Gwenfred Tham Zhi Yee

AI & Computer Vision Engineer

Kuala Lumpur, Malaysia | gwenfredtham@gmail.com | 016-880 7829 | linkedin.com/in/gwenfred-tham-262545183 | github.com/Tofui03

EDUCATION

Asia Pacific University of Technology & Innovation (APU), Kuala Lumpur **Nov 2023 – Sep 2026**

Bachelor of Computer Science (Hons) in Artificial Intelligence

- Completed Sep 2026 (degree conferral Nov 2026)
- Relevant Coursework: Deep Learning, Computer Vision, Artificial Intelligence, Data Analysis with Python, Research Methods

EXPERIENCE

AI Data Labeling Intern, bits.ai **Jun 2025 – Oct 2025**

- Annotated traffic-light colour, shape and turn-direction attributes across 10,000+ image frames of computer vision training data, maintaining a 99% auditor pass rate.
- Applied documented labelling specifications and visibility rules to exclude unidentifiable signals, meeting a daily target of 10 video clips (supplied as image frames at 50 FPS).
- Collaborated with team leads and peers in continuous calibration sessions to resolve labelling ambiguities and align on annotation standards.

PROJECTS

DeepPCB-AOI: PCB Defect Inspection Platform **2026**

Personal Project | Python, Ultralytics YOLOv8, ONNX Runtime, OpenCV, FastAPI, pytest | github.com/Tofui03/DeepPCB-AOI

- Built a bare-board PCB optical inspection (AOI) system that compares each board with its golden template, detects 6 defect classes (open, short, mousebite, spur, spurious copper, pin-hole) and returns an auditable PASS / REWORK / SCRAP decision.
- Trained YOLOv8n on a 3-channel template + test + difference input: 0.940 F1 (0.901 precision, 0.983 recall) on the official 500-pair DeepPCB test set at IoU 0.33, vs 0.919 (single-image ablation) and 0.021 (hand-crafted baseline).
- Kept decisions rule-based: pixel-area limits as a stand-in for IPC-A-600 Class 2/3 tolerances, guardrails so opens and shorts never pass, and a line-halt on the 3rd repeat of a defect class in a batch; 87 passing pytest tests.

BJ-POS: Offline Point-of-Sale & Inventory System **2026**

Client Project (in-store rollout Nov 2026) | TypeScript, Vue 3, Pinia, Electron, SQLite, Vitest | github.com/Tofui03/BJ-POS

- Built to digitalize a small hardware store in Keningau, Sabah, replacing paper-based bookkeeping with an offline-first touchscreen till that gives real-time visibility of stock and sales.
- Made stock checking the core feature: each sale deducts stock in real time (unit, kg, ft or metre) without overselling, refunds and voids restore it, and an inventory view flags low- and out-of-stock items against an adjustable threshold.
- Covered the daily workflow: cash, card, QR, bank-transfer and contractor-credit (hutang) payments, thermal receipts, A4 delivery orders, and Close Day reconciliation of gross sales, money received and drawer cash, exported to Excel and backed up to Google Drive.
- Stored money as integer cents and quantities as milli-units to avoid rounding errors, and serialized database writes through one IPC queue so transactions never interleave; tested with Vitest.

Shipping Document Verification Platform (SDOC) **2026**

Hackathon Project | Python, FastAPI, Pydantic, React, pandas, pytest | github.com/Tofui03/sdoc-shipping-verification

- Developed and deployed on Render a FastAPI audit platform with a React web console that checks Shipping Instructions against draft Bills of Lading, using an LLM for email intent classification and OCR.
- Kept all 7 shipment field comparisons deterministic with MATCH / MISMATCH / NEEDS_REVIEW outcomes, retaining source evidence; reviewer corrections trigger revision checks and automatic re-comparison.
- Validated document extraction and data-transformation workflows with 307 passing pytest tests, using pandas v2 to structure test data.

SKILLS

Languages: Python, TypeScript, SQL, C++, Java, Bash

ML & Computer Vision: PyTorch, Torchvision, Ultralytics YOLOv8, OpenCV, scikit-learn, Hugging Face, ONNX Runtime, transfer learning, image classification, image annotation

Backend & Tools: FastAPI, Pydantic, React, Vue 3, Electron, SQLite, REST APIs, Gradio, Streamlit, pandas, NumPy, pytest, CUDA, Git, Docker, Linux/WSL

CERTIFICATIONS & LANGUAGES

Certification: Microsoft Generative AI for Beginners (course)

Languages: English, Malay, Mandarin