

Jeng-Yue (Buffett) Liu

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EDUCATION

National Taiwan University (NTU)

Sep. 2020 – Jun. 2025

Dual Degree: B.B.A. in **Information Management** & B.S. in **Geography**

- NTU **Presidential Award** & Dean's List Award (twice) - Ranked **1/49** in department
- Phi Tau Phi Scholastic Honor Society (2024) - **Top 1%** of school
- Overall GPA: 3.95/4.3, CS-related: **4.15/4.3**
- Courses: Machine Learning, Artificial Intelligence, Natural Language Processing, Web Programming, Algorithms, Data Structures, Operating Systems, Discrete Mathematics, Management Mathematics, Manufacturing Data Science, etc.

TECHNICAL SKILLS

Programming	Python, C, C++, R, HTML/CSS, JavaScript/TypeScript, Java, Golang, SQL, LaTeX
Machine Learning	Deep Learning, Large Language Models, Computer Vision, Digital Signal Processing
Libraries & Frameworks	PyTorch, TensorFlow, HuggingFace, React, Flask, StreamLit, Mamba-SSM
Technical Tools	Git, Conda, Docker, Linux, MacOS, Figma, OpenAI API

PUBLICATION

Trip-purpose-based methods for predicting human mobility's next location – [\[pdf.\]](#)

Apr. 2024

B.S. Thesis, (Advisor: Tzai-Hung Wen)

- Developed **hybrid LSTM & GRU** models using a trip-purpose-based approach, achieving **80% accuracy**; preprocessed and integrated mobility data, Google Maps polygons, and remote sensing datasets for enhanced spatial analysis.
- Selected by the National Science and Technology Council for a **government-sponsored** undergraduate research program.
- **1st author**, received **2024 Bachelor Degree Thesis Award (Top 3)** of the department).
- Presented at the 2024 Annual Conference of the Population Association of Taiwan.

EXPERIENCE

Academia Sinica (Taiwan's Premier Research Institution)

Jun. 2024 – Present

Machine Learning Research Intern (Mentor: Prof. Li Su & Yi-Hsuan Yang)

- Researched **Music AI DJ** in query-based music source separation, leveraging **Band-Split Mamba2** models and **Hypernetwork conditioning** to enhance instrument-specific separation, boosting Signal-to-Noise Ratio (SNR) by **7%**.
- Designed pre-trained encoders to disentangle pitch and timbre, enabling precise target source isolation from mixture audio.
- Adapted separation models from **Computer Vision** and **Speech Separation** to music for experimental research.

CIeNET Technologies (ALTEN-Backed IT Leader)

Dec. 2023 – Jun. 2024

Engineering Intern

- Designed prompts for Google Cloud Code Extension in IDEs, boosting code completion and productivity.
- Automated **50+** test cases in Python using **PyAutoGUI** and **Splinter**, optimizing test execution and management.

PROJECTS

A Graph RAG & LLM-Powered Content Analysis Assistant, NTU – [\[GitHub\]](#)

Jan. 2024 – Present

Application Engineer

- Collaborated with a team of 6 and California State University, Bakersfield to develop a **GraphRAG**-based news analysis tool, enabling efficient insight extraction from large datasets and reducing manual effort in social science research.
- Pre-processed and generated QA pairs on news articles data to **fine-tune GPT-4o-mini** within the GraphRAG framework.

Innovative Web Solutions for Agriculture, IMV Contest – [\[GitHub\]](#)

Jul. 2024 – Nov. 2024

Full-stack Developer

- Advanced to the contest **semifinals** by building a digital transaction platform for agricultural goods in 2 months using **TypeScript (React)**, **Node.js**, and **MongoDB**, deployed via **Render** and **Vercel**.
- Developed a **Selenium** web crawler for real-time vegetable prices to optimize fertilizer ratios for carbon reduction.

EXTRACURRICULAR ACTIVITIES & LEADERSHIP

Co-Manager & Resident DJ, Rumeng Bar, Taipei

Jan. 2023 – Present

President, Department of Geography Student Association

Sep. 2021 – Aug. 2022

Chief Coordinator, NTU Geography Camp

Jan. 2022 – Jul. 2022