

Han Tang Lin

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Summary

Backend engineer with 3 years on production Python services, now technical lead on a **FastAPI** and **PostgreSQL** platform architected end to end — 195 REST endpoints, **over 1M requests a month at a 0.005% error rate** with a 39 ms median. Most useful where a live system is quietly wrong under concurrency: restored **exact-once** execution to a job silently running 3x, moved a 37-second reconciliation off the request path behind a Postgres advisory lock (**p99 39.2s to 1.0s**), closed an **authentication bypass**, and shut down a retry loop amplifying traffic **418x**. Former astrophysicist — M.Sc., two first-author papers.

Experience

Pacston

Taipei, Taiwan

BACKEND SUPERVISOR

Jun. 2025 – Present

- Architected a greenfield document-automation platform end to end in **FastAPI** and **PostgreSQL** — 87% of its commits, 90% of 44K production lines — now serving **over 1M requests a month at a 0.005% error rate** with a 39 ms median across 195 REST endpoints over 44 relational tables.
- Made a 37-second synchronous reconciliation **concurrency-safe and asynchronous** behind a **Postgres advisory lock**, cutting platform **p99 latency from 39.2s to 1.0s (-97%)** and slow requests from **880 to 19 per day** — verified on matched pre/post-deploy windows.
- Traced a **3x duplicate execution** of a scheduled job to a trigger timeout colliding with AWS default async retries and restored **exact-once** scheduling; separately found a job **silently dead for 29 days** behind a production-only hostname typo.
- Closed an **authentication bypass** that accepted any forged or expired token — the service was reading unverified JWT claims — shipping full signature and expiry verification; telemetry confirmed 1,006 expired tokens rejected in the first week.
- On the legacy serverless platform (**3.9M API requests and 34.9M Lambda invocations a month**), cut the primary API's mean duration **48%**, took a core endpoint from **244 queries/2.6s to 3 queries/210 ms**, reduced cold-start init **23%**, and shut down a retry loop amplifying 43K requests into **18M invocations** — half of all Lambda spend.
- **Merged 100 pull requests integrating 2,392 commits from 8 engineers**; introduced the team's first CI quality gate, its **uv** and **ruff** toolchain, and its engineering documentation and mentoring curriculum.

Pacston

Taipei, Taiwan

BACKEND ENGINEER

Aug. 2023 – May. 2025

- Top contributor of 11 engineers on a 207K-line **AWS Chalice serverless** platform automating U.S. employment-based immigration petitions — **27% of all surviving code** across **352 delivered tickets**, including its 31K-line data-model layer over **125 relational tables** and 579 typed schemas.
- Designed a real-time messaging backend on **API Gateway WebSockets** and **DynamoDB** with Cognito-authenticated handshakes, a reverse-lookup GSI and TTL expiry — now carrying **1.8M message invocations a week**.
- Architected a bibliometric **ETL** over the public OpenAlex dataset, sharding citation records across **100 partitioned MySQL tables** with manifest-driven incremental syncs and thread-pooled ingestion.

National Central University

Taoyuan, Taiwan

RESEARCH ASSISTANT

Sep. 2021 – Jun. 2023

- Built **ETL** pipelines in **Django** to reduce astrophysical time-series data, and a Target and Observation Management platform still in use at Lulin Observatory.
- Researched Type Ia supernova host environments; **first author** in *MNRAS*.

Skills

Languages Python, SQL, TypeScript

Backend FastAPI, Django, AWS Chalice, SQLAlchemy, Pydantic, REST API design, WebSockets

Distributed & Reliability Idempotency, exact-once scheduling, advisory locks, retry/backoff design, root-cause analysis

Data PostgreSQL, MySQL, DynamoDB, Elasticsearch, schema design, table partitioning, query optimisation

AWS Lambda, API Gateway (REST & WebSockets), Cognito, S3, EventBridge, App Runner, Aurora, CloudWatch

DevOps & AI Docker, Bitbucket Pipelines, GitHub Actions, uv, ruff, pytest; OpenAI & Anthropic APIs

Spoken Chinese (native), English (IELTS 7.5), French, Japanese

Education

Institute of Astronomy, National Central University

Taoyuan, Taiwan

M.Sc. IN ASTRONOMY

Sep. 2019 – June. 2021

Physics Department, National Sun Yat-sen University

Kaohsiung, Taiwan

B.Sc. IN PHYSICS

Sep. 2015 – June. 2019