Jeng-Yue Liu

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Education

Carnegie Mellon University – School of Computer Science Pittsburgh, PA
Master of Science in Artificial Intelligence and Innovation May 2027
- Relevant Courses: Computer Systems, LLM Systems, Advanced NLP, ML/DL, AI Engineering, Gen AI, Diffusion & Flow Matching

National Taiwan University Taipei, Taiwan
Bachelor of Business Administration in Information Management Jun 2025
- Awards: Summa Cum Laude (**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, NumPy, Hugging Face, LangChain, React, FastAPI, SGLang, JAX, vLLM
Infra/DevOps: Docker, Kubernetes, Linux, Helm, Argo CD, Jenkins, Google Cloud Platform, Git, Postman
Tools: PostgreSQL, Supabase, Qdrant, Apache Kafka, Prometheus, Grafana, Flask

Work Experience

Neutone Inc. Tokyo, Japan (Remote)
Research & Development Intern Dec 2025 – Present
- Ported the in-house real-time tone-morphing plugin to a SlowFast training pipeline, mitigating low-buffer granular artifacts and degraded timbre transfer to improve OOD reliability while preserving low-latency real-time inference.

Academia Sinica Taipei, Taiwan
Machine Learning Research Intern Jul 2024 – Aug 2025
- Outperformed state-of-the-art models with a 47.3% reduction in multi-scale STFT loss, enabling controllable timbre–content–ADSR disentanglement in style transfer, by proposing the factorized codec with attribute-specific auxiliary task and information perturbation.
- Achieved 86% k-NN top-1 similarity across 75k+ Beatport segments by designing a zero-shot timbre encoder with MoCo-v2 and Swin Transformer, leveraging sequence perturbation and temporal augmentations for timbre-invariant representation learning.

Quid Inc. Taipei, Taiwan
Machine Learning Engineer Intern Dec 2024 – Jun 2025
- Reduced manual prompt tuning by 10+ hours per week by optimizing search result similarity ranking and match scoring with DSPy under Chain-of-Thought and MIPROv2, and automating summary and title generation through an LLM-based assessment module.
- Advanced TikTok emerging hashtag capture accuracy by 18% through enhancing the trend-prediction module with temporal fusion transformer, enabling early identification of volatile trends for social media sentiment analysis.

Project Experience

Storytelling AI Companion App (Pre-seed Startup) Sep 2025 – Present
- Launched "Imoji" by building a real-time streaming call AI system with on-device ASR, semantic endpointing, and retrieval-based emoji recommendation, providing live chat and emoji feedback and generating conversation-grounded poll suggestions.
- Implemented a RAG-based AI host personality system with per-host knowledge bases and integrated offline TTS, enabling context-aware storyteller personas with <250 ms streaming latency and ~13x real-time generation.

GraphRAG for News Analysis with LLMs Dec 2023 – Dec 2024
- Improved glossary adherence and cut token cost by 49%, achieving >70% expert-validated alignment, by fine-tuning LLMs with a glossary-first QA pipeline that retrieved glossary chunks and constrained answers to glossary definitions.
- Eliminated 97% of manual analysis effort by engineering GraphRAG indexing and an LLM-powered full-stack app that extracted entities, distilled cross-article insights, and revealed shifts in public attitudes via temporal entity frequency analysis.

Human Mobility's Next Location Prediction Sep 2023 – Apr 2024
- Achieved 80% accuracy in human mobility next-location prediction with a lightweight model (<3 GB) by developing a multimodal hybrid GRU that fused static/dynamic movement data with spatial imagery.

Publications

- **Jeng-Yue Liu**, et al., "SynthCloner: Synthesizer Preset Conversion via Factorized Codec with Disentangled Timbre and ADSR Control". *Proc. International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, 2026. [*arXiv*]
- **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. [*Thesis*]