Jingyu He

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SSRN: http://papers.ssrn.com/author=2636615

Research Interests

FinTech, Machine Learning, Tree, Empirical Asset Pricing, Bayesian Statistics, Causal Inference.

Employment

City University of Hong Kong

2020-now Assistant Professor of Business Statistics, College of Business.

2021-now Affiliate Faculty, School of Data Science.

Other Affiliations

2022-now Junior Research Fellow, FinTech Initiative, Cornell University.

2023-now Scientist, Laboratory for AI-Powered Financial Technologies.

Education

2016-2020 Ph.D., Stevens Doctoral Program and M.B.A., The University of Chicago Booth School of Business.

Advisors: P. Richard Hahn and Nicholas Polson. Major: Econometrics and Statistics.

2014-2016 M.S. in Statistics, The University of Chicago.

2010-2014 B.S. in Statistics, University of Science and Technology of China.

Publications

Finance and Econometrics

2024 Lin William Cong, Guanhao Feng, Jingyu He and Xin He. Growing the Efficient Frontier on Panel Trees. Forthcoming, *Journal of Financial Economics*.

2022 INQUIRE Europe Research Award

2024 IQAM Research Prize, 3rd Research Prize Award

2023 Guanhao Feng, Jingyu He, Nicholas Polson and Jianeng Xu. Deep Learning in Characteristics-Sorted Factor

Models. Forthcoming, *Journal of Financial and Quantitative Analysis.*

Unigestion Alternative Risk Premia Research Grant Award

2019 Crowell Prize, Second Prize

2019 INQUIRE Europe Research Grant Award

2022 Guanhao Feng, Jingyu He. Factor Investing: A Bayesian Hierarchical Approach. *Journal of Econometrics*, 230.1 (2022): 183-200.

2018 P. Richard Hahn, Carlos M. Carvalho, Jingyu He and David Puelz. Regularization and confounding in linear regression for treatment effect estimation. *Bayesian Analysis*, 13.1 (2018): 163-182.

2018 P. Richard Hahn, Jingyu He and Hedibert Lopes. Bayesian factor model shrinkage for linear IV regression with many instruments. *Journal of Business and Economic Statistics*, 36.2 (2018): 278-287.

Statistics and Machine Learning

2023 Jingyu He, P. Richard Hahn. Stochastic tree ensembles for regularized nonlinear regression. *Journal of the American Statistical Association*, 118.541 (2023): 551-570.

2023 Meijia Wang, Jingyu He and P. Richard Hahn. Local Gaussian process extrapolation for BART models with applications to causal inference. Forthcoming, *Journal of Computational and Graphical Statistics.*

2023 Erina Paul, Jingyu He and Himel Mallick. Accelerated Bayesian Reciprocal LASSO. Forthcoming, *Communications in Statistics.*

2023 Nikolay Krantsevich, Jingyu He, and P. Richard Hahn. Stochastic tree ensembles for estimating heterogeneous treatment effects. *The 26th International Conference on Artificial Intelligence and Statistics (AISTATS)*, 2023.

2019 P. Richard Hahn, Jingyu He and Hedibert Lopes. Efficient sampling for Gaussian linear regression with arbitrary priors. *Journal of Computational and Graphical Statistics*, 28.1 (2019): 142-154.

2019 Jingyu He, Saar Yalov and P. Richard Hahn. XBART: Accelerated Bayesian additive regression trees. *The 22nd International Conference on Artificial Intelligence and Statistics (AISTATS)*, 2019.

Working Paper

2024 Jingyu He and Junye Li. Heteroskedastic SDF and Learning about Time-Varying Factor Risk Premia.

2024 Siyu Bie, Francis X. Diebold, Jingyu He and Junye Li. Machine Learning and the Yield Curve: Tree-Based Macroeconomic Regime Switching.

2024 Guanhao Feng, Jingyu He, Junye Li, Lucio Sarno and Qianshu Zhang. Currency Return Dynamics: What Is the Role of U.S. Macroeconomic Regimes?

2024 Lin William Cong, Guanhao Feng, Jingyu He and Yuanzhi Wang. Mosaics of Predictability.

2023 Lin William Cong, Guanhao Feng, Jingyu He and Junye Li. Uncommon Factors and Asset Heterogeneity in the Cross Section and Time Series, *NBER working paper No. w31424.*

Best paper award, 2024 China Fintech Research Conference

2022 Jingyu He, Nicholas Polson and Jianeng Xu. Data Augmentation with Pólya Inverse Gamma. Revise and resubmit, *Journal of Computational and Graphical Statistics.*

2019 Guanhao Feng, Jingyu He and Nicholas Polson. Deep learning for predicting asset returns.

Miscellaneous

2020 Jingyu He and Nikolay Krantsevich. Contributed Discussion: Bayesian regression tree models for causal inference: regularization, confounding, and heterogeneous effects. *Bayesian Analysis*, (2020).

2020 Jingyu He. XBART: A Scalable Stochastic Algorithm for Supervised Machine Learning with Additive Tree Ensembles. Ph.D. Dissertation, The University of Chicago.

Research Grants

2024 Principal Investigator, "Illusion of stock return predictability: find the heterogeneity.", National Natural Science Foundation of China, Young Scientists Fund, 01/2025-12/2027.

2024 Principal Investigator, "Are asset pricing models sparse?" Hong Kong Research Grants Council, General Research Fund, 01/2025-12/2027.

2023 Principal Investigator, "What Stocks are Predictable by Machine Learning?" City Univeristy of Hong Kong, Strategic Research Grant, 09/2023-08/2025.

2022 Principal Investigator, "Regression Tree for Portfolio Optimization and Imbalanced Data." Hong Kong Research Grants Council, General Research Fund, 01/2023-12/2025.

2022 INQUIRE Europe Research Grant.

2021 Co-Investigator, Financial Systemic Risk Measures based on Monte Carlo Simulation: Theory and Methods. National Natural Science Foundation of China & Hong Kong Research Grants Council, NSFC/RGC Joint Research Scheme, 01/2022-12/2025.

2021 Principal Investigator, "XBART, a novel tree-based machine learning framework for regression, classification and treatment effect estimation." Hong Kong Research Grants Council, Early Career Scheme, 01/2022-12/2023.

2021 Principal Investigator, City University of Hong Kong, Start-up Grant, 11/2021-10/2023

Professional Service

Guest associate editor

Management Science

Referee

Academic journals: *The Review of Financial Studies*, *Journal of the American Statistical Association*, *Management Science*, *Operation Research*, *Journal of Econometrics*, *Journal of Financial and Quantitative Analysis*, *Journal of Machine Learning Research*, *Journal of Business and Economic Statistics*, *Journal of Computational and Graphical Statistics*, *Journal of Financial Econometrics*, *Statistica Sinica*, *Journal of Empirical Finance*, *Bayesian Analysis*, *Econometrics and Statistics*, *Communications in Statistics.*

Grant: UGC faculty development scheme.

Judge: ISBA Savage Award 2022, ASA 2023 SBSS Student Paper Competition.

Conference Organizer

Co-Organizer: Hong Kong Conference for FinTech, AI, and Big Data in Business, 2022 - now.

Program Comittee

FMA Annual Meeting, 2023. IEEE Global Blockchain Conference, 2024.

Session Chair

2023 FMA Annual Meeting, SBIES 2023.

Honors and Awards

2024 3rd Research Prize Award, IQAM Research Prize.

2024 Best paper award, 2024 China Fintech Research Conference.

2022 INQUIRE Europe Research Award.

2019 Facebook Statistics for Improving Insights and Decisions research award.

2017 Oscar Mayer Fellowship, The University of Chicago Booth School of Business.

2017, 2018 Teaching Assistant Award for Executive M.B.A. Program, The University of Chicago Booth School of Business.

2016-2020 Ph.D. Program Fellowship, The University of Chicago Booth School of Business.

Software

2021 `TreeFactor`. `R` package of Asset pricing with panel trees under global split criteria.

2020 `xbcf`. `R` package of Accelerated Bayesian causal forest.

2019 `XBART`. `R` and `python` packages of accelerated Bayesian additive regression trees.

2018 `bayeslm`. `R` package of efficient sampling for Gaussian linear regression with arbitrary priors.

Teaching

City University of Hong Kong

* Students' evaluation in the parentheses.

MS6221 Predictive Modeling in Marketing, 2021 (6.80/7), 2022 (6.92/7), 2023 (4.57/5), 2024 (4.69/5).

MS6711 Data Mining, 2022 (6.63/7), 2023 (4.66/5), 2024 (4.65 / 5), 2025.

MS3227 Probability and Applications in Business, 2021 (6.21/7).

The University of Chicago Booth School of Business

Guest lecturer of Business Statistics, M.B.A. course. Autumn 2019.

Supervised Students

Ph.D. students and entry year: Yuanzhi Wang (2022), Qianshu Zhang (2022), Shuhua Xiao (2023), Siyu Bie (2023), Yirou Wang (2024).

Dissertation Committee Member: Meijia Wang (2023, ASU → Google), Palak Jain (ASU), Nikolay Krantsevich (2023, ASU→ Foundation Medicine), Xin He (2022, CityU → Hunan University).

Presentations

2024 19th Conference on Asia-Pacific Financial Markets, Seoul, 2024/12.

First Macau International Conference on Business Intelligence and Analytics, Macau, 2024/12.

IQAM Research Award Ceremony, Frankfurt, 2024/11.

FinEML Conference 2024, USI Lugano, 2024/10.

University of Amsterdam, Amsterdam School of Economics, 2024/10.

Erasmus University Rotterdam, Erasmus School of Economics, 2024/10.

2024 Summer Institute of Finance Conference, Xi'an, 2024/07.

AI and Finance Conference at Sun Yat-Sen University, Shenzhen, 2024/07.

2024 China International Conference in Finance, Beijing, 2024/07.

Invited Practitioner Talk, RabyteTech, Beijing, 2024/07.

8th EAC ISBA Conference, Hong Kong, 2024/06.

16th Annual SoFiE Conference, Rio de Janeiro, 2024/06.

8th PKU-NUS Annual International Conference on Quantitative Finance and Economics, Suzhou, 2024/05.

School of Statistics, East China Normal University, 2024/04.

2024 China Fintech Research Conference, Shanghai, 2024/04.

Chinese University of Hong Kong (Shenzhen), School of Management and Economics, 2024/04.

China Journal of Econometrics Conference: Artificial Intelligence and Econometrics, Xiamen, 2024/04.

2023 7th Shanghai-Edinburgh-UCL Fintech Conference, Shanghai, 2023/11.

Fifth International Workshop in Financial Econometrics, Santo André, 2023/10.

NBER-NSF Seminar on Bayesian Inference in Econometrics and Statistics (SBIES), Philadelphia, 2023/08.

7th EAC ISBA Conference, Qingdao, 2023/07.

Macquarie University, Department of Actuarial Studies and Business Analytics, 2023/06.

Youth Econometrics Asia-Pacific Conference, Shanghai, 2023/06.

China Journal of Econometrics Conference: Time-varying Coefficient Models, Changsha, 2023/05.

Central South University, School of Mathematics and Statistics, 2023/05.

Southern University of Science and Technology, Business School, 2023/05.

Chinese University of Hong Kong, Department of Decision Sciences and Managerial Economics, 2023/04.

Eastern Finance Association Annual Meeting, Asheville, 2023/03.

University of Macau, Department of Economics, 2023/03.

2022 35th Australasian Finance & Banking Conference, Online, 2022/12.

Arizona State University, Department of Statistics, 2022/10.

The University of Hong Kong, HKU Business School, 2022/10.

2022 FMA Annual Meeting, Online, 2022/10.

Institute of Mathematical Statistics (IMS) Annual Meeting, London, 2022/06.

2022 Asian Finance Association (AsianFA) Annual Conference, Online, 2022/06.

2021 3rd Workshop on Machine Learning for Finance, Ca' Foscari University of Venice, Online, 2021/12.

2020 ICSA 2020 Applied Statistics Symposium, Online, 2020/12.

City University of Hong Kong, Department of Management Sciences, 2020/01.

2019 Arizona State University, Department of Statistics, 2019/10.

INFORMS Annual Meeting, Seattle, 2019/10.

2019 China International Conference in Finance, Guangzhou, 2019/07.

2019 Asia Meeting of the Econometric Society (2019 AMES), Xiamen, 2019/06.

NBER-NSF Seminar on Bayesian Inference in Econometrics and Statistics (SBIES), Providence, 2019/06.

China R Conference, Renmin University, 2019/05.

R in Finance, University of Illinois at Chicago, 2019/05.

2019 International Conference on FinTech, Shanghai Jiao Tong University, 2019/04.

Econometrics and Statistics Lunch Seminar, University of Chicago Booth School of Business, 2019/03.

2017 Joint Statistical Meeting (JSM), Baltimore, 2017/07.

2016 International Society for Bayesian Analysis (ISBA) World Meeting, Sardinia, 2016/06.

NBER-NSF Seminar on Bayesian Inference in Econometrics and Statistics (SBIES), Philadelphia, 2016/04.

Discussions

2023 *Risk-Return Relation of Cryptocurrency Carry Trade*, by Zhenzhen Fan, Feng Jiao, Lei Lu and Xin Tong, 7th Shanghai-Edinburgh-UCL Fintech Conference, 2023/11.

(Almost) 200 Years of News-Based Economic Sentiment, by J. H. van Binsbergen, S. Bryzgalova, M. Mukhopadhyay and V. Sharma, Fifth International Workshop in Financial Econometrics, 2023/10.

A Factor Model for Stock Options, by Turan G. Bali, Jie Cao, Fousseni Chabi-Yo, Linjia Song and Xintong Zhan, Econometrics Workshop for Time-varying Coefficient Models, 2023/05.

Confident Risk Premiums and Investments using Machine Learning Uncertainties, by Rohit Allena, 2023 Eastern Finance Association Annual Meeting, 2023/03.

2022 *The Conditional Dollar-Carry FX Pricing Model*, by Thomas Maurer, Sining Liu, Andrea Vedolin and Yaoyuan Zhang, 2022 Australasian Finance and Banking Conference, 2022/12.

Non-linear Market Efficiency, by Bao Linh Do and Talis Putnins, 2022 FMA Annual Meeting, 2022/10.

Automated Risk Forecasting, by Sophia Zhengzi Li and Yushan Tang, UFlorida Research Conference on Machine Learning in Finance, 2022/09.

When Midas Meets Lasso: Forecasting Tail Risk Using Effective Macroeconomic Variables, by Yi Luo and Xiaohan Xue, 2022 AsianFA Annual Conference, 2022/06.

From Man vs. Machine to Man + Machine: The Art and AI of Stock Analyses, by Sean Cao, Wei Jiang, Junbo Wang and Baozhong Yang, 2022 Annual Conference in Digital Economics, 2022/01.