Ming-Han **Huang**

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Education

New York University — *New York, U.S.A*

M.S. in Computer Science — *Sep. 2021 - present*

- Courses: Cloud Computing, Big Data, Database Systems, Distributed Systems, Computer Networking, Deep Learning

National Chiao Tung University — *HsinChu, Taiwan*

M.S. in Data Science and Engineering — *Sep. 2019 - Jul. 2021*

- **Academic Excellence Award** (Students among the 5%)
- Courses: Machine Learning, Data Mining, Data Visualization, Computer Vision, NLP, Operating System, Computer Organization

National Taiwan University — *Taipei, Taiwan*

B.S. in Mathematics — *Sep. 2014 - Jun. 2018*

- Courses: Data Structure and Algorithm, Discrete Mathematics, Linear Algebra, Human-Computer Interaction, Virtual Reality

Skills

Programming Python, Java, C/C++, Go, SQL, Shell Script, JavaScript, HTML, CSS, R, Groovy, Solidity, C#, Verilog, LaTeX

Tools GNU/Linux, Git, AWS, Docker, Kubernetes, Jenkins, Github Actions, Node.js, Django, REST APIs

ML/DL & Data Tensorflow, PyTorch, Keras, PySpark, Hadoop, MongoDB, Power BI, Tableau

Work Experience

***Software Engineering intern*, TuSimple** — *San Diego, CA*

Developer & Service Infrastructure, Continuous Integration (CI) Team — *May. 2022 - Aug. 2022*

- Designed, developed, and implemented a CI pipeline that **fully automated the building/testing processes** for engineers at TuSimple (~1000).
- Configured **container-based** Github Actions workflows utilizing **Docker** and executed scripts in **YAML, Shell and Python** scripts.
- Implemented a runner controller that **auto-scaled** the self-hosted runners on **Kubernetes** clusters to improve workflow efficiency.
- Led the project design, including requirement analysis, architecture design, and leading review meetings with senior engineers.

***Software Engineering R&D intern*, Microsoft** — *Taipei, Taiwan*

Cloud Hardware Infrastructure Engineering (CHIE), Reliability Team — *Jul. 2020 - Aug. 2021*

- Designed and developed high–performance scripts and parallel execution workflows for the **Azure Virtual Machine Series** node–level/rack–level reliability estimation, utilizing **PowerShell, Batch, and Python** scripts.
- Set up interactive dashboards holding **500M+ Azure server node records** for real-time server health inspection.
- Developed Power BI dashboards to audit **1M+ server logs** across **200+ Azure data centers** through Microsoft SQL server and Kusto
- Built **100% automated** project-tracking services for **20+ team members** with Python, SharePoint, Power Automate.

***Research Assistant*, National Taiwan University of Science and Technology, Game Lab** — *Taipei, Taiwan*

Project: automatic license plate recognition, Advisor: Prof. Wen-Kai Tai — *May. 2018 - Dec. 2018*

- Proposed to use **YOLOv3 and image processing** for automatic license plate recognition and flow count, result **98%up** accuracy.
- Integrated API from backend and maintaining code using **C++ and Python**.
- Designed a system for procedurally generating Pac-Man maze with specified difficulty [***IEEE GEM 2018***]

Projects

Online Ticketing System — *[Github] [DEMO]*

- Designed and developed a **full–stack** web application utilizing **Java Servlet**, enabling customers to order tickets simultaneously.
- Implemented **asynchronous communication** between **microservices**, including customers, orders, event hosts, and email notifications, through the use of **multi-threading** and **networking** techniques.
- Utilized **JDBC** to establish a connection to an **SQLite** database to manage and store data.

Social Media Web Application — *[Github] [DEMO]*

- Designed and developed the back–end system for a complex social media web application utilizing **Golang** and **gRPC**.
- Incorporated **Hashicorp raft** for a **distributed** and **reliable** data storage solution.
- Conducted comprehensive **unit testing** to guarantee the stability and performance of the system.

Easy Campus Life — *[Github] [DEMO]*

- Developed and deployed a **full–stack** integrated campus platform to facilitate student discussions, course group formation, socializing, and event participation using various **AWS services**, including S3, API Gateway, Lambda, SES, Cognito, DynamoDB, and OpenSearch.
- Implemented **RESTful APIs** for seamless data access and manipulation between the web the server.
- Used **NoSQL** database management system (DBMS) to efficiently handle large and complex data sets and ensure scalability.

Taiwan Sign Language Recognition System — *[DEMO]*

- Proposed and implemented an **ensemble model using 3DCNN and GCN** with **Pytorch** for **real-time** translation of 40 common Taiwan Sign Language (TSL) gestures into text with **98.64%** accuracy.
- Built up the **first Taiwan Sign Language database** for TSL model training.