Teoh Jia Jing

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*Backend and platform-focused software developer building **TypeScript systems, AI agent workflows, developer tooling, and edge/cloud sync infrastructure**. Former mechatronics engineer with experience leading **backend delivery, CI/CD, multi-tenant APIs, and offline-first applications**.*

PROFESSIONAL EXPERIENCE

Backend Team Lead — **Bangsar, Kuala Lumpur**
Studio Twenty Sdn. Bhd. — *Jul 2025-Present*

- Own **architecture decisions and backend code review**; established **CI/CD pipelines, Docker-based deployments**, and review workflows now used across projects.
- Mentor backend engineers and **drive hands-on delivery** on multi-tenant data isolation, **API design**, and **automation workflows**.
- Act as **technical point of contact** for clients - **gather requirements, translate business needs** into architecture proposals, and walk non-technical stakeholders through trade-offs and delivery decisions.

Backend Developer — **Bangsar, Kuala Lumpur**
Studio Twenty Sdn. Bhd. — *Mar 2024-Jul 2025*

- Built Malaysia's **E-Invoice TypeScript SDK library** - document validation, digital signature, and **LHDN API integration**.
- Designed and shipped backend services and REST APIs with **NestJS, ElysiaJS, PostgreSQL, MongoDB**, **role-based access control**, and **multi-tenant data isolation**.
- Delivered content-managed client sites with **Next.js and PayloadCMS**, collaborating with designers on **AI-first prototyping** workflows.

Software Developer (Part Time) — **Batu Kawan, Penang**
ViTrox Agritech Sdn. Bhd. — *Jan 2024-Present*

- **Maintain and ship features** for a web application used across internal teams and customers.
- Built a **cross-platform desktop** data synchronization and automation tool with **offline-first data handling** and **background sync** to web applications.

EDUCATION

Universiti Tunku Abdul Rahman (UTAR) — **Cheras, Selangor**
Bachelor of Mechatronics Engineering with Honours, 1st Class Honours (CGPA: 3.73/4.0) — *Jan 2024*

National Taipei University of Technology (NTUT) — **Taipei, Taiwan**
The New Southbound Policy Elite Study Program — *Jan 2023*

SKILLS

Languages: TypeScript, JavaScript, Python, Rust, SQL
Frontend: Vue, React, Next.js, Nuxt.js, Expo, Tailwind, Three.js
Backend: NestJS, ElysiaJS, Hono, Mastra, RESTful API
Databases: PostgreSQL, SQLite, Redis, MongoDB
Infrastructure & DevOps: Docker, GitHub Actions, Nginx/Caddy, Terraform
Tools & Practices: Tauri, MQTT, Vitest, Playwright, Monorepo, TDD
AI Coding Workflows: Codex, Claude Code, agentic development workflows

PROJECTS

AI Trading Copilot | AI / Trading Systems

Self-hosted market research and trading workstation where an AI chat can call broker tools, stream market charts, mutate moomoo watchlists, read positions, and run a **LangGraph TradingAgents research pipeline** with analyst, debate, risk, and portfolio-manager roles persisted to Postgres. ***Tech: Nuxt, FastAPI, LangGraph, PostgreSQL, Docker, Moomoo OpenD.***

E-Invoicing SDK | Open Source

Published npm package for Malaysian e-invoicing. XML/JSON signing, certificate handling, **per-endpoint sliding-window rate limiting**, and multi-tenant support. ***Tech: Node.js, Vitest.***

Edge Device Sync Engine | IoT Platform

Offline-first bidirectional sync between IoT field devices and cloud. Conflict-resolution engine on **ElectricSQL** with custom debounced watchers; reliable operation even with low-quality network connections. ***Tech: Tauri, SQLite, MQTT.***

Hospitality Management Platform | Enterprise Platform

Unified PMS, **Electron**-based POS, and e-invoicing portal on a typed monorepo with real-time **WebSocket**-driven order management. ***Tech: Next.js, NestJS, Electron.***

ReproJS - Embeddable Feedback SDK | Open Source

Framework-agnostic bug-report widget with annotated screenshots, 30-second session replay, and a self-hostable **Nuxt triage dashboard**. Open source and **Docker**-deployable end-to-end. ***Tech: Preact, Nuxt, Better Auth, Docker.***

Enterprise B2B Survey Platform

B2B assessment platform with **organization-scoped RBAC, dual-database architecture** (PostgreSQL for transactions, TimescaleDB for audit/metrics), and **Terraform**-provisioned AWS infrastructure. Hardened with **k6 load testing** and **Playwright e2e** suites in CI. ***Tech: Next.js, ElysiaJS, Drizzle, Better Auth, Terraform.***

AI Trip Planner

AI-assisted itinerary builder that converts user intents into structured day plans through a **Mastra agent (Google Gemini + Vercel AI SDK)**, with every suggested place validated against **Google Places API** to eliminate LLM hallucinations. Includes collaborative trip editing with **role-based voting, encrypted passport/reservation storage**, and a **Three.js** visited-countries globe. ***Tech: Nuxt, Mastra, Drizzle, Better Auth, Three.js, Neon PostgreSQL.***

AWARDS

- IEEE Innovation Malaysia 2nd Runner Up, working on a vein finder device.
- DBSnubiz Global Startup 2nd Runner Up, working on a vein finder device startup competition in South Korea.
- Greatech Award for Innovative Excellence Bronze Award, for the design of automated assembly machine.