Curriculum Vitae

Zhi LIU

Personal Information

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Education

Hong Kong University of Science & Technology

Ph.D. in Statistics, 2011. Thesis advisor: Bingyi JING

Lanzhou University, China

M.Sc. in Statistics, 2006

B.Sc. in Computational Mathematics, 2003

Research Interests

Statistics for Stochastic Processes, Financial Statistics, Bioinformatics, Statistical Learning

Working Experience

8/2024-Present	Full Professor, University of Macau
8/2018-7/2024	Associate Professor, University of Macau
8/2012-7/2018	Assistant Professor, University of Macau
9/2011-7/2012	Assistant Professor, Xiamen University
1/2011-8/2011	Research Associate, Hong Kong University of Science & Technology

Courses Taught

Advanced Probability (PG course), Fall, 2025

Nonparametric Statistics, Fall, 2022–2025

Data Mining and Statistical Learning, Spring, 2022–2023, Fall, 2024

Topics in Probability and Statistics (PG course), Spring, 2024, 2025

Mathematics for Artificial Intelligence (PG course for Computer Science), Spring, 2024, 2025

Time Series Analysis, Spring, 2015–2020, Fall, 2023

Linear Statistical Analysis, Spring, 2021, Fall, 2022

Advanced Statistics (PG course), Spring, 2022

Topics in Statistics and Data Science, Fall, 2021

Mathematical Modelling, Fall, 2013–2020

Large Sample Theory (PG course), Fall, 2019-2020

Stochastic Processes (PG course), Fall, 2014, 2018

Applied Statistics, Spring, 2014, 2018

Probability and Statistics, Spring, 2016, 2017

Statistical Methods in Engineering (Ph.D. course), Fall, 2014

Probability Theory, Fall, 2013

Engineering Mathematics, Spring, 2013

Calculus III, Fall, 2012

Ph.D Students Supervised

DAI Lichun (2025–)

GUO Aodong (2024–)

SUN Di (2024–)

JIANG Yu (2022–)

LIU Wenjing (2022–)

TANG Jingwei (2021–2025) Quantile regression method for time series and spatial-temporal forecasting. First Job: Assistant Professor, Hainan University

BAI Lu (2019–2024) Hybrid approaches in machine learning prediction. First Job: Assistant Professor, Xiamen University of Technology

ZHU Haibin (2019–2022) Statistical inferences for bivariate time-varying price staleness. First Job: Tenure-Track Assistant Professor, Jinan University

HE Lidan (2018–2021): Higher-order approximations and forecasts of volatility. First Job: Assistant Professor, Nanjing University of Information Science & Technology

LIU Qiang (2015–2018): Inference of spot volatilities under infinite variation jumps. First Job: Post-doctoral Fellow, National University of Singapore

WAN Yi (2015–2019): Jackknife empirical likelihood-based Tests. First Job: Data Scientist, Huawei Technologies Co. Ltd.

WANG Li (2014–2018): Realized Laplace Transform of volatility with microstructure noise. First Job: Assistant Professor, Macau University of Science and Technology

Master Students Supervised

QIU Boyu (2025–)

HU Liangyu, LU Yiming, CHEN Zijian, PENG Qianling (2024–)

XU Hantian, ZHOU Shunchao, HUNG Ka Wai (2023–2025)

SUN Di, AN Ruofan (2022–2024)

WONG Cho Him, DENG Wenlong, LI Rui, LIN Yang(2021–2023)

ZHUO Yihua (2020–2023)

LIU Wenjing (2020–2022)

CHE Senghon (2019-2023, part-time)

ZHU Baowen (2019–2022)

YIN Shu (2018–2021)

DONG Jianqiao, FU Binchao (2018–2020)

LIU Peixi (2017–2020)

HUANG Yuling, SUN Jing (2017–2019)

U Cheok Meng, DENG Min (2015–2018)

WANG Jianqing, LIU Yiming, WAN Yi, LIU Ziqian (2013–2015)

SHE Zihang, ZHOU Biting (2012–2014)

DONG Hui (2012–2013)

Research Grants

External Grants

8. Statistical Learning of Chronic Kidney Disease in Macau (10/01/2022-09/01/2024), The Science and Technology Development Fund, Macau SAR, FDCT0041/2021/ITP, MOP $424,000. Sole PI.
7. Statistical Inference of Distributions of Volatility with Applications (01/01/2020-31/12/2023), NSFC No.11971507, RMB ¥520,000. PI. (Co-PI: Jacky So, University of Macau)
6. Studying the Non-synchronous Trading under Ultra-high Frequency (25/5/2018-24/5/2021), The Science and Technology Development Fund, Macau SAR, FDCT202/2017/A3, MOP $917,000. Sole PI.
5. Efficient Estimation of Spot Volatility under General Jump Process (1/6/2017-31/5/2020), The Science and Technology Development Fund, Macau SAR, FDCT127/2016/A3, MOP $1,043,725. Sole PI.
4. Efficient Estimation of Volatility Matrix under Presence of Infinite Variation Jumps with Applications (1/1/2015-31/12/2017), NSFC No.11401607, RMB 220,000. PI. (Co-PI: Jacky So, University of Macau)
3. FDCT Special Equipment Fund, The Science and Technology Development Fund, Macau SAR, FDCT043/2014/SA, MOP $204,120.
2. Inference on Volatility Matrix of Big Data with Applications, (1/6/2014-31/5/2017), The Science and Technology Development Fund, Macau SAR, FDCT078/2013/A3, MOP $1,171,000. Sole PI.

1. Statistical Inference of High-Frequency Data with Implementation (1/6/2013-31/12/2015), The Science and Technology Development Fund, Macau SAR, FDCT078/2012/A3, MOP $734,000. PI. (Co-PIs, XIONG Jie, DING Deng and SHU Lianjie, University of Macau).

Internal Grants

11. Joint distribution of the multivariate volatility under high frequency data, (1/1/2026-31/12/2027), MYRG from University of Macau, MYRG-GRG2025-00093-FST, MOP$320,000. Sole PI.
10. Limiting theory of realized multivariate volatility with microstructure noise and price staleness, (1/1/2025-31/12/2026), MYRG from University of Macau, MYRG-GRG2024-00190-FST-UMDF, MOP$520,000. Sole PI.
9. Effect of price staleness on the asymptotic behavior of realized covariance, (1/1/2024-31/12/2025), MYRG from University of Macau, MYRG-GRG2023-00036-FST-UMDF, MOP$320,000. Sole PI.
8. Inference of price staleness with applications to high-frequency trading, (1/1/2023-31/12/2024), MYRG from University of Macau, MYRG2022-00118-FST, MOP$544,000. Sole PI.
7. Statistical inference of spot correlation and spot market Beta under infinite variation jumps, (1/1/2022-31/12/2023), MYRG2020-00227-FST, MOP $600,000. Sole PI.
6. Joint Laplace Transform of Volatility Matrix, (1/1/2019-31/12/2021), MYRG from University of Macau, MYRG2018-00107-FST, MOP $588,000. Sole PI.
5. Inference on High-Frequency Data: Some New Problems, (1/4/2015-31/3/2018), MYRG from University of Macau, MYRG2015-00184-FST, MOP $840,000. Sole PI.
4. Inference on Volatility Matrix of Big Data with Applications, (24/6/2014-23/6/2017), Matching fund from University of Macau, MRG024/LZ/2014/FST, MOP $390,000. Sole PI.
3. Studying Higher Order Moments of Daily Returns under High Frequency, (1/4/2014-31/3/2017), MYRG from University of Macau, MYRG2014-00001-FST, MOP $840,000. Sole PI.
2. Statistical Inference of High-Frequency Data with Implementation, (1/8/2013-31/7/2015), Matching fund from University of Macau, MRG009/LZ/2013/FST, MOP $244,500. Sole PI.
1. Statistical Inference of Semi-martingale with High-Frequency Data, (1/11/2012-31/10/2013), Startup fund from University of Macau, SRG023-FST12-LZ, MOP $100,000. Sole PI.

Conference Grants

5. 10th conference of the IASC-ARS/68th Annual NZSA Conference (11–15/12/2017), CGFST027-2017-LZ, MOP$19,770.
4. Asian Finance Association Annual Meeting (25–28/6/2016), CGFST008-2016-LZ, MOP$10,520.
3. World Finance Conference (2–4/7/2014), CG023-FST2014-LZ, MOP$20,400.
2. World Finance & Banking Symposium (16–17/12/2013), CG197-FST2013-LZ, MOP$11,850.
1. Asian Finance Association Annual Meeting (15–17/7/2013), CG121-FST2013-LZ, MOP$11,300.

Publications

Refereed Journal Articles

70. FENG Xinwei, JIANG Yu, **LIU Zhi** and MENG Zhe (2025). Central Limit Theorem of the Joint Realized Laplace Transform of Volatilities with Overlapped Increments. *Quantitative Finance*. Accepted.
69. LIU Wenjing, **LIU Zhi** and ZHU Haibin (2025). Statistical inference of multivariate price staleness. *Statistics and Its Interface*. To appear.
68. CHENG, Guanghui, **LIU Zhi** and XIONG Qiang (2025). Testing Equality of Two High-Dimensional Correlation Matrices. *Communications in Mathematics and Statistics*. To appear.
67. FENG Xinwei, JIANG Yu, **LIU Zhi** and MENG Zhe (2025). Moderate Deviation Principles of Realized Joint Laplace Transform of Volatilities with Overlapped Increments, *Stochastic Analysis and Applications*, accepted.

66. LIU Wenjing, **LIU Zhi** (2025). Kernel Copula Density Estimation of Hellinger Correlation. *Journal of Statistical Theory and Practice*. 19, 27.
65. Ulrich Hounyo, **LIU Zhi** and Rasmus Tangsgaard Varneskov (2025). A Modified Wild Bootstrap Procedure for Laplace Transforms of Volatility. *Economics Letters*. 247, 112117.
64. HE Lidan, LIU Qiang, **LIU Zhi** and Andrea Bucci (2024). Correcting spot power variation estimator via Edgeworth expansion, *Metrika.* 87, 921-945.
63. LIU Qiang and **LIU Zhi** (2024). Estimating the spot volatility under infinite variation jumps with microstructure noise, *The Econometrics Journal.* 27(2), 278-298.
62. HU Jianming, TANG Jingwei and **LIU Zhi** (2024). A novel time series probabilistic prediction approach based on the monotone quantile regression neural network, *Information Sciences.* 654, 119844.
61. TANG Jingwei, **LIU Zhi** and HU Jianming (2024). Spatial-Temporal Wind Power Probabilistic Forecasting Based on Time-Aware Graph Convolutional Network. *IEEE Transactions on Sustainable Energy.* 15(3), 1946-1956.
60. ZHU Haibin and **LIU Zhi** (2024). On bivariate time-varying price staleness, *Journal of Business & Economic Statistics.* 42, 229-242.
59. Andrea Bucci, HE Lidan and **LIU Zhi** (2023). Combining dimensionality reduction methods with neural networks for realized volatility forecasting. *Annals of Operations Research*. Forthcoming.
58. ZHU Haibin, BAI Lu, HE Lidan and **LIU Zhi** (2023). Forecasting Realized Volatility with Machine Learning: Panel Data Perspective. *Journal of Empirical Finance*. 73, 251-271.
57. PENG Hongquan, LIU Xun, IEONG Chiwaao, TOU Tou, TSAI Tsungyang, ZHU Haibin, **LIU Zhi** and LIU Peijia (2023). A Metabolomics Study of Metabolites Associated with the Glomerular Filtration Rate. *BMC Nephrology*. 24, 105.
56. Ulrich Hounyo, **LIU Zhi** and Rasmus Tangsgaard Varneskov (2023). Bootstrapping Realized Laplace Transform of Volatility, *Quantitative Economics*. 14(3), 1059-1103.
55. GUO Guoxiang, QI Yuanyuan, LAI Sirui, **LIU Zhi** and YEN Joseph (2023). The Latency Accuracy Trade-off and Optimization in Implied Volatility-based Trading System? *Expert Systems with Applications*, 221, 119714.
54. HU Jianming, ZHANG Liping, TANG Jingwei and **LIU Zhi** (2023). A novel transformer ordinal regression network with label diversity for wind power ramp events forecasting. *Energy*. 128075.
53. LIU Qiang and **LIU Zhi** (2022). Statistical inference of spot correlation and spot market Beta under infinite variation jumps, *Journal of Financial Econometrics*, 20, 612-654.
52. PENG Hongquan, LIU Xun, IEONG Chiwaao, TOU Tou, TSAI Tsungyang, NGAI Kamleong, CHEANG Haoi, ZHU Haibin, **LIU Zhi** and LIU Peijia (2022). Identification of metabolite markers associated with kidney function, *Journal of Immunology Research*, 6190333.
51. FENG Xinwei, HE Lidan and **LIU Zhi** (2022). Large deviation principles of realized Laplace transform of volatility, *Journal of Theoretical Probability*, 35, 186–208.
50. BAI Lu, **LIU Zhi** and WANG Jianzhou (2022). Novel hybrid extreme learning machine and multi-objective optimization algorithm for air pollution prediction, *Applied Mathematical Modelling*, 106, 177-198.
49. LIU Qiang, **LIU Zhi** and ZHANG Chuanhai (2022). Heteroscedasticity test of high-frequency data with jumps and market microstructure noise, *Applied Stochastic Models in Business and Industry*, 38(3), 441-457.
48. CHENG Guanghui, **LIU Zhi** and PENG Liuhua (2022). Gaussian approximations for high-dimensional non-degenerate U-statistics via exchangeable pairs, *Statistics and Probability Letters*, 182, 109295.
47. PENG Hongquan, ZHU Haibin, IEONG Chi Wa Ao, TAO Tao, TSAI Tsung Yang, **LIU Zhi** (2021). A Two-stage Neural Network Prediction of Chronic Kidney Disease, *IET Systems Biology*, 15, 163-171.
46. ZHANG Chuanhai, **LIU Zhi** and LIU Qiang (2021). Jumps at ultra-high frequency: Evidence from the Chinese stock market, *Pacific-Basin Finance Journal*, 68, 101420.

45. CHENG Cong-hua and **LIU Zhi** (2021). Empirical likelihood ratio under infinite covariance matrix of the random vectors, *Communication in Statistics-Theory and Methods*, 50(18), 4300-4307.
44. HE Lidan, LIU Qiang and **LIU Zhi** (2020). Edgeworth corrections for spot volatility estimator, *Statistics and Probability Letters*, 164, 108809.
43. DING Li-zhong, **LIU Zhi**, LI Yu, LIAO Shi-zhong, LIU Yong, YANG Peng, YU Ge, SHAO Ling and GAO Xin (2019). Linear Kernel Tests via Empirical Likelihood for High-Dimensional Data, *Proceedings of the 33rd International Joint Conference on Artificial Intelligence (AAAI2019)*. Acceptance rate: 16.2%
42. WANG Li, **LIU Zhi** and XIA Xiao-chao (2019). Rate efficient estimation of realized Laplace transform of volatility with microstructure noise, *Scandinavian Journal of Statistics*, 46(3), 920-953.
41. Yuta KOIKE and **LIU Zhi** (2019). Asymptotic properties of the realized skewness and related statistics, *Annals of the Institute of Statistical Mathematics*, 71(4), 703-741.
40. KONG Xin-bing, **LIU Zhi** and ZHOU Wang (2019). A rank test for the number of factors with high-frequency data, *Journal of Econometrics*, 211(2), 439-460.
39. LIU Yi-ming, **LIU Zhi** and ZHOU Wang (2019). A test for equality of two distributions via integrating characteristic functions, *Statistica Sinica*, 29, 1779-1801.
38. HU Jiang, LI Wei-ming, **LIU Zhi** and ZHOU Wang (2019). High-dimensional covariance matrices in elliptical distributions with application to spherical test, *Annals of Statistics*, 47(1), 527-555.
37. XIA Xiao-chao and **LIU Zhi** (2019). Balanced augmented empirical likelihood for regression models, *Journal of the Korean Statistical Society*, 48(2), 233-247.
36. WANG Li, **LIU Zhi** and XIA Xiaochao (2019). Realized Laplace Transforms for Pure Jump Semi-martingales with Presence of Microstructure Noise, *Soft Computing*, 23(14), 5739-5752.
35. WAN Yi, **LIU Zhi** and DENG Min (2018). Empirical-likelihood-based test for equality of two distributions using the distance of characteristic functions, *Statistics*, 52(6), 1379-1394.
34. **LIU Zhi**, XIA Xiaochao, ZHOU Guoliang (2018). Pre-averaging estimate of the high-dimensional integrated covariance matrix with noisy and asynchronous high-frequency data. *Random Matrices: Theory and Applications*, 7(2), 1850005 (16 pages).
33. LIU Qiang, LIU Yiqi and **LIU Zhi**, WANG Li (2018). Estimation of spot volatility with superposed noisy data, *North American Journal of Economics and Finance*, 44, 62-79.
32. **LIU Zhi**, KONG Xin-bing and JING Bing-yi (2018). Estimating the integrated volatility using high-frequency data with zero durations, *Journal of Econometrics*, 204, 18-32.
31. CHENG Cong-hua, LIU Yi-ming, **LIU Zhi** and ZHOU Wang (2018). Balanced augmented Jackknife Empirical Likelihood for two-sample U-Statistics. *SCIENCE CHINA Mathematics*, 61, 1129-1138.
30. LIU Qiang, LIU Yi-qi and **LIU Zhi** (2018). Estimating spot volatility in the presence of infinite variation jumps, *Stochastic Processes and their Applications*, 128, 1958-1987.
29. KONG Xin-bing, **LIU Zhi**, ZHAO Peng and ZHOU Wang (2017). SURE estimates under dependence and heteroscedasticity, *Journal of Multivariate Analysis*, 161, 1-11.
28. LIU Yi-qi, LIU Qiang, **LIU Zhi** and DING Deng (2017). Determining the integrated volatility via limit order books with multiple records. *Quantitative Finance*, 17(11), 1697-1714.
27. LI Zhou-ping, LIU Yi-ming and **LIU Zhi** (2017). The empirical likelihood and general relative error criterion with divergent dimensions. *Statistics*, 51(5), 1006-1022.
26. LAI Peng, SONG Feng-li, CHEN Kai-wen and **LIU Zhi** (2017). Model-free feature screening with the dependent variable in ultrahigh dimensional binary classification. *Statistics & Probability Letters*, 125, 141-148.
25. CAI Zong-wu, JING Bing-yi, KONG Xin-bing and **LIU Zhi** (2017). Nonparametric regression with nearly integrated regressors under long-run dependence. *The Econometrics Journal*, 20(1), 118-138.
24. KONG Xin-bing, **LIU Zhi**, YAO Yuan and ZHOU Wang (2017). Sure screening by ranking the canonical correlations. *TEST*, 26(1), 46-70.

23. **LIU Zhi** (2017). Jump-robust estimation of volatility with the simultaneous presence of microstructure noise and multiple observations. *Finance and Stochastics*, 21(2), 427-469.
22. JING Bing-yi, **LIU Zhi** and KONG Xin-bing (2017). Estimating the volatility functionals with multiple transactions. *Econometric Theory*, 33(2), 331-365.
21. LAI Peng, LIU Yi-ming, **LIU Zhi** and WAN Yi (2017). Model-free feature screening for ultrahigh dimensional data with responses missing at random. *Computational Statistics & Data Analysis*, 105, 201-216.
20. CHENG Cong-hua, LIU Yi-ming and **LIU Zhi** (2017). Empirical likelihood ratio under infinite second moment. *Communication in Statistics-Theory and Methods*, 46(14), 6909-6915.
19. CHENG Cong-hua, **LIU Zhi** and WAN Yi (2017). Empirical likelihood for compound Poisson processes under infinite second moment. *Communication in Statistics-Theory and Methods*, 46(17), 8618-8627.
18. LI Wei-ming and **LIU Zhi** (2016). A test for the complete independence of high-dimensional random vectors. *Journal of Statistical Computation and Simulation*, 86(16), 3135-3140.
17. XIA Xiao-chao, **LIU Zhi** and YANG Hu (2016). Regularized estimation for the least absolute relative error models with a diverging number of covariates. *Computational Statistics & Data Analysis*, 96, 104-119.
16. **LIU Zhi** (2016). Estimating integrated co-volatility with partially miss-ordered high-frequency data. *Statistical Inference for Stochastic Processes*, 19(2), 175-197.
15. **LIU Zhi**, XIA Xiao-chao and ZHOU Wang (2015). A test for equality of two distributions via jackknife empirical likelihood and characteristic functions. *Computational Statistics & Data Analysis*, 92, 97-114.
14. YIN Ju-liang, DING Deng, **LIU Zhi** and Suiyang KHOO (2015). Some properties of finite-time stable stochastic nonlinear systems. *Applied Mathematics and Computation*, 259, 686-697.
13. KONG Xin-bing, **LIU Zhi** and JING Bing-yi (2015). Testing for pure-jump processes for high-frequency data. *Annals of Statistics*, 43(2), 847-877.
12. LI Cui-xia, CHEN Jin-yuan, **LIU Zhi** and JING Bing-yi (2014). On integrated volatility of Itô semi-martingales when sampling times are endogenous. *Communication in Statistics-Theory and Methods*, 43, 5263-5275.
11. JING Bing-yi, **LIU Zhi** and KONG Xin-bing (2014). On the estimation of integrated volatility with jumps and microstructure noise. *Journal of Business & Economic Statistics*, 32(3), 457-467. *The article was the JBES Invited Address presented at the Joint Statistical Meetings, Boston, Massachusetts, August 2-7, 2014*
10. JING Bing-yi, KONG Xin-bing, **LIU Zhi** and ZHANG Bo (2013). Evaluating the hedging error in price processes with jumps present. *Statistics and Its Interface*, 6(4), 413-425.
9. JING Bing-yi, LI Cui-xia and **LIU Zhi** (2013). On estimating the integrated co-volatility using noisy high-frequency data with jumps. *Communication in Statistics-Theory and Methods*, 42(21), 3889-3901.
8. WANG Kent, LIU Jun-wei and **LIU Zhi** (2013). Disentangling the effect of jumps on systematic risk with a new estimator of integrated co-volatility. *Journal of Banking and Finance*, 37, 1777-1786.
7. Abbas AHMED, KONG Xin-bing, **LIU Zhi**, JING Bing-yi and GAO Xin (2013). Automatic peak selection by a Benjamini-Hochberg-based algorithm. *PLoS ONE, 8(1): e53112. DOI: 10.1371/journal.pone.0053112.*
6. **LIU Zhi**, Abbas AHMED, JING Bing-yi and GAO Xin (2012). WaVPeak: picking NMR peaks through wavelet transform and volume-based filtering. *Bioinformatics*, 28(7), 914-920.
5. JING Bing-yi, KONG Xin-bing and **LIU Zhi** (2012). Modeling high-frequency financial data by pure jump processes. *Annals of Statistics*, 40(2), 759-784.
4. JING Bing-yi, KONG Xin-bing, **LIU Zhi** and Per MYKLAND (2012). On the jump activity index for semi-martingales. *Journal of Econometrics*, 166(2), 213-223.
3. JING Bing-yi, KONG Xin-bing and **LIU Zhi** (2011). Estimating the jump activity index under noisy observations using high-frequency data. *Journal of the American Statistical Association*, 106, 558-568.

2. JING Bing-yi, **LIU Zhi** and KONG Xin-bing (2010). Testing for diffusion in a discretely observed semi-martingale. *Journal of the Korean Statistical Society*, 39(3), 357-370.
1. JING Bing-yi, KONG Xin-bing, **LIU Zhi** and ZHANG Bo (2009). Stochastic regression and its application to hedging in finance. *SCIENCE CHINA Mathematics*, 52(6), 1365-1372.

Manuscripts

6. WANG Li, LIU Qiang and **LIU Zhi** (2024). On estimating realized joint Laplace transform of volatilities with noisy high-frequency data, Submitted.
5. ZHU Haibin, LIU Qiang and **LIU Zhi** (2024). Estimating volatility functionals with time-varying price staleness, *Econometric Theory*. Under revision.
4. Kim Christensen, Ulrich Hounyo and **LIU Zhi** (2024). A nonparametric test for diurnal variation in intraday correlation processes, *Quantitative Economics*. Under revision.
3. **LIU Zhi** and ZHU Haibin (2023). Bias-corrected realized covariation in the presence of price staleness. *to be submitted*.
2. LIU Pengfei, LIU Yiming, **LIU Zhi** and ZHOU Wang (2024). The quantile-based empirical likelihood for the ROC curves. *Statistical Methods in Medical Research*. Under review.
1. Ulrich Hounyo, **LIU Zhi** and Rasmus Tangsgaard Varneskov (2019). Bootstrapping Regularized Realized Laplace Transform of Volatility, working paper.

Services

University and Faculty service

12. Department executive committee (2019–present)
11. Department discipline leader of Probability and Statistics (2013-present)
10. Member of Master Students Recruitment Committee (2012-present)
    Duty: select master candidates by reviewing the application material and interviewing the applicants.
9. Member of Ph.D. students Recruitment Committee (2014, 2015, 2018-present)
    Duty: select the Ph.D. candidates by verifying the qualifications of the applicants and informing the potential supervisor.
8. Member of Department Self-Review Report Drafting Committee (2014-2015)
    Duty: draft Chapters 7-8 for the Self-Review Report of the Department of Mathematics.
7. Chair of Mathematical Modeling Advisory Committee (2012-present)
    Duty: lead the students to form teams to participate in the modeling contests in Mathematics in China and USA, train the participants with techniques and methods commonly used in the modeling, assist the students in registering for the contests, prepare the reports, and submit the final solutions. So far, 5 teams (12 students) have received prizes.
6. Affiliate of East Asia College (2015-present)
5. Supervisor committee of final year project of Honours College (2015, 2016)
    Duty: Jointly supervise the students with Prof. Kai Meng MOK to conduct the project on the case data of Kiangwu Hospital of Macau.
4. Supervisor of final year project of Department of Mathematics (2016–)
3. Member of New Staff Committee (2012)
2. Member of University Staff Basket Ball Team (2013-2014)
1. Member of the organization committee of the 2015 UM Workshop on Probability and Statistics (2015)

External service

Professional Societies

4. Member of Institute of Mathematical Statistics
3. Member of The Econometric Society
2. Member of The Society of Financial Econometrics

1. Reviewer of Mathematical Review Database

Anonymous referee for the Journals

Annals of Statistics, Journal of the American Statistical Association, Scandinavian Journal of Statistics, Statistica Sinica, Annals of the Institute of Statistical Mathematics, Journal of Multivariate Analysis, Electrical Journal of Probability, Random Matrix-Theory and Applications, Probability in the Engineering and Informational Sciences, Electrical Journal of Statistics, TESTs, Computational Statistics and Data Analysis, Journal of Statistical Computation and Simulation, Statistical Analysis and Data Mining, Metrika, Statistics, Statistical Theory and Related Fields, Science China Mathematics, Journal of Statistical Planning and Inference, Statistics and Probability Letters, Applied Mathematics–a Journal of Chinese Universities, Communication in Statistics–Theory and Method, Communication in Statistics–Simulation and Computation, Journal of Econometrics, Journal of Business and Economic Statistics, Econometric Theory, Econometrics Reviews, Journal of Forecasting, Journal of Time Series Analysis, The North American Journal of Economics and Finance, Singapore Economic Reviews, Emerging Markets Finance and Trade, Accounting and Finance, Economics Research International, Studies in Economics and Finance, Soft Computing, Briefings in Bioinformatics, Foundations of Data Science, Mathematical Biosciences and Engineering, Atmosphere, Entropy, Applied Sciences, Probability Uncertainty and Quantitative Risk, Review of Asset Pricing Studies.

Invited talks and presentations

42. 10th AUT Mathematical Modelling and Analytics Symposium, Auckland, New Zealand, November 2025. (Invited)
41. The 13th Conference of the IASC-ARS (IASC-ARS 2025), Ho Chi Minh City, Vietnam, December 2025. (Invited)
40. The 2nd HKUST IAS-SBM Joint Workshop on Financial Econometrics in the Big Data Era, August 2025. (Invited)
39. The 3rd Joint Conference on Statistics and Data Science in China, Hangzhou, China, July 2025. (Invited)
38. 2024 IMS-China International Conference on Statistics and Probability, Yinchuan, China, July 2024. (Invited)
37. The 3^{rd} Lilac International Conference on Application of Statistics, Harbin, China, May 2019. (Invited)
36. 2019 IMS-China International Conference on Statistics and Probability, Dalian, China, July 2019. (Invited)
35. The 3^{rd} International Conference on Econometrics and Statistics, Taichung, Taiwan, June 2019 (Invited)
34. The 2019 Lanzhou University International Forum on Statistics, May 2019.
33. The 5^{th} IMS-Asia Pacific Rim Meeting, Singapore, June 2018 (Invited speaker in Distinguished Session)
32. The 8^{th} International Statistics Forum at Renmin University, Beijing, China, July 2018. (Invited)
31. The Computational and Statistical Interface to Big Data Conference, KAUST, Jeddah, Saudi, March 2018. (Invited)
30. 2017 IASC-ARS Conference, Auckland, New Zealand, Dec 2017. (Invited)
29. 2017 IMS-China International Conference on Statistics and Probability, Nanning, China, July 2017. (Invited)
28. The 10^{th} ICSA International Conference, Shanghai, China, December 2016. (Invited)
27. 10^{th} cross-strait conference, Chengdu, China, August 2016. (Invited)
26. The 7^{th} International Statistics Forum at Renmin University, Beijing, China, May 2016. (Invited)
25. 2016 Asian Finance Association Annual Meeting, Bangkok, Thailand, June 2016
24. International Symposium of Financial Engineering and Risk Management (FERM2016), Guangzhou, China, June 2016. (Invited)
23. The 4^{th} IMS-Asia Pacific Rim Meeting, Hong Kong, June 2016 (Invited)

22. 2015 IMS-China International Conference on Statistics and Probability, Kunming, China, July 2015. (Invited)
21. International Symposium on Differential Equations and Stochastic Analysis in Mathematical Finance, Sanya, China, July 2014
20. World Finance Conference, Venice, Italy, July 2014
19. The 10^{th} International Symposium on Econometric Theory and Application, Taipei, Taiwan, May 2014
18. The 6^{th} International Statistics Forum at Renmin University, Beijing, China, May 2014. (Invited)
17. World Finance & Banking Symposium, Beijing, China, December 2013
16. National Youth Forum on Statistics, Xuzhou, China, November 2013. (Invited)
15. Second Lanzhou International Forum on Statistics, Lanzhou, China, August 2013. (Invited)
14. 59^{th} World Statistics Congress, Hong Kong, August 2013
13. 2013 Asian Finance Association Annual Meeting, Nanchang, China, July 2013
12. IMS-SWUFE International Conference on Statistics and Probability, Chengdu, China, July 2013
11. The Fourth Workshop on Numerical Algebra and High-Performance Computation, Macau, December 2012. (Invited)
10. The fifth International Conference on Statistics and Society, Beijing, China, July 2012. (Invited)
9. The third XMU-Humboldt Workshop on Nonparametric and Non-stationary Econometrics, Xiamen, China, May 2012. (Invited)
8. First Lanzhou International Forum on Statistics, Lanzhou, China, July 2011. (Invited)
7. The Econometric Society Australasian Meeting, Adelaide, Australia, July 2011. (Invited)
6. The 8^{th} ICSA International Conference, Guangzhou, China, December 2010. (Invited)
5. The 4^{th} International Conference on Statistics and Society, Beijing, China, July 2010.
4. International Symposium of Financial Engineering and Risk Management (FERM2010), Taipei, Taiwan, June 2010.
3. International Symposium of Risk Management and Derivatives, Xiamen, China, July 2009.
2. The 1^{st} IMS-Asia Pacific Rim Meeting, Seoul, Korea, June 2009.
1. The 1^{st} IMS-China International Conference of Statistics and Probability, Beijing, China, July 2005.

Seminars

18. Testing for Equality of Distributions via Empirical Likelihood, King Abdullah University of Science and Technology, Saudi Arabia, 01/11/2017
17. Introduction of financial big data, Zhejiang University of Technology, China, 19/05/2017
16. Estimating the integrated volatility using high-frequency data with zero durations, South China University of Science and Technology, China, 05/12/2016
15. Estimating the spot volatility in the presence of infinite variation jumps, King Abdullah University of Science and Technology, Saudi Arabia, 15/12/2016
14. Estimating the spot volatility in the presence of infinite variation jumps, University of New South Wales, Australia, 28/07/2016
13. A Tale of Two Averagings: Estimating the Integrated Volatility using "pooled" High-Frequency Data, Nanyang Technological University, Singapore, 07/07/2015
12. Measuring realized skewness at high frequency, Renmin University of China, 09/06/2015
11. Realized Laplace Transform with Microstructure noise, Sochoow University, China, 28/05/2015
10. Limiting theory of higher order variations of semi-martingale under infilled time series, King Abdullah University of Science and Technology, Saudi Arabia, 6/4/2015
9. Modelling high-frequency data with continuous time models, Jiangsu Normal University, China, 23/12/2014
8. Measuring realized skewness at high frequency, Lingnan Normal University, China, 17/12/2014
7. Measuring realized skewness at high frequency, Chongqing University, China, 2/12/2014
6. Measuring realized skewness at high frequency, Lanzhou University, China, 14/11/2014

5. Measuring realized skewness at high frequency, Jiangsu Normal University, China, 19/6/2014
4. Measuring realized skewness at high frequency, Fudan University, China, 17/6/2014
3. Disentangling the Effect of Jumps on Systematic Risk with a New Estimator of Integrated Co-Volatility, Fudan University, China, 24/3/2013
2. Continuous-time volatility estimation, Xiamen University, China, 15/5/2012
1. Volatility estimation with high-frequency data, Harbin Institute of Technology Shenzhen Graduate School, China, 11/4/2011

Awards

FST Research Excellence Award, 2025, University of Macau.

全國大學生數學建模競賽三十週年服務銀質紀念獎章, 2022

FST Teaching Excellence Award, 2021, University of Macau.

全國大學生數學建模競賽優秀指導教師, 2017(二十五週年), 2022(三十週年)

FST Research Excellence Award, 2017, University of Macau.

Travel grant award for PIMs, Mathematical Science Research Institute, Berkeley, CA, USA, 2010

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