

Szu-Ju Chen

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Education

National Taiwan University, B.S. in Computer Science and Information Engineering Sep. 2022 – Jun. 2025

- **Selected Courses:** Web Retrieval and Mining, Natural Language Processing, Computer Vision, Information Retrieval and Extraction, Computer Vision Practice with Deep Learning, Applied Deep Learning, Machine Learning

- Ranking: ;GPA: 4.15/4.3

National Taiwan University, Creativity and Entrepreneurship Program Sep. 2023 – Jun. 2024

National Taiwan University, B.S. in Information Management Sep. 2021 – Jun. 2022

- GPA: 4.17/4.3

Publications

Retrieving the Right Law: Enhancing Legal Search with Style Translation, SIGIR2025 Short Paper

Szu-Ju Chen, Jing Jin, Sheng-Lun Wei, Chien-Hung Chen, Hsin-Hsi Chen

10.1145/3726302.3730246

Research Experience

MACHI Program in DATA Lab, Dr. Xia Ben Hu – Rice University, United States Feb. 2025 - Mar. 2025

- Applied dynamic routing frameworks and decision algorithms to multi-agent visual reasoning tasks
- Achieved a 7% improvement in accuracy and reduced processing time by 50% compared to SOTA approach

Information Retrieval Lab, Dr. Pu Jen Cheng – National Taiwan University, Taiwan Sep. 2003 – Jan. 2025

- Explored on image retrieval using VQ-VAE indexing and contrastive learning for autoregressive retrieval
- Developed a hybrid recommender system integrating semantic features from language models with behavioral data from collaborative filtering, enhancing personalization for music genre and keyword-based searches
- Preprocessed millions of public music datasets; extended user input using the ChatGPT-3.5 API; trained a LightGCN model on playlist-track interactions; combined outputs from semantic and behavioral models for recommendations

Work Experience

Software Engineer, Google – New Taipei City, Taiwan Aug. 2025 – Present

- Supported production applications and addressed user-reported UI issues within tight timelines
- Migrated and modernized backend routes for Pixel Clock's in-app services, improving system maintainability
- Contributed to early milestones of Pixel Calculator's new feature by creating components and implementing unit tests

Machine Learning Scientist Intern, Appier – Taipei City, Taiwan Sep. 2024 – May 2025

- Resolved one-epoch overfitting issue and improved click-through rate prediction accuracy by 5%
- Enhanced recommendation performance by tuning ranking models and experimenting with feature engineering

Software Engineer Intern, Google – New Taipei City, Taiwan Jun. 2024 – Sep. 2024

- Built an Android package for updatable onboarding flows, enabling updates and bug fixes within launch timelines
- Designed data transfer workflows between modules; implemented core logic, UI, and user flows using Java and XML
- Refactored legacy components into reusable libraries, added unit tests, and ensured quality through internal team testing (passed 7/7 test cases), leading to successful production launch

Student Training Engineering Program Intern, Google – New Taipei City, Taiwan Jun. 2023 – Sep. 2023

- Integrated multiple network speed testing features into an internal Android app, improving usability for modem testing
- Implemented FTP speed testing in both Python for automation and Java for app integration
- Delivered precise and reliable performance under 5G environments, demonstrated to and adopted by the internal team

Projects

Information Retrieval and Extraction Final Project Dec. 2024

- Developed retrieval algorithms for legal question answering using related Taiwanese laws
- Trained a Bi-Encoder model and fine-tuned Taiwan-LLaMA-3B using original user queries and LLM-rewritten queries

Computer Vision Practice with Deep Learning Final Project	Dec. 2024
<ul style="list-style-type: none"> Designed a pipeline combining visual grounding and image inpainting for seamless indoor object replacement Fine-tuned models on a custom-collected dataset; evaluated and compared PowerPaint and BrushNet performance 	
Creativity and Entrepreneurship Program, Konnect	Sep. 2023 - Jun. 2024
<ul style="list-style-type: none"> Led development of a cross-platform app connecting fans and idols, enabling activity tracking and content sharing Built the app from scratch using React Native; integrated Google Maps, user posting, real-time data access, and GCP backend services; successfully delivered MVP and passed initial testing 	

2024 MakeNTU: Explorer Hackathon	Mar. 2024 - May 2024
<ul style="list-style-type: none"> Developed backend services using Firebase API for controlling a smart storage robot via a simple user interface Supported training for object recognition models; improved classification accuracy and item categorization 	

Applied Deep Learning Final Project	Apr. 2023 - Jun. 2023
<ul style="list-style-type: none"> Investigated Chinese grammar error correction using various language models, including BART, mT5, Taiwan-LLaMa Finetuned google/mt5-small on an open-source dataset; evaluated with self-designed Exact-Match and M² metrics 	

Machine Learning Final Project	Apr. 2023 - Jun. 2023
<ul style="list-style-type: none"> Predicted song danceability using a custom-built model and handcrafted feature engineering Explored regression, decision trees, random forests, and boosting techniques for prediction Ranked 1st for least overfitting and 5th on the private leaderboard in final evaluation 	

Awards

National Taiwan University Fu Bell Scholarship	Jun. 2025
Top 10% of students in the Computer Science and Information Engineering department	
Dean’s List Award of Spring 2025	Jun. 2025
Second Place of the final presentation of MACHI Program	Mar. 2025
Poster: "A Dynamic Routing Framework for Multi-Agent Visual Question Understanding"	
National Taiwan University Fu Bell Scholarship	Dec. 2024
Top 10% of students in the Computer Science and Information Engineering department	
Dean’s List Award of Fall 2024	Dec. 2024
Ranked 1st out of 155 students in the Computer Science and Information Engineering department	
Excellence Award of National Taiwan University CSIE Research Exhibition	Jun. 2024
Poster: “Song Recommendation Combining LLM and Recommender - focus on semantic and behavior”	
National Taiwan University Fu Bell Scholarship	Sep. 2021
Representative of the Information Management department	

Extracurricular Activities

National Taiwan University International Companion for Learning	Jan. 2024
<ul style="list-style-type: none"> Collaborated with international peers to deliver educational resources to children in rural areas Enhanced engagement through culturally tailored lessons and fostering cross-cultural collaboration skills 	
Hualien Yuli Township Dayu Elementary School Volunteer Service	Jan. 2024
<ul style="list-style-type: none"> Led an 8-member team in organizing a three-day educational camp for rural elementary school students Taught two courses: natural science experiments and an introduction to media literacy 	
Hualien Fengbin Community Volunteer Service	Jan. 2023
<ul style="list-style-type: none"> Participated in community clean-up activities in the local area Taught three courses: career exploration, Taiwanese geography, and personal boundaries awareness 	

Skills

Programming Languages: C + +, C, Python, Java, JavaScript	
Machine Learning: training and fine-tuning on LLMs, recommendation systems, computer vision	
App Development: Android native apps, cross-platform apps using React Native	
Languages: Mandarin(native), English(fluent: TOEIC 905, TOEFL 104)	