Tian Xie

Last updated: May, 2026

Fields of Specialization

Ensemble Learning, Forecast Combination, and Model Averaging

Applied Econometrics for Data Science

Financial Volatility

Education

Queen's University, Canada 11/2013
Ph.D. (Economics)

Queen's University, Canada 10/2005
M.A. (Economics)

University of Western Ontario, Canada 10/2004
B.A. with High Honors (Economics)

Employment

Singapore Management University, Singapore 3/2026 – Present
– Associate Professor

Singapore Management University, Singapore 1/2019 – 3/2026
– Ajunct Professor

Shanghai University of Finance and Economics, China 7/2023 – 3/2026
– Professor
– Director of the Master of International Business (MIB) Program

Shanghai University of Finance and Economics, China 7/2020 – 7/2023
– Associate Professor

Shanghai University of Finance and Economics, China 7/2019 – 7/2020
– Assistant Professor

Xiamen University, China 9/2016 – 6/2019
– Assistant Professor

Wuhan University, China 9/2014 – 7/2016
– Assistant Professor

Queen's University, Canada 9/2010 – 6/2013
– Research Assistant: Frank Milne, James G. MacKinnon
– Teaching Assistant: Finance Theory, Advanced Macroeconomic Theory, Quantitative Methods, Advanced Econometrics

Teaching Experience

Singapore Management University, Singapore 1/2019 – Present
– Machine Learning in Economics and Finance (G)
– Advanced Machine Learning for Economics (G)
– Multimodal Data Analytics for Economics (G)

Shanghai University of Finance and Economics, China 9/2019 – 3/2026
– AI-driven Data Mining (U)
– Econometrics (U)
– Advanced Econometrics (G)
– Advanced Microeconomics (G)

Xiamen University, China 9/2016 – 6/2019
– Financial Risk Management (U)
– Econometrics (U)
– Advanced Econometrics (G)

Wuhan University, China 9/2014 – 7/2016
– Risk Assessment and Risk Management (U)
– Econometrics (U)
– Quantitative Economics (G)

Publications

1. "Application of Multi-Modal Artificial Intelligence Model in Policy Impact and Prediction of Housing Prices: A Case Study of Shenzhen's Second-Hand Housing Market" with Yue Qiu, Zhentao Shi, Yishu Wang, *Journal of Systems Science and Mathematical Science*, 2026, *Forthcoming*.

2. "What Lessons Should Canada Take on the Design of Public Data Exchanges?" with Steven F. Lehrer, *Canadian Public Policy*, 2026, vol. 52, 58-70

3. "On Perturbed Natural Adaptive Gradient Descent and Its Application in Portfolio Optimization" with Yi Cai, Huili Liang, Yue Qiu, Xiao Wang, and Zixuan Zhao, *Proceedings of the 28th European Conference on Artificial Intelligence*, 2025, vol.413, 2762-2769.

4. "Langevin Multiplicative Weights Update with Applications in Polynomial Portfolio Management" with Yi Feng and Xiao Wang, *Proceedings of the AAAI Conference on Artificial Intelligence*, 2025, vol.39, no.11, 11221-11228.

5. "ℓ_2-Relaxation: With Applications to Forecast Combination and Portfolio Analysis" with Zhentao Shi and Liangjun Su, *Review of Economics and Statistics*, 2025, vol.107, no.2, 523-538.

6. "Optimal Model Averaging Weights under Asymmetric Loss" with Xinmin Li, Hua Liang, Huihang Liu, and Tingting Tong, *Statistics and Computing*, 2025, vol.35, no.59, 1-27

7. "Predicting Cryptocurrency Volatility: the Power of Model Clustering." with Yue Qiu, Shaoguang Qu, and Zhentao Shi, *Economic Modelling*, 2025, vol.144, no.106986.

8. "Exploring Model Uncertainty in Cryptocurrency Volatility Prediction: Log-transformation, Time-zone Sampling, and Model Specification" with Yue Qiu, *Journal of Systems Science and Mathematical Science*, 2024, vol.44(3), 824-843.

9. "Federal Policy Announcements and Capital Reallocation: Insights from Inflow and Outflow Trends in the US" with Yue Qiu, Wenjing Xie, and Xiangzhong Zheng, *Journal of International Money and Finance*, 2023, vol.139, no.102936, 1-20.
10. "Correcting Sample Selection Bias with Model Averaging for Consumer Demand Forecasting" with Shangwei Zhao, Guanren Yang, and Xinyu Zhang, *Economic Modelling*, 2023, vol.123, no.106275.
11. "Global Factors and Stock Market Integration" with Yue Qiu and Yu Ren, *International Review of Economics and Finance*, 2022, vol.80, 526-551.
12. "The Bigger Picture: Are Analytics and Social Media Data the best Way to Predict Movie Success?" with Steven F. Lehrer, *Management Science*, 2022, vol.68, no.1, 189-210.
13. "Forecasting Equity Index Volatility by Measuring the Linkage among Component Stocks" with Yue Qiu, Jun Yu, and Qiankun Zhou, *Journal of Financial Econometrics*, 2022, vol.20, no.1, 160–186.
14. "Forecasting Bitcoin Realized Volatility by Measuring the Spillover Effect Among Cryptocurrencies" with Yue Qiu and Yifan Wang, *Economics Letters*, 2021, vol.208, no.110092, 1-5.
15. "Social Media Sentiment, Model Uncertainty, and Volatility Forecasting" with Steven F. Lehrer and Xinyu Zhang, *Economic Modelling*, 2021, vol.102, no.105556, 1-13.
16. "Does High Frequency Data Improve Our Confidence in Forecasts of Low Frequency Measures?" with Steven F. Lehrer and Tao Zeng, *Journal of Financial Econometrics*, 2021, vol.19, no.5, 910–933.
17. "Forecast Bitcoin Realized Volatility by Exploiting Measurement Error under Model Uncertainty" with Yue Qiu, Zongrun Wang, and Xinyu Zhang, *Journal of Empirical Finance*, 2021, vol. 62, 179-201.
18. "Forecasting Singapore GDP using SPF Data" with Jun Yu, *Macroeconometric Review*, 2020, vol.4, no.2, 112-121.
19. "Model Uncertainty of Cross-country Growth Empirics: Machine Learning Perspective" with Yan Liu, *China's Industrial Economics*, 2019, vol.12, 5-22.
20. "Forecast Bitcoin Volatility with Least Squares Model Averaging", *Econometrics*, 2019, vol.7, no.3, 40.
21. "Flexible HAR Model for Realized Volatility: A Model Averaging Perspective" with Yue Qiu, Xinyu Zhang, and Shangwei Zhao, *Journal of Management Science and Engineering*, 2019, vol.4, no.1, 55-73.
22. "Weighing the Asset Pricing Factors: A Least Squares Model Averaging Approach" with Yue Qiu and Yu Ren, *Quantitative Finance*, 2019, vol.19, no.10, 1673-1687.
23. "Machine Learning versus Econometrics: Prediction of Box Office" with Yan Liu , *Applied Economics Letter*, 2019, vol.26, no.2, 124-130.
24. "Consumption, Aggregate Wealth, and Expected Stock Returns: A Fractional Cointegration Approach" with Yu Ren, *Quantitative Finance*, 2018, vol.18, no.12, 2101-2112.
25. "Forecasting Foreign Exchange Realized Volatility: A Least Square Model Averaging Approach" with Yue Qiu, *Journal of Systems Science and Mathematical Science*, 2018, vol.38, no.6, 1-20.
26. "Box Office Buzz: Does Social Media Data Steal the Show from Model Uncertainty When Forecasting for Hollywood?" with Steven F. Lehrer, *Review of Economics and Statistics*, 2017, vol.99, no.2, pages 749-755 (lead article).
27. "Heteroscedasticity-robust Model Screening: A Useful Toolkit for Model Averaging in Big Data Analytics" *Economics Letters*, 2017, vol. 151, 119-122.
28. "Prediction Model Averaging Estimator", *Economics Letters*, 2015, vol. 131, 5-8.

Books and Chapters

"Quantitative Methods for International Finance" with Yue Qiu, 2025, *Shanghai University of Finance and Economics Press*.

"Do the Hype of the Benefits from Using New Data Science Tools Extend to Forecasting Extremely Volatile Assets?" with Steven F. Lehrer and Guanxi Yi, in *Data Science for Economics and Finance: Methodologies and Applications*, ed. by *Consoli, Recupero, and Saisana*, 2021, 287-330.

"Averaging Heterogeneous Autoregression Models with Heteroskedastic Errors: Theory and an Application to Cryptocurrency Volatility Forecasting" with Ziwen Gao, Steven F. Lehrer, and Xinyu Zhang, in *Advances in Econometrics: Essays in Honor of Subal Kumbhakar*, ed. by *Parmeter, Tsionas, and Wang*, 2024, vol.46, 99-131.

Professional Activities

Shanghai University of Finance and Economics, China 1/2024 – 3/2026
– Director of MIB: Promote AI-focused Courses, Capstone Projects, Industry Partnerships.

New Hope Group Co. Ltd., Finance Department, Shanghai 12/2024 –3/2026
– Data Consultant: AI-based Supply Chain Financing Optimization, Default Rate Forecast

Dongfeng Nissan Passenger Vehicle Company, Shanghai 7/2024 –3/2026
– Data Consultant: Multi-Modal Model Analysis, Market Sales Forecasting

People's Bank of China, China Financial Computerization Group, Beijing 12/2022 –3/2026
– Data Consultant: LLM Analysis of Government Policies, Default Rate Forecast

Societe General China, Shanghai Branch 12/2021 –12/2023
– Data Consultant: Market Timing Forecast, Risk Analysis, Cryptocurrency Assets Management

Crocs Industry Co. Ltd., China 1/2022 –6/2022
– Data Consultant: Big Data Analytics, Market Sales Forecast, Promotion Strategy Optimization

Longqi Scientific Investment, China 6/2019 – 5/2020
– Economist: Quantitative Analysis, Machine Learning Models

JANYS Analytics, U.S. 6/2013 – 7/2019
– Economist: Big Data Analytics, Data Polishing, Data Mining, Modelling

Xiamen University, China 1/2018 – 6/2019
– Director: WISE&SOE Study Abroad Program

Shanghai Holly Electronics Co. Ltd., China 1/2009 – 9/2010
– Financial Analyst: Market Analysis, Asset Pricing, Cash-Flow Monitoring

Awards, Honors, and Fellowships

Shanghai University of Finance and Economics, SHUFE Excellence Performance Award (2025)

Shanghai University of Finance and Economics, SHUFE Excellence Performance Award (2023)

Shanghai University of Finance and Economics, Shanghai Graduate Supervisor Training, Student of Excellence (2021)

Xiamen University, Xiamen University Teaching Skill Competition (English Division), 1st Prize (2017)

Xiamen University, WISE, Award for Excellence in English Teaching, 1st Prize (2017)

Wuhan University, EMS, Award for Top 10 Excellence in Teaching (2015)

Queen's University, School of Graduate Studies Conference Travel Award (CTA) (2011)

Queen's University, Arts and Science Graduate Growth Funding (2010, 2011)

Queen's University, Graduate Award (2006, 2007, 2008, 2010)

Queen's University, Skelton Clark Economics Fellowship (2005)

University of Western Ontario, Dean's Honor List (2002-2004)

Research Grants *(Principal Investigator only)*

Natural Science Foundation of China (72173075), *Completed* 2022–2025

Natural Science Foundation of Fujian Province (2018J01116), *Completed* 2018–2021

Natural Science Foundation of China (71701175), *Completed* 2018–2020

Chinese Ministry of Education Project of Humanities and Social Sciences (17YJC790174), *Completed* 2017–2020

Software Copyright and Patents

"Macroeconomic Factor Modeling Program Based on Fractional Cointegration (V1.0)", Software Copyright Registration No. 2025SR2064163, National Copyright Administration of China, Computer Software Copyright Registration Office, October 24, 2025.

"Economic Growth Factor Mining and Optimization Program under Model Uncertainty (V1.0)", Software Copyright Registration No. 2025SR2064173, National Copyright Administration of China, Computer Software Copyright Registration Office, October 24, 2025.

"Heterogeneous Mixed-Frequency Data Modeling and Forecasting Program (V1.0)", Software Copyright Registration No. 2025SR2063850, National Copyright Administration of China, Computer Software Copyright Registration Office, October 24, 2025.

"Combination Forecast Optimization Program with Euclidean Norm Relaxation (V1.0)", Software Copyright Registration No. 2025SR2063813, National Copyright Administration of China, Computer Software Copyright Registration Office, October 24, 2025.

"Movie Sales Forecasting Program Driven by Public Sentiment (V1.0)", Software Copyright Registration No. 2025SR2063827, National Copyright Administration of China, Computer Software Copyright Registration Office, October 24, 2025.

"Model Averaging Weight Optimization Program under Asymmetric Loss (V1.0)", Software Copyright Registration No. 2025SR2064036, National Copyright Administration of China, Computer Software Copyright Registration Office, October 24, 2025.

"Cryptocurrency Volatility Co-Movement Analysis Program (V1.0)", Software Copyright Registration No. 2025SR1586738, National Copyright Administration of China, Computer Software Copyright Registration Office, August 21, 2025.

"Cross-National Financial Market Integration Quantitative Analysis Program (V1.0)", Software Copyright Registration No. 2025SR1528015, National Copyright Administration of China, Computer Software Copyright Registration Office, August 13, 2025.

"Multi-Asset Volatility Forecasting Program Based on Dynamic Model Averaging Framework (V1.0)", Software Copyright Registration No. 2025SR1490467, National Copyright Administration of China, Computer Software Copyright Registration Office, August 08, 2025.

"Index Volatility Forecasting Program Based on Component Stock Co-Movement (V1.0)", Software Copyright Registration No. 2025SR1470765, National Copyright Administration of China, Computer Software Copyright Registration Office, August 06, 2025.

Referee Experience

Management Science
Journal of Royal Statistical Society
Journal of Econometrics
Journal of Business & Economic Statistics
Journal of Financial Econometrics
Journal of Empirical Finance
Econometric Theory
Canadian Journal of Economics
Quantitative Finance
Econometric Reviews
Economic Modelling
Journal of International Money and Finance
International Review of Economics and Finance
Economics Letters
Empirical Economics
Applied Economics
Finance Research Letters
Journal of Asian Economics
Asia-Pacific Journal of Financial Studies
Econometrics
Singapore Economic Review
Statistics in Medicine
Journal of Systems Science and Mathematical Science