CHING WANG

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Education

National University of Singapore, Singapore
M.S. in Statistics, Department of Statistics & Data Science Sep. 2024 - May. 2026 (Expected)

National Chengchi University (NCCU), Taiwan
B.S. in Statistics Sep. 2020 - Jun. 2024
Cumulative GPA: 3.88/4.3

Skills

Programming and Machine Learning Frameworks: Python, Pytorch, R
Data Analysis/Visualization: Tableau, SPSS Statistics, SPSS Modeler
Databases and Querying: MySQL, PostgreSQL
Languages: Chinese (Native), English (Advanced)
Related Modules: Time Series, Statistical Machine Learning, Deep Learning, Neural Network, Spatial Statistics, Stochastic Processes, Mathematical Statistics, Analysis and Experimental Design

Professional Experience

Duke-NUS Medical School, National University of Singapore
Research Assistant Feb. 2025 - Present
Advisor: Dr. Liu, Nan

- Developed ShapKAN by integrating Shapley values with Kolmogorov-Arnold Networks (KANs) to enable interpretable, shift-invariant model pruning. Reduced test error by 4% to 44% compared to baseline pruning while maintaining stable importance rankings under domain shifted across multiple benchmarks.
- Applied transfer learning to adapt European OHCA models (RACA, UB-Score) to Pan-Asian contexts using PAROS multi-country data, achieving AUROC 0.76-0.78 with improved fairness (demographic parity difference smaller than 0.02) compared to direct deployment. Enabled resource-efficient model localization for Asian healthcare systems while mitigating gender and demographic biases.

AI and Data Team, REAS Innovation
Data Engineer Intern July. 2025 - Present
Advisor: Mr. Su, Zeus

- Developed an AI-powered internal repair system integrating relational databases with LLM technology, processing over 100,000 records to reduce repair costs and turnaround time for United Daily News.
- Designed an AI customer service analytics platform for Fubon Insurance, featuring automated audio transcription, conversation summarization, and emotional sentiment detection for enhancing service quality.

Technical Sales Data team, International Business Machines(IBM)
Technical Sales Specialist intern Jun. 2023 - Jul. 2023
Advisor: Mr. Willy Lee

- Executed and developed a data mining introduction and product demonstration series, boosting user engagement on LinkedIn by 300%, and contributed to expend potential clients with business partners cooperation.
- Managed over 10 technical issues under mentor's guidance to improve client experience; collaborated with sales team to maintain customer relationship.

Center for Green Economy, Chang-Hua Institution for Economic Research
Research Assistant Jul. 2022 - Dec. 2022
Advisor: Dr. Chang, Hsuan-Yu

- Conducted variable selection and identified indicators for recyclate price trends considering international dynamics. Developed policy recommendations to stabilize the recycling industry and protect workers.
- Built a centralized, institution-wide, automated data collection database for weather data integration and accessibility, accompanied by detailed user instructions for effective utilization.

Selected Business Project

Analysis of cross-selling discount performance at Shopee trade with Unilever Jan. 2024 - Jun. 2024

- Analyzed over 600,000 transaction records using data mining techniques and retails domain knowledge to evaluate Unilever's sales performance, and dig out hidden sales trend.
- Considered Taiwanese user behavior and schedule effect, developed a bundling strategy based on varied schedules, resulting in a predicted growth rate exceeding 10%.

Business model and data visualization with Dogger Instrument Sep. 2023 - Dec. 2023

- Identified key commercial indicators and integrated sales behavior insights to construct predictive models and monitor product trend, enhancing decision-making through redesigned internal dashboards.
- Designed a user-friendly abnormal stock warning system to track inventory levels and detect irregular sales patterns, improving operational efficiency and responsiveness.

Academic Project

Public Transportation Network Optimization for Metro System Jan. 2025 – May. 2025

- Conducted data-driven urban transportation planning and network optimization. Analyzed commuter patterns and congestion in Singapore to enhance transport efficiency and reduce delays.
- Addressed peak-hour overcrowding and inflexible routing issues using advanced analytics and predictive modeling, contributing to improved route planning and commuter satisfaction.

Spatial Relationship of Dropout Count and Society Factors in New York City Jul. 2024 - Dec. 2024

- Conducted Geographically Weighted Regression (GWR) with customized bandwidth selection using Gaussian kernel smoothing and cross-validation to account for spatial heterogeneity in the data.
- Combined demographic and socioeconomic predictors with spatial data using covariance-weighted matrices and regression diagnostics to optimize model performance and identify key dropout determinants.

Unveiling the Dynamics Underlying the Cocoa Bean Future Markets Jan. 2024 - Jun. 2024

- Implemented seasonal autoregressive integrated moving average (SARIMA) models to analyze and predict trading volumes in cocoa futures markets, and ensuring model stability through rigorous diagnostics.
- Delivered actionable insights for smallholder farmers and nonprofits by identifying key seasonal trading patterns and providing predictive models to optimize trading strategies in agricultural commodity markets.

Honours and Recognition

GenAI Stars – Top 21 Teams June. 2025 - Present

- Top 21 teams nationwide in GenAI Stars, Taiwan's largest generative AI competition organized by the Ministry of Digital Affairs and the National Science and Technology Council (NSTC).
- Designed an end-to-end offline AI solution integrating hardware and software to safeguard data sovereignty and eliminate cloud dependency, providing no-code solution to customers in all-field.

The IMA AI/ML Congress System Holdings Student Prize - First Honour Sep. 2024

- Received the First Honour Student Prize and was invited to present at the IMA Conference.
- Developed an innovative real-time recommendation system by integrating an intention network, language learning model, and KNN methods in collaboration with a partner, contributing to cutting-edge advancements in recommendation systems.

ATONA Case Competition - First Runner-Up Jun. 2022

- Achieved First Runner-Up at the National Case Competition and secured the Champion title in the SingKong Life Insurance sub-competition.
- Designed a recycling-focused model, projected to scale operations to over 2,700 potential clients monthly; improved financial awareness among local citizens by 65% through cross-department collaboration.

Publications

- Wangxuan Fang*, **Ching Wang***, Siqi Li, Nan Liu , "Shift-Invariant Attribute Scoring for Kolmogorov-Arnold Networks via Shapley Value," *Under review at ICLR*, 2025. arXiv:2510.01663
- **Ching Wang***, Yi-Shan Chu *, "Intention Travel Recommendation System: A Travel Recommendation System based on Online Comments," *Conference paper of IMA*, 2024