

Jeng-Yue (Buffett) Liu

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EDUCATION

Carnegie Mellon University

Master of Science in Artificial Intelligence and Innovation

Aug 2025 – Present

Pittsburgh, PA

- Relevant Coursework: Introduction to Computer Systems, Introduction to Machine Learning, Generative AI for Music and Audio.

National Taiwan University

Bachelor of Business Administration in Information Management

Sep 2020 – Jun 2025

Taipei, Taiwan

- Awards: Phi Tau Phi (top 1% of the school), Bachelor Degree Thesis Award, Presidential Award, Dean's List (2x).
- Teaching Assistant: Machine Learning (2x), Computer Programming.

SKILLS

Languages: Python, C, C++, Java, JavaScript, TypeScript, R

Tools: PyTorch, Hugging Face, Docker, GitHub Action, Kubernetes, Helm, MLflow, Argo Workflow, MCP, uv, n8n

General: Software Development, Generative Models, Diffusion, Style Transfer, Disentanglement, LLM, RAG, NLP

EXPERIENCE

Academia Sinica, Music and Audio Computing Lab

Research Assistant (Advised by Prof. Yi-Hsuan Yang & Prof. Li Su)

Jan 2024 – Aug 2025

Taipei, Taiwan

- Proposed a novel end-to-end **factorized codec** learning framework for timbre/style transfer models with information perturbation and supervision, achieving enhanced timbre-content-ADSR **disentanglement** for controllable synthesizer preset conversion and surpassing state-of-the-art synthesizer timbre transfer baselines with a multi-resolution STFT loss from 5.69 to **2.22**.
- Developed an audio-query music **source separation** system leveraging band-split **Mamba2**, enhancing timbre conditioning and boosting instrument-specific SNR by 7%.

Quid

Machine Learning Engineer Intern

Dec 2024 – Jun 2025

Taipei, Taiwan

- Optimized search result similarity ranking and match scoring by integrating **DSPy modules** with **Chain Of Thought**, cutting prediction MSE from 0.17 to **0.03** using **MIPROv2**, and designed an LLM-based assessment module to automate summary/title generation, reducing reliance on manual prompt tuning.
- Built and maintained **Kubernetes**-native CI/CD workflows with **Helm**, **Argo**, and **GitHub Actions** for in-house LLM services; authored Helm charts to define CanalTask and WorkflowTemplate objects, streamlining workflow automation.
- Refined and deployed a trend detection module to analyze TTCM backend celebrity social media posts, boosting capture rate of rapidly emerging TikTok hashtags by **18%**.

PROJECTS

InsightLink: Empowering News Analysis with Graph RAG and LLM Integration

Capstone Project (Advised by Prof. Tzu-Fen Chang & Prof. Chia-Yen Lee)

Dec 2023 – Dec 2024

Remote

- Directed collaboration with *California State University, Bakersfield*, and a team of 6 to design and implement a **GraphRAG**-based news analysis tool, leveraging **LLM** to extract insights from large datasets and eliminating significant manual workload in social science research [[GitHub](#)].
- Applied **NLP** techniques (LDA, NMF) to analyze attitude shifts in public sentiment related to the 2021 Atlanta spa shootings.

PUBLICATIONS

- **Jeng-Yue Liu**, Ting-Chao Hsu, Yen-Tung Yeh, Li Su, Yi-Hsuan Yang. "SynthCloner: Synthesizer Preset Conversion via Factorized Codec with Disentangled Timbre and ADSR Control". *Proc. International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, 2026 (Under Review).
- **Jeng-Yue Liu**, Tzai-Hung Wen. "Trip-Purpose-Based Methods for Predicting Human Mobility's Next Location". *Annual Conference of the Population Association of Taiwan*, 2024.