Jeng-Yue (Buffett) Liu

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EDUCATION

Carnegie Mellon University (CMU) *Aug. 2025 – May. 2027*
M.S. in Artificial Intelligence and Innovation Pittsburgh, PA

National Taiwan University (NTU) *Sep. 2020 – Jun. 2025*
Dual Degree: B.B.A. in Information Management & B.S. in Geography Taipei, Taiwan
- Overall GPA: 3.95/4.3, CS-related GPA: 4.15/4.3
- Awards: Phi Tau Phi (**Top 1%** of the school), NTU Presidential Award, Dean's List Award (Ranked **1/49** in department)
- Teaching Assistant: Machine Learning (x2), Computer Programming
- Courses: Machine Learning, Artificial Intelligence, Natural Language Processing, Web Programming, Algorithms, Data Structures, Operating Systems, Discrete Mathematics, Management Mathematics, Manufacturing Data Science, etc.

RESEARCH EXPERIENCE

Academia Sinica & NTU, Music and Audio Computing Lab *Jan. 2024 – Present*
Research Assistant (Advised by Prof. Yi-Hsuan Yang & Prof. Li Su) Taipei, Taiwan
- Researched EDM lead **timbre/style transfer** by combining **single-shot generation** with **music transcription**, generating backups from text prompts and melody using **Latent Diffusion** models to enable DJ mashups and song remixes.
- Applied HTDemucs and All-in-One models for chorus and EDM Lead extraction, developing an EDM Lead timbre encoder using the **SimSiam** framework with a Swin Transformer on the Beatport dataset across 30 EDM styles.
- Developed audio-query music **source separation** by leveraging **Band-Split Mamba2** models and hypernetwork conditioning, improving instrument-specific separation and increasing signal-to-noise ratio (SNR) by **7%**.

California State University, Bakersfield & NTU, Productivity Optimization Lab *Dec. 2023 - Dec. 2024*
Data Scientist (Advised by Prof. Chia-Yen Lee & Dr. Tzu-Fen Chang) Remote, Bakersfield, CA
- Collaborated with a team of 6 to develop a **GraphRAG**-based news content analysis tool, leveraging **LLMs** for insight extraction from large datasets and reducing manual effort in social science research. [*GitHub*]
- Applied **NLP** techniques such as LDA and NMF to analyze attitude shifts surrounding the 2021 Atlanta spa shootings.

NTU, Geospatial Computing Lab *Feb. 2022 – Jun. 2024*
Research Assistant (Advised by Prof. Tzai-Hung Wen) Taipei, Taiwan
- Developed **multimodal spatio-temporal** models with a trip-purpose approach, achieving **80% accuracy**, and designed a data pipeline to integrate mobility data, Google Maps polygons, and remote sensing datasets for spatial analysis.
- Reached IMV contest semifinals by building a digital transaction platform with **TypeScript (React)**, **Node.js**, and **MongoDB**, and developing a **Selenium** web crawler for real-time vegetable prices to optimize fertilizer use. [*GitHub*]

WORK EXPERIENCE

Quid (Pioneer in AI-Driven Insights) *Dec. 2024 – Present*
Machine Learning Engineer Intern Taipei, Taiwan
- Designed **DSPy modules** and **LLM-based evaluation metrics** for GenAI deployment in Kubernetes Operators and Argo Workflows; reduced match score prediction MSE from 0.17 to 0.03 using MiproV2, and developed an assessment module to optimize prompts for robust, **customer-targeted summary and title generation**.
- Developed a trend detection module to analyze TTCM backend data and predict the top 200 emerging hashtags.

PUBLICATION

Trip-Purpose-Based Methods for Predicting Human Mobility's Next Location – [*pdf.*] *Apr. 2024*
B.S. Thesis, (Advisor: Tzai-Hung Wen)
- **2024 Bachelor Degree Thesis Award**: presented at the 2024 Annual Conference of the Population Association of Taiwan.

TECHNICAL SKILLS

Programming/Tools Python, C/C++, R, JavaScript/TypeScript, PyTorch, TensorFlow, HuggingFace, Librosa, K8s
Research Topics Generative Models, Diffusion, Timbre/Style Transfer, Music Source Separation, NLP, LLM, CV

EXTRACURRICULAR ACTIVITIES & LEADERSHIP

Co-Manager & Resident DJ, Rumeng Bar, Taipei *Jan. 2023 – Present*
President, Department of Geography Student Association *Sep. 2021 – Aug. 2022*