Hsin-Ling (Justin) Hsu

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Education

National Chengchi University (Ranked 2nd business school in Taiwan) Expected Graduation: Jun. 2027
B.S. in Management Information Systems (MIS) *Taipei, Taiwan*

- **Rank: 2 / 38 | GPA: 4.3 / 4.3**
- Enrolled in FinTech Program of Specialization (Jan. 2025 – Present)
- Previously enrolled in Mathematical Sciences (Sept. 2023 – Aug. 2024)
- **CS Related Courses:** Computer Programming, Data Structure, Introduction to Computer Science, Calculus, Linear Algebra, Statistics(I), Machine Learning, Introduction to Data Analysis and Programming, Python for Data Analysis 101, An Introduction to Game Theory (I)

Research Interests

Information Retrieval; Natural Language Processing; Large Language Models; Machine Learning

Publications

Under Review

- **Hsin-Ling Hsu**, Ping-Sheng Lin, Jing-Di Lin, and Jengnan Tzeng. *KAP: MLLM-assisted OCR Text Enhancement for Hybrid Retrieval in Chinese Non-Narrative Documents.* Under Review at The 18th NTCIR, Tokyo, Japan.

Work Experience

Research Assistant Dec. 2024 – Present
Far Eastern Memorial Hospital *New Taipei, Taiwan*

- Advisor: Dr. Fang-Ming Hung
- Research focuses on developing models for disease prediction and information synthesis using LLMs, machine learning models, and information retrieval techniques. These models leverage electronic health records (EHR) from outpatient, inpatient, and emergency departments, along with examination reports and SOAP notes.

AI Intern Sept. 2024 – Present
GoFreight (The world's largest cloud-based freight forwarding software) *Taipei, Taiwan*

- Developed LLM-powered dynamic web parsing solutions to mitigate crawler disruptions caused by web changes, significantly reducing maintenance costs.
- Applied OCR, NLP, and computer vision techniques to extract and analyze logistics documents (e.g., Master Bill of Lading, Invoice), improving the accuracy and efficiency of automated document processing.

Research Assistant May 2024 – Present
Institute of Information Science, Academia Sinica (The highest-level academic institution in Taiwan) *Taipei, Taiwan*

- Advisor: Prof. Ti-Rong Wu, Reinforcement Learning and Games Lab.
- Participated in a research project on General computer game solving based on Proof Cost Network (PCN).
- Responsible for designing and developing both frontend and backend components of computer games using WGo.js, C/C++.
- Designed a high-performance database for managing large-scale game records and AI-analyzed board states, optimizing system architecture to ensure stability, scalability, and efficient data access, supporting a high-performance gaming environment.

Part-time Engineer Jul. 2023 – Sept. 2024
ChainSea Information Group *Taipei, Taiwan*

- AI Engineer | Core R&D Contributor to Open-Source LLM and Whisper Projects at ChainSea, specializing in real-time transcription, inference acceleration, dataset generation and augmentation (e.g., Taipower project under Selected Projects), and model training.
- Designed, developed, and optimized RAG architectures to improve knowledge base retrieval accuracy.
- Conducted research and development in cutting-edge AI technologies, including the design and implementation of LLM Agent architectures for marketing workflows and a generic framework for topic management.
- Technologies utilized: Python, SentenceTransformer, TensorFlow, PyTorch.

Awards & Honors

2nd Place in HOTAI MaaS Hackathon, [2/233 teams; ~0.8%] 2024
AI Intelligent Travel Checkup. News Article | Certificate *Taiwan*

- A nationwide competition open to all ages, hosted by two giant corporations, Hotai Motor and Microsoft.
- By presenting an innovative forum and AI algorithm for intelligent itinerary check-ups and recommendations, we won second place nationwide and **received a prize of 250,000.**
- I was responsible for system architecture design, AI & full-stack development, as well as delivering the technical presentation and demo.

3nd Place in LINE FRESH Campus Competition, [3/165 teams; ~1.8%] 2024
AI dementia care platform. News Article | Certificate *Taiwan*

- A nationwide competition hosted by LINE.
- I was responsible for system architecture design, AI & backend development.

2nd Place in AI Interdisciplinary Sustainability Innovation Competition, [2/44 teams; ~4%] 2024
Campus AI assistant AllPass Project Lead: AI & backend development. News Article | Live Demo | Certificate *Taiwan*

Selected Projects

AutoMouser (100+ stars) 2025 – Present
Open Source Contributor | Pull requests | Issues

- AutoMouser leverages LLM-based technology to automatically generate browser automation code from your mouse movements, capturing every click, drag, and hover. This integration streamlines your workflow and enables the creation of robust, repeatable tests with enhanced precision and flexibility.
- Contributing new features, bug fixes, and codebase architecture optimization.

NCCUPass APP 2024 – Present
Role: Head of AI

- Led the AI team in the R&D of the campus AI assistant AllPass and Campus Smart Lost and Found Matching FindPass. As of September 2024, **over 2,000 students** at National Chengchi University have registered and used the platform, and the project has received multiple accolades in startup competitions.

High-Accuracy RAG Retriever Template 2024
Keywords: InformationRetrieval, BM25, Bi-Encoder, Cross-Encoder, FineTuningLLM

- Served as a **core contributor**, responsible for the architectural design and the primary framework development of this High-Accuracy RAG system, which applies RAG and LLM in Financial Q&A.
- I also developed and published a personal open-source project, General RAG Template, to facilitate the integration of RAG and LLM frameworks for a wide range of applications.

Taiwan Power Intelligent Robot Optimization Project 2023
ChainSea Information Group & Taiwan Power (Taiwan's largest electric power company)

- Served as a **core contributor** in leveraging LLMs to enhance and optimize training data for Taiwan Power's official website intelligent AI customer service system, "Dianbao," with the currently deployed version utilizing the improved data we developed.

Activities

Lecturer Sept. 2023 – Aug. 2024
Google Developer Group (GDG) - NCCU *Taipei, Taiwan*

- Teaching Experience: Introduction to Databases, Generative AI (Course satisfaction rate as high as **90%**)

Security Research 2024 – Present
HITCON ZeroDay Platform *Remote*

- Reported multiple security vulnerabilities, prompting rapid emergency patches from affected organizations.

Freelancer 2023 – Present
Successfully completing 10+ software development and technical consulting projects. *Remote*

- Experienced in web scraping, LLM-based stock fundamental analysis data processing, ML stock price prediction project consulting, AI for board games, etc.