



ABOUT ME

Currently a Master's student in Communication Engineering at National Taiwan University, specializing in Artificial Intelligence (AI). I have expertise in integrating large language models (LLMs) with graph-based techniques for protein-ligand affinity prediction, achieving state-of-the-art results. I am also actively collaborating with a research team at the University of Tokyo to enhance AI architectures, demonstrating strong teamwork and cross-disciplinary communication skills. I have consistently thrived in high-pressure environments, managing demanding coursework while delivering exceptional project outcomes. In addition, I am passionate about sports, including surfing and table tennis, which help foster teamwork, perseverance, and maintain a healthy, balanced lifestyle.

----- Software -----

- Python (AI model development)
- PyTorch (Deep learning frameworks)
- C (Programming)
- R (Data analysis and statistical modeling)
- SQL Server (Database management and analysis)
- Power BI (Data visualization and reporting)

LANGUAGES



LIANG-MING CHIU

IDSSP LAB MEMBER

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EDUCATION

NATIONAL TAIWAN UNIVERSITY
2025

● Master's Degree
Graduate Institute of Communication Engineering

FENG CHIA UNIVERSITY
2020

● Master's Degree
Graduate Institute of Statistics

PROVIDENCE UNIVERSITY
2018

● Bachelor
Department of Statistic
Department of Finance

WORK EXPERIENCE

NATIONAL TAIWAN UNIVERSITY
Feb 2024 - Jun 2024

- Teaching Assistant
- **Course Tutoring:** Assist students in understanding Python programming concepts and troubleshooting code issues.
 - **Implementation and Testing:** Help develop and test course example code to ensure the accuracy and feasibility of the teaching content.
 - **Assignment and Competition Guidance:** Grade student assignments, provide improvement suggestions, and assist students in participating in Kaggle competitions.

MINISTRY OF HEALTH AND WELFARE
Nov 2020 - May 2022

- Research Assistant
- Using R language for data analysis and automating the data pipeline to improve data processing efficiency and accuracy.
 - Managing data with SQL Server.
 - Creating dynamic dashboard reports using Power BI.
 - Assisting in managing project progress.

FENG CHIA UNIVERSITY
Feb 2019 - Jan 2020

- Teaching Assistant
- Assisting students in understanding the concepts of statistics.
 - Helping students with test and assignment grading.
 - Using R language for data analysis.

SKILLS

MACHINE LEARNING (ML)	COMPUTER VISION (CV)
DEEP LEARNING FOR COMPUTER VISION (DLCV)	DIGITAL IMAGE PROCESSING
GRAPH NEURAL NETWORK (GNN)	PARALLEL COMPUTING
DATA STRUCTURE (DS)	ALGORITHMS

PUBLICATIONS

Rebuttal
Jan 2025 - Present

● **LGraphDTA: Integrating Large Language Model and Graph Neural Networks for Drug-Target Affinity Prediction**

Entropy 2021, 23,
1167.

● **Ordinal Time Series Forecasting of the Air Quality Index**

This research models and forecasts daily AQI (air quality index) levels in 16 cities/counties of Taiwan, examines their AQI level forecast performance via a rolling window approach over a one-year validation period, including multi-level forecast classification, and measures the forecast accuracy rates. We employ statistical modeling and machine learning with three weather covariates of daily accumulated precipitation, temperature, and wind direction and also include seasonal dummy variables. The study utilizes four models to forecast air quality levels: (1) an autoregressive model with exogenous variables and GARCH (generalized autoregressive conditional heteroskedasticity) errors; (2) an autoregressive multinomial logistic regression; (3) multi-class classification by support vector machine (SVM); (4) neural network autoregression with exogenous variable (NNARX). These models relate to lag-1 AQI values and the previous day's weather covariates (precipitation and temperature), while wind direction serves as an hour-lag effect based on the idea of nowcasting. The results demonstrate that autoregressive multinomial logistic regression and the SVM method are the best choices for AQI-level predictions regarding the high average and low variation accuracy rates.

AUTOBIOGRAPHY

● **Introduction**

I am Liang-Ming Chiu, a master's student in the Graduate Institute of Communication Engineering at National Taiwan University, currently in my second year, focusing on research in the field of Artificial Intelligence (AI). Reflecting on my academic journey over the past two years, I have faced significant challenges while continuously pushing my limits, cultivating resilience under pressure, and gaining interdisciplinary collaboration experience.

● **Academic Challenges and Achievements**

In my first year of the master's program, I encountered a rigorous academic schedule, taking two highly challenging courses: Deep Learning and Computer Vision (DLCV) and Machine Learning (ML). To manage my studies effectively, I devised an efficient learning plan—dedicating four days per week to DLCV, two days to ML, and using the remaining day to study Queueing Theory. Despite the intense pressure, I persevered and achieved outstanding results. By the end of the semester, my DLCV final

project ranked first in the class, and I received an "A" in the ML course.

● Research Focus and Collaboration

My current research focuses on integrating Large Language Models (LLMs) with graph-based techniques for protein-ligand affinity prediction, achieving state-of-the-art (SOTA) results. Additionally, I collaborate with a research team at the University of Tokyo (UTokyo), assisting them in improving AI architectures and debugging. This international collaboration has given me valuable insights into the interdisciplinary nature of AI applications, emphasizing the importance of teamwork and integration across different fields. Through this experience, I have honed my cross-disciplinary communication and teamwork skills while learning to adapt quickly and solve problems in dynamic environments.

● Extracurricular Engagement

Beyond academics, I actively engage in sports to maintain physical and mental well-being. In addition to taking a table tennis course, I participate in a surfing club, challenging myself, strengthening my willpower, and finding focus and balance amidst the waves. To improve my face-to-face communication with international peers, I joined a multilingual exchange club, where I interact with students from around the world to enhance my language skills and cross-cultural understanding.

● Continued Learning

I have taken several essential AI-related courses, including Machine Learning, Deep Learning and Computer Vision, Generative AI, Neural Networks, and Parallel Computing. Additionally, I have supplemented my studies with foundational courses such as Data Structures, Algorithms, and Queueing Theory to build a solid technical foundation for my future career. Even though I have already earned enough credits to graduate, I continue to take or audit critical AI courses, such as AI Agents, Computer Vision (from Recognition to Geometry), and Digital Image Processing, to stay competitive in this rapidly evolving field and demonstrate my commitment to lifelong learning and self-improvement.

● Future Goals

As graduation approaches, I am excited about my future. As I re-enter the workforce, I seek a job that aligns with my long-term career plans. I have set both short-term and long-term goals for myself: in the short term, I aim to quickly adapt to the workplace, apply my knowledge and skills in practical scenarios, and continuously enhance my problem-solving abilities. In the long run, I aspire to take on greater responsibilities, improve my English proficiency to pursue international collaboration or overseas assignments, and potentially take on a managerial role to contribute greater value to my team and company. I firmly believe that continuous self-challenge is the key to true growth and breakthroughs. I look forward to working in a dynamic and high-potential environment where I can leverage my expertise and teamwork spirit to grow alongside my company and contribute to the advancement of AI technology.