Hsu, Chun-Yuan

⌨ My Portfolio | ✉ chyhsu@umich.edu | ⓖ Chyhsu | ⓛ Chun-Yuan Hsu

Professional Summary

Aspiring Backend Engineer with a strong foundation in software development and database applications, gained through a Master's in Computer Science and a hands-on internship at QNAP. Successfully developed a semantic search service and migrated APIs to Go, enhancing performance by 30%. Eager to leverage technical expertise in distributed systems and cloud technologies to contribute to backend engineering 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, TypeScript, Bash Script, Verilog

Frameworks: Node.js, React

Cloud Platform: Google Cloud Platform, AWS

Developer Tools: Docker, Docker Compose, Kubernetes, GitLab CI/CD, NATS, Jira, Git, Sprint/Scrum

System: Linux(Debian, Arch), Mac, Windows

Database: MongoDB, Couchbase, ChromaDB, SQLite, PostgreSQL

Experience

Backend R&D Internship, QNAP, Taiwan   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, enhancing developer productivity by 50%.
- Engineered an MCP server for the Jira search service, enabling developers to query issues information via coding IDE.
- Migrated the Device Avatar APIs service from Python to Go for improved performance by 30% 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.
- 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

VizThinker   ⓖ VizThinker

Built and deployed a desktop AI chatbot on GCP using ReactFlow that integrates LLM API to visualize conversations as dynamic, node-linked graph structures for idea exploration.

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.