

CHAO-YEN HUANG

+886 975218935 | chaoyen510220@gmail.com | Taipei City, Taiwan

Software Engineer with 2 years of experience building real-time data systems and AI agents for smart city applications. Delivered production solutions for government clients including Taipei City Government and Kaohsiung Bus, spanning fleet monitoring, transportation APIs, and self-service analytics platforms.

Work Experiences

Foxconn | Taipei, Taiwan | Software Engineer Jan. 2024 – Present

- LLM agent quality assurance: Designed evaluation framework for text-to-SQL agent assessing tool usage correctness, execution order, and LLM-as-judge scoring; **created 50-question benchmark with golden SQL on road safety dataset, improving agent accuracy from 51% to 89% and pass@10 from 57% to 98%, enabling team to systematically debug system prompts and MCP configurations.**
- Self-service analytics for domain partners: **Built GenBI agent on internal AI platform integrating text-to-SQL agent, MCP servers (metadata retrieval + query execution) with Apache ECharts visualization**, eliminating back-and-forth communication cycles and enabling non-technical partners to generate BI reports in minutes instead of days.
- EV fleet monitoring and compliance: Partnered with Kaohsiung Bus to build end-to-end analytics for 33 electric buses, architected **streaming pipeline using Kafka, Apache Flink, ingesting Controller Area Network data and e-ticket ridership data into Delta Lake, developed Grafana dashboards tracking per-bus mileage, trips, and routes against government subsidy requirements**; insights helped operations team **improve fleet compliance rate from 48% (16/33) to 72.7% (24/33).**
- Government transportation analytics: **Delivered 5 monthly analytical reports for Taipei City Government analyzing bike-share station performance (empty/full rates, weather impact, demographic patterns, origin-destination flows)**; recommendations identified top 50 stations for dock expansion, directly informing city infrastructure planning decisions.
- API performance optimization: **Implemented Redis caching layer (Azure Managed Redis with RedisStack modules) for city transportation API serving iBus+ mobile app**; validated with **k6 load testing**, achieving **3× RPS improvement while maintaining p99 latency under 1 second.**

YouBike | Taipei, Taiwan | Software Engineer Intern Mar. 2023 – Jul. 2023

- Developed a preliminary solution for the capacity vehicle routing problem: Using linear programming (**Gurobi**) to improve the efficiency of inventory rebalancing in the bike-sharing system. The model could reduce 4% of the total dispatch time on a 6-month and one-tenth of total stations number historical dataset.

Technical Skills

Python | Databricks | SQL | Pyspark | Apache Airflow | Apache Flink | Grafana | Redis | Kubernetes | Docker | Git

Education

National Sun Yat-Sen University | Kaohsiung, Taiwan | BSc. Computer Science and Engineering Sep. 2019 - Jun. 2023

- Received Undergraduate Research Fellowship from the National Science and Technology Council

Certification

Certified Kubernetes Application Developer (CKAD) Issued Jul. 2025

Publication

Bo-Han Chen., Yun-Ye Cai., Chao-Yen Huang*, & Chun-Wei Tsai. (2023). An Effective Evolutionary Neural Architecture Search for Bike-Sharing System Demand Prediction. 2023 IEEE Applied Sensing Conference (APSCON), 1–4.

- Devised a research plan with classmates to utilize genetic algorithms and simulated annealing to find the most efficient CNN-LSTM architecture for predicting the demand for the Bike-Sharing System.