Jay Chiehen Liao

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5+ years of experience in **Data Science** & **Machine Learning** • Proficient in **Python** & **R** programming• **10+ AI/ML competitions**
7+ years of experience in **Data Analysis** & **Statistics** • **Git**, **Linux**, **GPU**, **GCP** • 10+ academic presentations in various domains •
Skilled in communication, model explanation, and problem-solving • **Interdisciplinary** backgrounds

WORK EXPERIENCE

FAZZ (FINTECH STARTUP, Y COMBINATOR ALUMNI)
DATA SCIENTIST (FULL-TIME)
Sep 2022 - Sep 2023 | Taipei, Taiwan (Hybrid)
- Implemented the system of transaction anomaly alerts based on the time series analysis.
- Strengthened the anomaly detection model and enhanced the true positive rate by 25%.
- Headed the project of identifying micro-loan fraud patterns with graph analysis.
- Developed and maintained detection models for fraudulent transactions with cryptocurrencies.

NETWORKS & AI LAB, NCKU
RESEARCH AND TEACHING ASSISTANT (PART-TIME)
Aug 2020 - present | Tainan, Taiwan (Hybrid)
- Research topics: Machine learning with graphs, graph neural network (GNN), deep learning for tabular data.
- Managed Linux servers with GPUs .

HEALTH BEHAVIOR LAB, NCKU
RESEARCH ASSISTANT (PART-TIME)
Jan 2017 - Jul 2020 | Tainan, Taiwan

EDUCATION

RENNES SCHOOL OF BUSINESS (RSB)
MASTER IN DATA & BUSINESS ANALYTICS (GPA=4.25/5)
Sep 2021 - Apr 2022 | Rennes, France
Graduation Project: *Identifying Key Features of Standard Essential Patents in Information and Communication Technologies with Explainable Machine Learning*

NATIONAL CHENG KUNG UNIVERSITY (NCKU)
MASTER IN DATA SCIENCE (GPA=4.25/4.30)
Aug 2020 - Aug 2022 | Tainan, Taiwan
- The 1st Place, Academic Performance of The 1st Year
- Thesis: *Learning Graph Structures from Tabular Data for Downstream Classification Tasks* (awarded by Taiwanese Association Artificial Intelligence and TOPCO Scientific)

DOUBLE BACHELOR IN STATISTICS AND PSYCHOLOGY
Sep 2015 - June 2020 | Tainan, Taiwan

KEY PROJECTS & AWARDS

TabGSL: Graph Structure Learning for Tabular Data Prediction
Jay Chiehen Liao AND Cheng-Te Li (2023)
Presented a GNN framework with graph contrastive learning and a transformer-based feature extractor to enhance tabular data prediction by simultaneously learning instance correlation and feature interaction.

Graph Neural Networks for Tabular Data Learning
TUTORIAL AT THE WEB CONFERENCE (WWW) 2023, AUSTIN, TX
TUTORIAL AT THE IEEE INTERNATIONAL CONFERENCE ON DATA ENGINEERING (ICDE) 2023, ANAHEIM, CA

Predictive Modeling for 14-day Unplanned Hospital Readmission Risk by Using Machine Learning Algorithms
BMC MEDICAL INFORMATICS AND DECISION MAKING (2021)
- Constructed ML models with promising performance to predict patients' readmission.
- Figured out influential features with model explanations.
MY ROLES: Co-first author of the paper • Model constructor
SKILLS USED: Python • Catboost • Feature Engineering

A Mobile App (UPrEPU) to Monitor Adherence to Pre-Exposure Prophylaxis in Men Who Have Sex with Men: A Protocol for a User-Centered Approach Mobile App Design and Development
THE JMIR RESEARCH PROTOCOLS (2020)
SKILLS USED: Pseudo-code • Python • R

TOP 1 out of 401 teams
CHUNGHWA POST BIG DATA COMPETITION 2019
- Established ML models and proposed commercial solutions from the big data (>30GB) to reduce failed delivery rate by 65%.
- Evaluated the proposed system's ML performances, flexibility, and estimation of annual cost reduction (e.g., USD 376K in Taipei City.)
MY ROLES: Leader • Model constructor • Presenter
SKILLS USED: Python • R • GBDT • Visual machines

TOP 3 out of 859 teams
RECOMMENDATIONS OF CREDIT CARD SPENDING CATEGORIES 2021 (E.SUN BANK)
SKILLS USED: Python • Transformer • GBDT

TOP 25%
AI CUP FALL 2020 - MEDICAL INFORMATION DE-IDENTIFICATION (DEPT. OF COMPUTER SCIENCE AND INFORMATION ENGINEERING, NCKU)
SKILLS USED: Python • NLP • Transformer

EXCELLENT AWARD CERTIFICATE OF STATISTIC ANALYSIS (THE CHINESE APPLIED STATISTICS ASSOCIATION)

SKILLS

LANGUAGES ENGLISH Professional working proficiency (IELTS 7.5, R=9) MANDARIN/CHINESE Native FRENCH Beginner

TECHNICAL SKILLS PROGRAMMING Python • R • Ruby on Rails MARKUP LANGUAGES Markdown • R Markdown • LaTeX
VERSION CONTROL Git DATA MANIPULATION NumPy • Pandas • dplyr • tidyr • SPSS • MS Excel
DATA VISUALIZATION ggplot2 • Matplotlib • Seaborn DATA MANAGEMENT MySQL • Big Query • metabase
DEVELOPMENT ENVIRONMENT VS Code • Jupyter • RStudio OPERATION SYSTEMS macOS Intel/M1 • Linux • Windows
MACHINE LEARNING PyTorch • Scikit-Learn GRAPH ANALYSIS NetworkX • PyTorch-Geometric CLOUD COMPUTING GCP