Tingxuan Wu

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EDUCATION

New York University **New York, NY**
M.S. in Information System Sep 2025 – Exp 2027

- **Coursework:** Robo Advisors& Systematic Trading, Data Mining for Business Analytics, Financial Information Systems, Statistics & Data Analysis, Foundations of Finance, Fundamental Algorithms, Database Systems.

London School of Economics and Political Science (LSE) **London, UK**
B.S. in Financial Mathematics and Statistics Sep 2021 – Jun 2024

- **Coursework:** Regression and Generalised Linear ModelsGeneralised Linear Models, Probability, Distribution Theory and Inference, Financial Statistics, Risk Management and Modeling, Computational Methods in Financial Mathematics, Introduction to Pricing, Hedging, and Optimization.

PROGRAMMING SKILLS

Proficient in programming tools (Python, R, C++, Java, and MATLAB), big data programs (PostgreSQL, MySQL, SQLite, MongoDB), machine learning systems (PyTorch, TensorFlow), web design tools (HTML, JavaScript, jQuery, CSS, BootStrap, JSON, AJAJ, Flask, SQLAlchemy), and administrative programs (UNIX, Git, LaTeX, Markdown).

PUBLICATIONS

Learning Musical Representations for Music Performance Question Answering **Dartmouth College**
(**Paper Link**) *Xingjian Diao, Chunhui Zhang,* ***Tingxuan Wu****, Ming Cheng, Zhongyu Ouyang, Weiyi Wu, Jiang Gui* Feb – Jun 2024

Multimodal Question Answering · Audio-Video-Text Alignment · Multimodal Representation Learning

- This project is supported by the Department of Defense's Congressionally Directed Medical Research Programs (DOD CDMRP) Award HT9425-23-1-0267.
- Paper published at EMNLP 2024, one of the top three conferences in natural language processing. (Ranked A*)
- Helped to develop the **first** framework specifically designed for Audio-Visual Question Answering in music.
- Designed an algorithm to align music predictions with the temporal dimension by extracting beats and annotating peak values in audio tracks based on Beats Per Minute (BPM) changes.
- Deployed state-of-the-art deep learning models LAVisH and DG-SCT and evaluated them on two large-scale music performance datasets, MUSIC-AVQA and MUSIC-AVQA-v2.0, to ensure a fair comparison with our model.

Multimodal Social Media Bot Detection Using Heterogeneous Information **LSE**
(**Paper Link**) ***Tingxuan Wu****, Zhaorui Ma, Yanjun Cui, Ziyi Zhou, Eric Wang* May – Oct 2024

Multimodal Bot Detection · Visual Language Model · Multimodal Representation Learning

- Paper accepted at AAAI W3PHIAI-25, to be published in the Springer/Nature in Studies in Computational Intelligence.
- Proposed a one-stage end-to-end multimodal bot detection method that effectively integrates heterogeneous information (e.g., user information such as followers and friends, tweets, profile images) from social media.
- Designed a Cross-Modal Residual Cross-Attention (CMRCA) module to effectively handle the heterogeneous information of diverse data types in various application contexts.
- Achieved state-of-the-art on the TwiBot-22 dataset, surpassing the leading models by 6.17% in F1 score.

EMPLOYMENT

Founder Securities **Hangzhou, CN**
Quantitative Analyst Intern Jun – Aug 2024

- Designed and implemented a real-time analytics dashboard for Chinese government bonds, integrating key economic indicators (e.g., interest rates, CPI, unemployment rates, etc.) to enhance investment decision-making.
- Applied TBATS time series models to enhance short-term forecasting accuracy, incorporating confidence

intervals to improve predictive insights and quantify uncertainty in macroeconomic predictions.

- Addressed TBATS limitations in capturing complex seasonal patterns by employing multi-scale segmentation to enhance temporal resolution understanding and applying dual-attention mechanisms to capture long-term economic trends and short-term seasonal patterns.
- Conducted research on quantitative trading strategies, enhancing the quality of client reporting, and optimizing resource allocation for better business outcomes.
- Provided actionable insights for portfolio adjustments by leveraging predictive models to enhance risk management and minimize investment exposure.

Everbright Futures **Hangzhou, CN**
Quantitative Analyst Intern Sep – Oct 2022

- Forecasted soybean futures using multi-factor modeling to enhance forecast accuracy.
- Designed machine learning algorithms that integrate both technical and fundamental factors and optimized diverse portfolio strategies to improve performance while effectively reducing potential investment risks.
- Analyzed trade agreements' impact on commodity prices, aiding in the reduction of investment risks.
- Developed advanced price prediction models to improve decision making and strengthen portfolio reliability.
- Presented findings to stakeholders, influencing fund strategy adjustments that exceeded $1.5M.

Guosen Securities **Hangzhou, CN**
Wealth Management Intern July – Aug 2021

- Analyzed healthcare stocks and market trends, preparing reports that supported investment strategies and enhanced client communication for senior analysts.

SELECTED PROJECT

Statistical Analysis of Health Insurance Premium Determinants Dec 2023

- Conducted a comprehensive analysis of the determinants that influence health insurance premiums using R, leveraging a dataset with 1,338 observations from Kaggle.
- Performed exploratory data analysis (EDA) to identify patterns, outliers, and potential transformations, applying variable selection methods (forward, backward, stepwise) to refine predictors and enhance model accuracy.
- Developed multiple linear regression models, incorporating interaction terms and log transformations to improve both accuracy and interpretability of results relevant to healthcare pricing strategies.
- Diagnosed and resolved regression issues, including multicollinearity and heteroskedasticity, using variance inflation factor (VIF) checks and robust standard errors.
- Delivered a final model with an adjusted R^2 of 0.923, identifying significant factors such as age, BMI, smoking status, and geographic region as key determinants of health insurance premiums.
- Gained hands-on experience in statistical modeling, data visualization, and interpreting results to inform data-driven decision making in healthcare contexts.

EXTRACURRICULAR EXPERIENCE

London School of Economics Women in Business Society **London, UK**
Head of Events Sep 2023 – Jun 2024

- Managed an event team of 10 people that covered various roles, including logistics, marketing, participation, sponsorship acquisition, and content development.
- Planned workshops and career fairs attended by over 150 students and boosted career awareness while enhancing valuable networking opportunities with top industry leaders worldwide.
- Built strong relationships with industry professionals securing additional sponsorship funding and supported impactful events and innovative initiatives further expanding their overall reach globally.

London School of Economics Modern Language Society **London, UK**
Treasurer Sep 2023 – Jun 2024

- Managed a £2000 budget and achieved cost savings through efficient vendor negotiations.
- Secured funding for society events, resulting in increased participation and engagement.