

LE HOANG TRIET THONG

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EDUCATION

Swinburne University of Technology

Bachelor of Computer Science, Major in Artificial Intelligence

Sep 2022 – Oct 2026

Ho Chi Minh City, Vietnam

- Relevant coursework: AI for Engineering, Applied Machine Learning, Intelligent Systems, Introduction to AI, Data Science Principles, Foundations of Statistics, Cloud Computing.

AI Vietnam — AIO 2024 Specialised Programme

Data Science, Machine Learning and Deep Learning

Jan 2024 – May 2025

Online

- Completed an intensive specialised programme covering mathematics for AI, classical machine learning, deep learning and applied project work.

EXPERIENCE

AWS Study Group

AI/ML Ambassador

Jan 2025 – Present

Ho Chi Minh City, Vietnam

- Promote cloud literacy across the community by producing study material and briefings on current generative AI practice, including prompt engineering frameworks and prompt optimisation.
- Completed a structured series of hands-on labs across core AWS services, culminating in a capstone project integrating multiple services.
- Applied AI and generative AI within the AWS ecosystem, and contributed to workshops and community events.
- Served as photographer and media lead for technical events, producing visual assets used for community branding.

HIGHLIGHTED PROJECTS

Focus Mode App — AI-Augmented Productivity Platform

Nuxt 3, Supabase, AWS, ONNX

- Engineered a six-Lambda serverless AWS backend behind a guardrailed Amazon Bedrock agent (Claude Haiku 4.5) providing conversational task management through a four-operation action group.
- Deployed a quantised DistilBERT (ONNX INT8) emotion classifier packaged directly inside Lambda, removing any runtime dependency on external AI APIs and eliminating per-inference cost.
- Built the client as a cloud-native SPA (Nuxt, Vue 3, TypeScript, Pinia, Tailwind) over Supabase Postgres with Auth, Row-Level Security and pgvector — 13 routes and 20 versioned migrations.
- Implemented a retrieval-augmented recommender embedding curated media with Amazon Titan into pgvector, surfacing content matched to the user's post-session emotional state.
- Shipped on a fully pay-per-invocation stack with zero idle compute, routing every Lambda-to-database call through Supabase's REST API; hardened the agent against prompt injection with Bedrock Guardrails and in-Lambda ES256 JWT verification.

Automated Translation Assessment System (FCAJ)

Vue 3, Pinecone, AWS Bedrock, Lambda

- Developed a full-stack RAG-based evaluation tool that replaced the manual grading of English-to-Vietnamese AWS technical translations for FCAJ members with a fully automated internal workflow.
- Engineered a Pinecone vector store and multi-stage prompt chains over Amazon Bedrock to classify errors by type (grammar, terminology, tone, accuracy) and severity, returning a per-article score and suggested correction.
- Reduced operational cost to approximately \$15 per 1,000 assessments by migrating to an event-driven AWS serverless architecture behind API Gateway.
- Delivered a reviewer dashboard across 11 views with search, severity and status filters, aggregate error statistics, review notes and progress tracking; secured admin access with AWS Cognito (email plus OTP) via Amplify.

- Established the quality toolchain — Vitest unit tests, Cypress end-to-end tests, ESLint, oxlint and Prettier — and ran QA/QC on LLM outputs to raise detection precision.

5G Network Quality & Predictive MLOps Dashboard

Vue 3, FastAPI, SageMaker, Docker

- Engineered an end-to-end serverless MLOps pipeline processing 1.5M+ rows of raw 5G telemetry from 138 drive-test files, with AWS SageMaker Pipelines automating retraining on every admin upload.
- Benchmarked four forecasting models (XGBoost, CatBoost, Bidirectional LSTM, 1D CNN) for 12-hour throughput and latency prediction; CatBoost won at an average R^2 of 0.919.
- Compared K-Means against Gaussian Mixture clustering over a Winsorise $\rightarrow$ log1p $\rightarrow$ RobustScaler $\rightarrow$ PCA pipeline, selecting GMM at $k = 3$ (silhouette 0.419) for spatial coverage-quality segmentation.
- Built the data pipeline end to end — GPS validation, bounding-box filtering, outlier capping, 1-second resampling and 50+ engineered features on a temporal train/test split.
- Designed a near-zero-cost ($< \$0.50/\text{month}$) event-driven architecture by wrapping FastAPI with Mangum on Lambda from an ECR image, served through S3 + CloudFront with Origin Access Control to a secure interactive Vue 3 dashboard.

Reconnaise.ai — AI-Powered Software Vulnerability Detector

React, FastAPI, Docker, Cloudflare

- Developed a hybrid vulnerability detection engine combining static rule-based analysis with an ensemble of six machine learning models (Random Forest, XGBoost, LightGBM, Gradient Boosting, Logistic Regression, Naive Bayes) under weighted-vote aggregation.
- Achieved 98% detection accuracy ($F1 > 0.97$) after consolidating and balancing 47,858 samples from five public security corpora including DiverseVul and CVEfixes, vectorised with TF-IDF (3,000 features, 1–2 grams) on an 80/20 split.
- Detects SQL injection, cross-site scripting, command injection and path traversal, returning a verdict, confidence score, per-model breakdown and matched rule.
- Engineered the full stack — React (Material 3) frontend over a FastAPI backend, fully containerised with Docker Compose.
- Deployed the production build on a self-hosted mini-PC environment exposed securely via Cloudflare Tunnel.

Deployma — Online Grocery Delivery Platform (CoopMart)

Vue 3, Express 5, Supabase, Docker

- Developed a full-stack grocery delivery platform covering catalogue browsing, cart, checkout, promo codes and order tracking, backed by an Express 5 REST API over Supabase Postgres.
- Built a nine-module admin portal (products, categories, orders, stock, delivery slots, zones, stores, users) with live stock badges driven by Supabase realtime subscriptions.
- Enforced stock integrity end to end — cart validation blocks checkout when demand exceeds inventory — backed by Row-Level Security and 12 sequential migrations.
- Containerised both services with multi-stage Docker builds and Compose, securing the API with JWT verification and role-based route guards.
- TODO: name the modules you personally owned — team project.

ADDITIONAL PROJECTS

Data Analytics & Machine Learning

- EcoCharge EV Performance Dashboard — transformed charging data from 700+ EV users across 5 cities into an interactive dashboard; found evening sessions 23% more efficient than afternoon.
- OfficeWorld Sales Performance Dashboard — Power BI model merging 6 tables over 9,000+ transactions; identified a 15% negative margin in Furniture despite high volume.
- IBM Employee Attrition & Performance Analysis — end-to-end HR analytics in Python and Power BI identifying key attrition drivers and retention recommendations.
- Queensland Road Safety Analysis — cleaning and outlier capping in R, then five interactive Tableau dashboards exploring crash patterns and severity.
- Used Car Price Estimation for Eureka Motors — Linear Regression and Random Forest with one-hot encoding and standardisation, evaluated on R^2 , MAE and RMSE.

- Ho Chi Minh City Real Estate Analysis — market and price analysis of local property data.
- Predictive Model with Tax Revenue and Guest Nights — forecasting model linking tourism activity to tax revenue.
- Applied Predictive Analytics with Dead Stock — inventory analytics identifying slow-moving stock.
- Tea-Related Business Analysis — interactive Tableau dashboards for a beverage business.
- Koala Morphological and Demographic Analysis — statistical analysis of morphological and demographic data.

Web & Software Development

- Personal Portfolio Website — Vue.js and Nuxt 3 site deployed on Vercel with automated CI/CD builds, updated weekly.
- Media Storage Website with AWS — full-stack PHP application for secure image upload and retrieval on AWS (*course project*).
- Recruitment Website for HR — job posting and applicant management web application.
- Ice Cream Website — responsive HTML/CSS front-end for a small retail brand.
- Web Scraping Tool — automated extraction of Greek and Latin root-word etymology across 24 alphabetised Wikipedia pages into structured CSV.
- Snake Game — game prototype built using Amazon Q as an AI development assistant, applying prompt engineering across the development lifecycle.

LEADERSHIP & ACTIVITIES

ITea Lab

Jan 2025 – Jan 2026

Head of Media Department

Ho Chi Minh City, Vietnam

- Directed the lab's media and community engagement strategy across Facebook and LinkedIn, running a content plan focused on sharing academic knowledge and event recaps.
- Served as primary photographer and videographer for all lab events.

SMACK Vovinam Club

Mar 2023 – Aug 2024

Vice President; Head of HR Department; Head of Media Department

Ho Chi Minh City, Vietnam

- Co-led club operations across strategic planning, member activities and administration, and headed the HR department.
- Instructed Vovinam techniques as a specialist member, and acted as primary liaison with university administration for collaborative events.

CERTIFICATIONS

- **AWS Certified AI Practitioner** — Amazon Web Services, *July 2026*
- **AWS Certified Cloud Practitioner** — Amazon Web Services, *June 2026*
- **IELTS Academic** — Overall Band 7.0, *August 2026*
- **Doulingo English Test** — 110/160 *December 2022*

TECHNICAL SKILLS

AI & ML	Applied machine learning, generative AI (prompt engineering frameworks, RAG), LLM orchestration (AWS Bedrock), model QA/QC, vector databases (Pinecone, pgvector), scikit-learn, XGBoost, LightGBM, CatBoost, ONNX
Data Science	Python (pandas, NumPy, scikit-learn), R, SQL, feature engineering, exploratory data analysis, statistics, KNIME, SPSS
Cloud & DevOps	AWS (SageMaker Pipelines, Lambda, API Gateway, S3, Bedrock, DynamoDB, CloudFront, ECR, Cognito, EC2), Docker & Docker Compose, Cloudflare Tunnel, Git/GitHub, Vercel CI/CD
Databases	PostgreSQL, MySQL, Supabase
Frontend	Vue 3, Nuxt, React, TypeScript, JavaScript, PHP, Tailwind CSS
Visualisation	Tableau, Power BI, Excel (interactive dashboards), AWS QuickSight, Looker Studio