Jou-Yi Lee

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ABOUT ME

I'm an NLP grad student at UC Santa Cruz, an incoming student to UC Berkeley's Master of Advanced Study in Engineering, and a core contributor to Adobe's GUI Agent for Enterprise Applications. My work spans LLM applications, multi-agent content pipelines, and Docker-based DevOps (Airflow & Prometheus). In 2024 I published IEEE research that fused Q-learning with YOLO vision, drawing on my triple major in mechanical, materials, and computer engineering.

SKILLS

- **Programming and Tools:** Python, C++, MATLAB, ROS, GitHub, Selenium, Scrapy, AutoCAD, Ansys, SolidWorks
- **Machine Learning and NLP:** LLM, Transformer, PyTorch, Keras,Pandas,NumPy, Matplotlib,Seaborn,JSON,Scikit-learn, NLTK, SpaCy, OpenAI API, SVM, Slot-tagging, GRU, LSTM, CrewAI, Multi-Agent Systems
- **DevOps and Data Pipelines:** Docker, Apache Airflow, Prometheus, Grafana, Flask API, ETL Pipelines,SQL
- **Embedded Systems and Mechanical Design:** Raspberry Pi, Arduino, 3D Printing, Mechanical CAD Design, MongoDB

RESEARCH PROJECTS

Practical Implementation of Q-Learning and Object Detection for Mobile Robot Path Planning ARIS 2024

Advisor: SYED HUMAYOON SHAH, Yuan Ze University

- Improved static navigation using Q-Learning and object detection (OpenCV, YOLOv9).
- Published as an IEEE conference paper at ARIS 2024. IEEE Xplore: Document 10679961.

GUI Agent for Enterprise Applications Apr 2025 – Present

Mentor: GuangJieRen, Adobe

- Designed and implemented an LLM-driven GUI agent prototype that automates common workflows in Adobe Experience Cloud.

EA-MT: Entity-Aware Machine Translation Sep 2024 - Dec 2024

Advisor: Amita Misra, Amazon

- Developed an English-to-Chinese machine translation system that specifically addresses the challenges of handling named entities.

Multi-Agent Collaborative Writing System Feb 2025 - Present

Advisor: Independent Project

- Designed a Multi-Agent system using CrewAI, coordinating Planner, Writer, and Editor agents with GPT-3.5-Turbo.
- Developed a Flask-based backend and a real-time frontend interface to automate content generation based on user prompts.

DevOps Simulation Platform for Equipment Monitoring Feb 2025 - Present

Advisor: Independent Project

- Built a containerized industrial equipment monitoring system using Docker Compose.
- Integrated Flask API, MongoDB, Prometheus, Grafana, and Airflow to enable real-time anomaly detection, data visualization, and automated reporting.

Marine Debris ImageNet Visual Recognition Feb 2023 - Oct 2023

Advisor: Ching-Lueh Chang, Yuan Ze University

Designed visual recognition models for marine debris identification.

Deterministic Sublinear-Time Approximations for Metric 1-Median Selection Feb 2022 - July 2023

Advisor: Ching-Lueh Chang, Yuan Ze University

- Developed metric approximations for scalable data analysis.

EDUCATION

University of California, Berkeley Starting Fall 2025

Master of Advanced Study in Engineering

✓ Interdisciplinary curriculum spanning AI systems, robotics, and intelligent automation.

University of California, Santa Cruz Sep 2024 – Present

Master of Science — Natural Language Processing

✓ Currently pursuing graduate studies in NLP, focusing on large language models and multi-agent systems.

Yuan Ze University, Taoyuan, Taiwan Jul 2019 – Jun 2024

International Bachelor Program in Engineering — Mechanical Engineering, Chemical Engineering & Materials Science

Department of Computer Science & Engineering