Hsu, Chun-Yuan

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About Me

As a Master of Data Science student at the University of Michigan, I draw on a diverse academic background that includes an M.S. in Computer Science and a B.S. in Civil Engineering. My internship at QNAP strengthened my practical experience in software development, database design, distributed systems, and AI applications. Driven by a passion for AI and machine learning, I will deepen my expertise this coming semester through advanced coursework, laboratory research, and hands-on projects.

Education

Master of Data Science, University of Michigan – Ann Arbor, MI, USA — Sep 2025–Present

MS in Computer Science, National Tsing Hua University – Hsinchu, Taiwan — Sep 2022–Jan 2025
  Thesis: Quantum Event Identification and Learning Procedures

BS in Civil Engineering, National Cheng Kung University – Tainan, Taiwan — Sep 2018–Jun 2022

Skills

Languages: Python, C++, Go, SQL, Bash

Developer Tools: Docker, Kubernetes, GitLab CI, NATS, Non-Relational Databases, Relational Databases, Message Queue

Experience

Internship, QNAP — Jan 2025 – Jul 2025

- Developed a semantic search service for Jira issues using text embeddings (ChromaDB) and integrated AWS Bedrock LLM to generate resolution suggestions.
- Engineered an MCP server for the Jira search service, enabling developers to query issues information via coding IDE.
- Migrated the Konnyaku translation management website from Python 2 to Python 3 and deployed it on Kubernetes.
- Migrated the Device Avatar APIs service from Python to Go for improved performance and deployed it on Kubernetes; implemented token-based authentication and unit tests.
- Contributed to database benchmark tests comparing MongoDB and Couchbase to inform technology selection for data-intensive applications.
- Diagnosed and resolved a DDNS worker failure issue during RabbitMQ scaling period.
- Pointed out and resolved a memory leak issue in cloud product by first inspecting Grafana metric and then tracing code.
- Resolved NATS message production failures during AWS spot instance scaling by reconfiguring NATS server replicas.

Projects

Jira-Issue-Search — ⭕ Jira-Issue-Search

Issue-Search-MCP — ⭕ Issue-Search-MCP

File-Translator — ⭕ file-translator
Developed a tool using LLM API to translate English PDF documents into Traditional Chinese, preserving the original format.

AZtec-Image-Comparison — ⭕ AZtec-image-comparison
Developed a tool to compare pole figure images from AZtec software, analyzing overlapping patterns in crystallographic orientations.

MIPS-CPU-Architecture [Course Work] — ⭕ MIPS-CPU-Architecture
Constructed a MIPS CPU architecture from the ground up using Verilog.

OS-Nachos [Course Work] — ⭕ OS-Nachos
Implemented and documented core OS concepts including system calls, multiprogramming, virtual memory, and file systems using the Nachos instructional OS.

Advanced-Compiler [Course Work] — ⭕ Advanced-Compiler
Developed a series of compiler projects for an advanced compilers course, implementing features such as data-flow analysis and optimizations using the LLVM framework.