

HAOLU MA

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SUMMARY

Self-taught full-stack/AI developer and UoA Master of Information Technology student (Feb 2025–Mar 2026) with solid **AWS cloud** and **networking** foundations (VPC/subnets/security groups; TCP/IP/DNS/HTTP/TLS). Built and operated on EC2, S3, RDS, Lambda, SQS, CloudFront, and ECS/ALB with Docker and CI/CD. Delivered an LLM-powered room-IoT platform and a 50k-SKU WooCommerce automation; maintainer of an OSS project (~740★, 47k+ downloads). **AWS Solutions Architect – Professional**. Available for full-time from **Nov 2025** (as an internship); expected graduation in **Mar 2026**.

SKILLS

Programming Languages: Python, JavaScript/TypeScript, Go, Java, PHP; SQL; Bash

Web & APIs: HTML, CSS, React, Node.js (Express), Python (FastAPI, Django); Java (Spring Boot), RESTful APIs

Cloud & DevOps: AWS (EC2, VPC, S3, ELB/ALB, RDS, Route53, IAM, Lambda, SQS, CloudFront, ECS/ECR, CloudWatch, Lightsail), Azure; Docker; CI/CD (TeamCity, GitHub Actions); Ansible; Linux; Nginx

Data & Storage: MySQL, Redis; Amazon DocumentDB/MongoDB

AI / ML & DS: LLM integration & fine-tuning; OpenCV; PyTorch, TensorFlow; Pandas, NumPy; SPSS

Practices: Agile/Scrum (YouTrack); Testing (pytest/unitest/Jest); Version Control (Git/GitHub/Gitea)

Certifications:

AWS Certified Solutions Architect – Professional

OceanBase Version V2 Certification

WORK EXPERIENCE

Merchant Marco Hotel — Software & AI Engineer Intern | Hangzhou, China

Aug 2024 – Feb 2025

Working as a team for a room-IoT platform and LLM assistant (function calling) with React, Python (Django), and MySQL.

- **Designed for scale:** ~300 rooms × 10 devices/room (~3,000 devices) with role-based control and telemetry. Connected with PMS that can automatically execute operations.
- **Database design & modelling:** Designed the relational schema for rooms, devices, scenes, schedules, telemetry and audit, with constraints and indexing; authored migrations and validation rules.
- **Backend architecture & implementation:** Built a Django-based service exposing device-control and telemetry APIs; implemented background jobs for command dispatch/retry, role-based access, environment configs, and logging/monitoring hooks.
- **TCP device protocol (co-designed with hardware team):** Specified and implemented a TCP-based protocol including packet framing, keep-alive and retry/back-off; ensured idempotent commands and capability mapping from devices to APIs.
- **Frontend implementation:** Delivered a React console for room/device management, scene presets and policy scheduling, with form validation, admin permissions and usage logs.
- **LLM assistant:** natural-language scenes and tips routed to IoT APIs via function calling.

K Square Tech — Customer Support & Software Engineer Intern | Hamilton, NZ

Feb 2024 – Jul 2024

Handled frontline support and webshop upkeep; built an internal automation tool solo after spotting heavy manual catalogue work (>50k SKUs).

- **Core function:** Built a Python program to import multiple suppliers' data formats into WooCommerce (GUI, schema validation, retries); achieved 100% success on full-refresh imports; saved ~10 hrs/week in the partial-catalogue phase; projected to avoid up to ~80 hrs/week at full-catalogue coverage (~50k SKUs).
- **Classification:** LLM-assisted product mapping ≥98% accuracy with rare fallback to "Uncategorised".
- **Freshness:** Scheduled cron-based syncs from vendor websites/data sources.

- **GUI:** Developed a React admin console enabling non-technical staff to self-serve vendor feeds and trigger product updates when new vendor data arrives via email.
- **CI/CD & project management:** Set up TeamCity pipelines (lint → test → build) that produce Docker images and auto-deploy to an AWS Lightsail server on green builds; ran Agile sprints in YouTrack (backlog, boards, burndown).
- **Ops hygiene:** docs/runbooks for non-technical staff; reduced manual steps and interruptions.

PROJECTS

Skillnex — AI Talent-Matching Platform (UoA course project)

2025

AI-driven, interactive digital CV & matching platform built as containerised microservices (React/TypeScript client, Node.js/Express REST backend, Python AI service), deployed with AWS (CloudFront, S3, ECS/ALB, SQS, Lambda, DocumentDB).

- **Implemented two AI agents:** CV generation (PDF + GitHub mining to strict JSON) and job-candidate matching (RAG + LLM scoring/rationales/tags) via OpenAI and DashScope API.
- **Testing & CI/CD:** unit/integration/E2E (Jest/Supertest/Postman); GitHub Actions for CI/CD; containerised builds and artefact publishing.
- **Project management:** Agile/Scrum (weekly sprints, stand-ups, reviews/retros); YouTrack for backlog, epics, sprint boards and burndown; release notes & issue templates for traceability.

Air-Universe — Open-source Maintainer (Go)

2021 - 2022

Open source multi-protocol proxy middleware that integrates multiple proxy backends with proxy panels.

- Sole maintainer, wrote and maintained nearly all of the code (~99%), designing core architecture and features with documents and install scripts.
- Implemented node self-registration, user management, rate limiting, TLS auto-provisioning, and traffic analytics; packaged with Docker; CI/CD with GitHub Actions; comprehensive documentation wiki.
- ~740 **stars**; ~230 **forks**; 47k+ release downloads; 10k+ Docker pulls.
- Automated deployment & ops with Ansible across 20+ nodes to deploy Air-Universe and monitor runtime state (implemented by Go, closed-source).

GO GAME STONE POSITION RECOGNITION

2022

- Built an OpenCV + TensorFlow pipeline to detect board gridlines, align perspective, and classify black/white stones; added denoise and glare-handling steps for indoor lighting.
- Implemented post-processing to snap detections to intersections and to resolve small overlaps; exported moves as CSV and overlaid results for visual QA.

OBJECT TRAJECTORY TRACKING SYSTEM

2021

- Team lead and lead researcher; recognised as the lab's flagship project in 2021.
- Used CNN with TensorFlow to detect objects while designing algorithms to track target objects frame by frame.

EDUCATION

University of Auckland | Master of Information Technology | New Zealand

Feb 2025 - Mar 2026

Waikato Institute of Technology | Bachelor of Applied Information Technology | New Zealand

Jul 2023 - Jul 2024

Jinhua University of Vocational Technology | Diploma of Computer Networking | China

Sept 2019 - Jun 2022