Jeng-Yue (Buffett) Liu

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Education

Carnegie Mellon University — Pittsburgh, PA
Master of Science in Artificial Intelligence and Innovation — May 2027

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

National Taiwan University — Taipei, Taiwan
Bachelor of Business Administration in Information Management — Jun 2025
Bachelor of Science in Geography

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

Skills

Languages:	Python, C, C++, Java, JavaScript, TypeScript, R, SQL, Shell
Frameworks:	PyTorch, TensorFlow, Librosa, Hugging Face, React, Next.js, FastAPI, Flask
Tools:	Docker, Kubernetes, Helm, PostgreSQL, Apache Spark, Airflow, Argo CD, LangChain, GitHub Actions, Linux, MCP
Domains:	Style/Timbre Transfer, Generative Models, Diffusion, Music Information Retrieval, Source Separation, NLP, LLM

Experience

Academia Sinica, Music and Audio Computing Lab — Taipei, Taiwan
Research Assistant (Advised by Prof. Yi-Hsuan Yang & Prof. Li Su) — Jan 2024 – Aug 2025

- 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**.
- Designed a **zero-shot timbre encoder** using SimSiam with a Swin Transformer, incorporating sequence perturbation and random shifting augmentation, and achieved **86%** K-NN top-1 timbre similarity across 75k+ timbre segments.
- Developed an audio-query music **source separation** system using band-split **Mamba2** with hypernetwork conditioning, enhancing **timbre conditioning** and boosting instrument-specific SNR by 7%.
- Engineered "SynthCAT", a foundational dataset for the synthesizer community via pedalboard and dawdreamer.

Quid (Pioneer in AI-Driven Insights) — Taipei, Taiwan
Machine Learning Engineer Intern — Dec 2024 – Jun 2025

- 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, minimizing 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.
- Coordinated a cross-team initiative to refine and deploy a **trend detection** module for TTCM celebrity social media data, boosting capture rate of rapidly emerging TikTok hashtags by **18%**.

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.

Extracurricular Activities & Service

Peer Reviewer, *NeurIPS Workshop on AI4Music* — 2025
Co-Manager & Resident DJ, Rumeng Bar, Taipei — Jan 2023 – Aug 2025