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.

Education

2020 Ph.D., Stevens Doctoral Program, The University of Chicago Booth School of Business.

Advisors: P. Richard Hahn and Nicholas Polson.

2020 M.B.A., The University of Chicago Booth School of Business.

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

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

Publications

Journal Articles

2023 Guanhao Feng, Jingyu He, Nicholas Polson and Jianeng Xu. Deep Learning in Characteristics-Sorted Factor Models. Forthcoming, *Journal of Financial and Quantitative Analysis*.

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.*

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

2021 Jingyu He, P. Richard Hahn. Stochastic tree ensembles for regularized nonlinear regression. Accepted at *Journal of the American Statistical Association.*

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.

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.

Conference Proceedings

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 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

2023 Lin William Cong, Guanhao Feng, Jingyu He and Junye Li. Sparse Modeling Under Grouped Heterogeneity with an Application to Asset Pricing, *NBER working paper No. w31424.*

2023 Lin William Cong, Guanhao Feng, Jingyu He and Xin He. Growing the Efficient Frontier on Panel Trees, *NBER working paper No. w30805*, Revise and resubmit, *Journal of Financial Economics.*

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

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: *Journal of the American Statistical Association*, *Management Science*, *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, 2023.

Program Comittee

FMA Annual Meeting, 2023.

Session Chair

2023 FMA Annual Meeting, SBIES 2023.

Honors and Awards

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.

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

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).

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

Presentations

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

University of Amsterdam, Amsterdam School of Economics, 2024/05.

Erasmus University Rotterdam, Erasmus School of Economics, 2024/05.

2023 Chinese University of Hong Kong (Shenzhen), School of Management and Economics, 2023/11.

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.

Econometrics Workshop for Time-varying Coefficient Models 2023, 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.