Chao-Ting, Chen

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Education

National Chenhgchi University Taipei, Taiwan
Bachelor's of Science in Computer Science *Sep 2021 — Jun 2025*
Double major in Digital Content and Technologies, Minor in Electrophysics

- Cumulative GPA: 4.19/4.3
  - **NT$3,000**, Dean's List Award Sep 2024
  - **NT$5,000**, Academic Excellence in course "Computer Structure and Organization" May 2024
  - **NT$3,000**, Dean's List Award Oct 2023
  - **NT$5,000**, Academic Excellence in course "Data Structure" May 2023
- Teaching Assistant of *Computer Programming* Jan 2022 — Jan 2023
- Teaching Assistant of *Natural Language Processing* Mar 2025 — Jun 2025

Training Course

Harvard University Remote

CS50′s Introduction to Artificial Intelligence with Python, including twelve projects and seven quizzes. Sep 2023

Work Experience

Software Engineer Intern Jul 2024 — Dec 2024
MediaTek. Inc *Taipei, Taiwan*

- Developed firmware using C++ and Rust with firmware engineers; ensured its compatibility with the hardware devices.
- Acquired knowledge about applying the mobile operating system Android; conducted in-depth research on Android Graphics.
- Conducted research on issues related to Workload; monitored APK activities; implemented a communication bridge between APK and Firmware.
- Apply reinforcement learning in the firmware layer and improved the accuracy of forecasting CPU workloads.
- Constructed a system that uses Machine Learning and Language Models to preserve known knowledge; assisted engineers in analyzing, accelerating development, and debugging.

Research Experiences

Academia Sinica Jul 2024 — Dec 2024
Scholarship Research, Advisor: Assistant Research Professor Huang, Hen-Hsen"

- Collaborated with a start-up company to create an agent using Large Language Models(LLMs), Visual Language Models(VLMs) and Real-time Object Detection Model(YOLO) with visual and behavioural capabilities to understand the real world.
- Studied LLMs & VLMs; analyzed various capabilities of LLMs.
- Completed and published the research paper "Integrating LLM, VLM, and Text-to-Image Models for Enhanced Information Graphics: A Methodology for Accurate and Visually Engaging Visualizations" at the top-notch AI conference IJCAI.
- Completed and published the research paper "Don't Do RAG: When Cache-Augmented Generation is All You Need for Knowledge Tasks" at The ACM Web Conference 2025

National Science and Technology Council Mar 2022 — Mar 2025
Researcher, Advisor: Scientist Lin, Yu-Cheng

- Researched the technology of quantum annealing; used Japan's Fujitsu quantum computer to simulate annealing.
- Developed a multifunctional quantum annealing tool with C/C++ and Rust to assist students in studying quantum heuristic algorithms.
- Applied and successfully selected for the College Student Research Scholarship, with a 30% to 40% selected rate over the years.
- Combined information and computational physics to conduct in-depth research on the significance and effectiveness of Hamiltonian in computing.

National Chengchi University (NCCU) Mar 2024 — Feb 2025

Student, Advisor: Associate Professor Tsai, Ming-Feng

- Integrated law and fine-tuned open-source language models, and made it usable by the general public who was unfamiliar with the law.
- Made the model properly quote the correct laws and regulations by combining the "Laws & Regulations Database of The Republic of China (Taiwan)", Retrieval-Augmented Generation (RAG) and fine tuning.
- Used various open-source models, containers, and other tools proficiently to accelerate the development and deployment process.

Extracurricular Activities

Member, Student Council, NCCU Sep 2024 — Jun 2025

- Served as a student councilor, collaborated with peers and faculty to represent student interests, organized school events, and promoted community involvement.

President, Magic Club, NCCU Sep 2021 — Jun 2024

- Organized the NCCU Close-distance Magic Competition; maintained club operations; achieved excellence in the annual club performance evaluation.

Project Manager, PeoPo Citizen Journalism Platform Project Sep 2022 — Jun 2023

- Built an online news website including the completion and finalization of the front-end, microservice, back-end and database.

Leader of Technology Team, Google Developer Groups on Campus Sep 2021 — Sep 2022

- Led the tech team; cooperated with Google; built the club's website; served as a lecturer for the club's classes.

Developer, Side Project: Past-Papers Web Sep 2021 — Jun 2022

- Developed, designed and maintained a website that stored previous years' question papers, and allowed students to upload, download, and share them.

Awards & Honors

1st Place, 2022 Game Design Hackathon, BlackHole Creative Co., Ltd. Oct 2022

Qualified for the final, National College and University Software Design Competition, National Taiwan Normal University Oct 2022

2nd Place, NCCU Business Start-up Competition, NCCU Entrepreneur Association May 2022

Top 20, Calculus A General Examination, Applied Mathematics Dept., NCCU Jan 2022

Academic Reports

Integrating LLM, VLM, and Text-to-Image Models for Enhanced Information Graphics: A Methodology for Accurate and Visually Engaging Visualizations Jun 2024

First Author, 5 Pages, International Joint Conference on Artificial Intelligence (IJCAI)

- The study presents a method for creating accurate and visually appealing information graphics by combining Large Language Models, Visual Language Models, and text-to-image models. The process ensures precise data representation and enhances the graphic's visual quality, making it ideal for educational and scientific use.

Multifunctional Quantum Annealing Toolkit and Its Applications May 2024

First Author, 9 Pages, National Science and Technology Council

- The project focuses on developing an open-source C++ software package that combines simulated annealing, simulated quantum annealing, and quantum annealing algorithms for solving combinatorial optimization and theoretical physics problems. The software will be modeled after existing interfaces and designed for use on traditional computers.

Don't Do RAG: When Cache-Augmented Generation is All You Need for Knowledge Tasks Jan 2025

First Author, 5 Pages, The ACM Web Conference 2025

- This paper proposes Cache-Augmented Generation (CAG) as an alternative to RAG, eliminating retrieval latency and errors by preloading knowledge into LLMs with extended context. For constrained knowledge bases, CAG offers a simpler, more efficient approach with comparable or superior performance.

Skills

- **Programming Languages**: JS/TS, HTML/CSS, C/C++, Rust, Golang, Python, Shell Script
- **Technologies**: Git, UNIX, Docker, NGINX
- **Web Dev**: React, Next, Tailwind, htmx
- **Machine Learning**: Pandas, mlxtend, sklearn, Pytorch
- **Database**: Relational Database, MongoDB, Apache Cassandra