

Xiaocong Xu

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Research Interests

Mathematical statistics, probability, and algorithms, with emphasis on random matrix theory, mean-field high-dimensional statistics, statistical decision-making, and robust knockoff inference.

Employment

Aug. 2026–present	Assistant Professor, Department of Statistics, University of Pittsburgh, Pittsburgh, PA.
Oct. 2024–Aug. 2026	Postdoctoral Research Associate, Marshall School of Business, University of Southern California, Los Angeles, CA.

Education

Sept. 2019–Sept. 2024	Ph.D. in Mathematics, Department of Mathematics, Hong Kong University of Science and Technology, Hong Kong.
Sept. 2015–June 2019	B.S. in Mathematics, School of Mathematics, Sun Yat-sen University, Guangzhou, China.

Publications and Preprints

(* = non alpha-order, multiple * = equal contribution)

1. Yingying Fan, Yuxuan Han, Jinchi Lv, Xiaocong Xu, and Zhengyuan Zhou. “Harnessing unimodality in semiparametric contextual pricing via oracle price map learning.” [arXiv:2605.15411](#).
2. Yingying Fan, Lan Gao, Jinchi Lv, and Xiaocong Xu. “Asymptotic FDR control with model-X knockoffs: Is moments matching sufficient?” [arXiv:2502.05969](#).
3. Qiyang Han and Xiaocong Xu. “Gradient descent inference in empirical risk minimization.” *The Annals of Statistics*, 54(3): 1232–1261, 2026.
4. Yuxuan Han*, Xiaocong Xu*, Yuxiao Wen, Yanjun Han, Ilan Lobel, and Zhengyuan Zhou. “Semi-parametric contextual pricing with general smoothness.” *The Fourteenth International Conference on Learning Representations (ICLR)*, 2026.

5. Qiyang Han and Xiaocong Xu. “The distribution of ridgeless least squares interpolators.” *Journal of Machine Learning Research*, 27(23): 1–94, 2026.
6. Zhigang Bao, Jaehun Lee, and Xiaocong Xu. “Phase transition for the bottom singular vector of rectangular random matrices.” *Journal of Functional Analysis*, 290(4): 111266, 2026.
7. Jongmin Mun*, Xiaocong Xu, and Yingying Fan. “Pessimistic Off-Policy Learning under Covariate Shift and Local Differential Privacy.” Working paper. Preliminary version presented at MLxOR Workshop at NeurIPS 2025.
8. Yingying Fan, Yuxuan Han, Jinchi Lv, Xiaocong Xu, and Zhengyuan Zhou. “Offline contextual bandits with covariate shift.” Working paper. Preliminary version presented at MLxOR Workshop at NeurIPS 2025.
9. Yingying Fan, Yuxuan Han, Jinchi Lv, Xiaocong Xu, and Zhengyuan Zhou. “Precise asymptotics and refined regret of variance-aware UCB.” *Advances in Neural Information Processing Systems (NeurIPS)*, 2025. Spotlight.
10. Zhigang Bao, Qiyang Han, and Xiaocong Xu. “A leave-one-out approach to approximate message passing.” *The Annals of Applied Probability*, 35(4): 2716–2766, 2025.
11. Zhigang Bao, Jaehun Lee, and Xiaocong Xu. “Phase transition for the smallest eigenvalue of covariance matrices.” *Probability Theory and Related Fields*, 192: 35–133, 2025.
12. Zhigang Bao and Xiaocong Xu. “Extreme eigenvalues of log-concave ensemble.” *Annales de l’Institut Henri Poincaré, Probabilités et Statistiques*, 61(1): 155–184, 2025.
13. Zhigang Bao, Jiang Hu, Xiaocong Xu, and Xiaozhuo Zhang. “Spectral statistics of sample block correlation matrices.” *The Annals of Statistics*, 52(5): 1873–1898, 2024.

Teaching

Instructor at University of Pittsburgh

Fall 2026

STAT 1261/2260: Principles of Data Science

Professional Service

Journal Reviewer

The Annals of Applied Probability

The Annals of Statistics

Bernoulli

Biometrika

Forum of Mathematics, Sigma

Journal of the American Statistical Association

Journal of Machine Learning Research

Linear Algebra and Its Applications

Operations Research

Probability Theory and Related Fields

Talks and Presentations

International Conference on Econometrics and Statistics, Ryukoku University	Aug. 2026
Statistics Seminar, University of Virginia	Dec. 2025
Probability and Statistics Seminar, University of Southern California	Nov. 2025
Statistics Seminar, University of Melbourne	Apr. 2025
International Conference on Econometrics and Statistics, Beijing Normal University	July 2024
IMS-China International Conference in Statistics and Probability	Jul, 2024
IMS Asia Pacific Rim Meeting, University of Melbourne	Jan. 2024
Analysis, PDE & Probability Seminar, Korea Institute for Advanced Study	Dec. 2022
Postgraduate Student Seminar, Hong Kong University of Science and Technology	Aug. 2022