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Three shipped products, each built solo. My work is about making large language models into something that can be trusted: retrieval-augmented generation so the output is traceable, self-hosted inference so sensitive data stays put, and machine learning for the forecasting an LLM is bad at — plus all the backend, mobile and payment infrastructure underneath.

I care about evaluation method, privacy design, and the failure cases most people skip.

Projects

HeartBox — AI mood-journaling platform (RAG + emotion forecasting)

Solo developer · Capstone · heartbox.tw · [source](#)

A mental-health platform built end to end — ML, backend, frontend, mobile and infrastructure. **Live at heartbox.tw, sign in with test1 / test1, no registration.** Stored entries and charts all work; live AI generation needs the self-hosted inference service, which is not currently exposed — email me to arrange a walkthrough.

RAG pipeline

BGE-M3 embeddings over a ChromaDB store built from seven clinical sources (WHO, APA, NHS, NIMH). Retrieval fires when sentiment falls below -0.4 , returns the top-3 passages, and the model must cite them — so advice is traceable rather than invented.

Random Forest forecasting

53 features (12 metrics $\times$ 4 lag windows, plus 5 calendar features). 5-fold CV: MAE 0.22 on sentiment and 1.04 on stress (22,796 rows); AUC 0.948 with 88% recall on high-stress days (31,720 rows), deliberately tuned for recall because a missed warning costs more than a false alarm.

Model selection

Compared linear regression, a decision tree, Random Forest, XGBoost and an LSTM on data requirements, interpretability, inference cost and overfitting risk. Random Forest was the only one that trains on a few hundred rows, predicts in under 50 ms on CPU, and explains itself.

Self-hosted inference

Open-weight Qwen2.5-7B-Instruct on my own GPU behind FastAPI and a Cloudflare Tunnel, so journal text never leaves a controlled environment.

Privacy and safety

Journals are Fernet-encrypted (AES-128-CBC + HMAC-SHA256) with keys held apart from the database, plus 2FA. Three-step separated consent per GDPR Art. 7, where refusing AI-training use costs no functionality, and parental verification for ages 13–17. Crisis-keyword detection surfaces national helplines.

Also delivered: PHQ-9 / GAD-7 assessments and an Android build via Capacitor.

LapseWatch — Subscription renewal reminders

Solo developer · Jun 2026 – present · [lapsewatch.smallworks.app](#)

- Notifies **before** a subscription auto-renews, over LINE, email and desktop, with Google Calendar sync and CSV / JSON export.
- A Chrome extension that detects subscriptions while reading **only a narrow window of text around a matched keyword**, to bound what it can see.
- Integrated recurring subscription billing and statutory e-invoicing (ECPay, Taiwan's e-invoice system).
- Privacy-first: no bank-account linking, no cross-site tracking.

PantryKeeper — Shared household inventory tracker

Solo developer · Jun 2026 – present · [pantrykeeper.net](#)

- Multi-user inventory and expiry tracking with per-member permissions, offline support and waste statistics.
- A bulk import parser that accepts free-form data pasted from Notion, Excel or Google Sheets and infers quantity and unit from it.

Skills

Languages	Python, JavaScript, TypeScript, SQL, HTML, CSS
AI / ML	RAG, LangChain, ChromaDB, BGE-M3, scikit-learn, Random Forest
Backend	Django, Django REST Framework, Django Channels, FastAPI, PostgreSQL
Frontend	React, Vite, Tailwind CSS, Recharts, Chrome extensions
Infrastructure	Google Cloud Run, Cloudflare Pages and Tunnel, Capacitor, Git, CI/CD
Security	Fernet / AES encryption, JWT, 2FA, GDPR and Taiwan PDPA consent
Integrations	ECPay payments and e-invoicing, LINE Messaging, Google Calendar
Spoken	Mandarin Chinese (native), English (professional reading and writing)

Education

National Chin-Yi University of Technology

M.S., Computer Science and Information Engineering · From September 2026 ·
Taichung, Taiwan

National Chin-Yi University of Technology

B.S., Computer Science and Information Engineering · September 2022 – June 2026 ·
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Capstone project: HeartBox (above)

Contact

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