Singapore

- Architected and built an AI video automation pipeline using FFmpeg, Puppeteer, and LLM-based script generation, reducing manual video production time by ~80% through parallelized rendering and caching.
- Shipped a production full-stack platform with Next.js, MongoDB, Stripe, and NextAuth, implementing secure authentication flows, payment processing, and scalable content delivery with server-side rendering.

Selected Projects

Proof | Next.js, LLM, Video Pipeline, GitHub API

2026

- Built a pipeline that transforms any GitHub repository into a TikTok-style short-form video, automatically extracting the project's story and generating narrated, edited footage end-to-end; placed 2nd at Build2026 Hackathon.

SpillTeaLeh | Next.js, Three.js, LLM, WebGL, Gamification

2026

- Designed and built a gamified wellness web application with Three.js 3D rendering, LLM-powered narrative generation, and real-time GPS integration; placed 1st at Build For Impact 2026 Hackathon.
- Implemented performant client-side rendering with Three.js and WebGL, optimizing draw calls and asset loading for smooth 60fps mobile experiences.

FilterProof | Next.js, MongoDB, Chrome Extension, REST API

2025

- Built a Chrome extension (Manifest V3) and full-stack web application with Next.js API routes and MongoDB to capture job postings, parse structured data, and manage resume tailoring workflows end-to-end.

Education

Singapore University of Technology and Design (SUTD) <i>B.Sc. Computer Science and Design (Undergraduate Merit Scholarship)</i> - GPA: 4.9/5.0 (after S/U); 4.506/5.0 (before S/U) - Technology and Entrepreneurship Programme (STEP); awarded Baby Shark Fund seed grant for venture-building.	2025 – 2029 <i>Singapore</i>
Hwa Chong Institution <i>GCE A-Level (Hwa Chong Diploma with Merit)</i>	2021 – 2022 <i>Singapore</i>

Hackathons

Build For Impact 2026 – Overall 1st Placing
Microsoft Learn, Hack & Fun – Overall 1st Placing
Build2026 Hackathon – Overall 2nd Placing
PyConSG26 Hackathon – Top 3 Project
Dell InnovateDash Hackathon 2026 – Top 5
Manus AI For All 2026 – Finalist (Top 10)
UCWS Singapore Hackathon 2026 – Finalist (Top 20)

Awards and Leadership

Athletics: National Schools Record (A Division Long Jump, 2022); 4x National Schools Gold (Long Jump, High Jump).
Leadership: Led HCI CIP Council; mentored 10 service-learning groups and managed major community initiatives.
National Service: Best Soldier of the Month (BSOM).