

Yanpeng Li

School of Mathematics, Harbin Institute of Technology 20230256@hit.edu.cn — Google Scholar

EDUCATION

Doctor of Science, Statistics (2018-2023)

Harbin Institute of Technology (Supervisor: Boping Tian)

Thesis: *Study on Non-asymptotic Statistical Theory Based on Concentration Inequalities*

Visiting Scholar, Statistics (2022-2023)

National University of Singapore (Supervisor: Wang Zhou)

M.Sc. Applied Statistics (2016-2018)

Harbin Institute of Technology

B.Sc. Mathematics (2012-2016)

Harbin Institute of Technology

EMPLOYMENT HISTORY

Post-doctoral: Macao Young Scholar Program MYSP (2025-2027)

University of Macao (Supervisor: Zhi Liu)

Post-doctoral: Associate Researcher (2025-)

Harbin Institute of Technology

Post-doctoral: Assistant Professor (2023-2025)

Harbin Institute of Technology

RESEARCH INTERESTS

Random matrix theory, High dimensional statistics, Generative AI inference/detection

PUBLICATIONS

Journal Articles (corresponding author*)

1. Jiao YH, Li YP*. Log-convexity of moments of averages of i.i.d. Gamma and Poisson random variables. *Statistics & Probability Letters*. 2026 [📄](#)
2. Li YP*. Large sample correlation matrices with unbounded spectrum. *Journal of Multivariate Analysis*. 2025 [📄](#)
3. Li YP, Xie JH*, Zhou GL, Zhou W. Sequential estimation of high-dimensional signal plus noise models under general elliptical frameworks. *Journal of Multivariate Analysis*. 2025 [📄](#)
4. Tian FL, Li YP*, Tian BP. House price changes: A perspective of inhomogeneous multiple structural breaks. *The Australian Economic Review*. 2025 [📄](#)
5. Li YP*, Tian BP. On the sub-Gaussianity of the missing mass. *Statistics & Probability Letters*. 2024 [📄](#)
6. Li YP*, Tian BP. Optimal non-asymptotic concentration of centered empirical relative entropy in the high-dimensional regime. *Statistics & Probability Letters*. 2023 [📄](#)
7. Teng GQ, Li YP, Tian BP*, Li J. Sharper concentration inequalities for median-of-mean processes. *Mathematics*. 2023 [📄](#)
8. Li YP*, Tian BP. Non-asymptotic sub-Gaussian error bounds for hypothesis testing. *Statistics & Probability Letters*. 2022 [📄](#)
9. Cheng XQ, Li YP*. An improved Hoeffding's inequality for sum of independent random variables. *Statistics & Probability Letters*. 2022 [📄](#)
10. Zhang SX, Cong XR*, Tian BP, Li YP, Yao MJ. The first order random coefficient integer valued autoregressive process with the occasional level shift random noise based on dual empirical likelihood. *Communications in Statistics-Theory and Methods*. 2019 [📄](#)

Submitted Articles (corresponding author*)

1. Li YP, Pan GM, Xie JH, Zhou W*. Necessary and sufficient condition for CLT of linear spectral statistics of sample correlation matrices. arXiv:2409.12536
2. Kong XB, Li YP*, Liu Z. Central limit theorem for linear spectral statistics of separable sample correlation matrices and applications
3. Li YP, Liu Z, Xie JH, Zhou W*. Logarithmic law of sample correlation matrices. arXiv:2603.19800
4. Li YP*. A note on "The volume of random simplices from elliptical distributions in high dimension".
5. Li YP*. On high dimensional uniformity test under heavy-tailed alternatives.

Working in progress

1. Asymptotics for Hotelling T^2 under heavy-tailed distribution.
2. Asymptotics for the largest off-diagonal entry of sample correlation matrices under heavy-tailed distribution.
3. Almost sure limits of extreme eigenvalues of sample correlation matrices under heavy-tailed distribution.
4. LSS for eigenvectors of sample correlation matrices.
5. Signal identification for factor model with heavy-tailed noise.
6. Asymptotics for superdiffusion models under high dimensional regime.

CREATIVE ACTIVITY

Presentations & Talks

2024-10, Seminar on random matrix theory and applications, Changchun
2024-11, The 13-th National Conference on Probability and Statistics Xiamen
2025-04, Seminar on random matrix theory and data science, Xi'an
2025-06, The 3-rd Conference on Multivariate Analysis, Chongqin
2025-07, Harbin International Conference on Econometrics and Statistics (ICES) Harbin
2025-11, Jiangsu Normal University (Invited report), Xuzhou

GRANTS

External Grants

2024 Macau Young Scholar Program (MYSP)

Proposal Title: Asymptotics for relized covariance in high dimensionality
Coverage Period: 2025.08-2027.07

2024 Heilongjiang Post-doctral Founding

Proposal Title: Statistical inference for high-dimensional missing data by random matrix theory
Coverage Period: 2024.12-2026.12

Internal Grants

2025 The Top University Visiting Program by Harbin Institute of Technology

Proposal Title: Random matrix theory and applications (with National University of Singapore and Nanyang Technology University)
Coverage Period: 2025.05-2025.12

SERVICE & PROFESSIONAL DEVELOPMENT

Referee

Journal of Multivariate Analysis, Computational Statistics & Data Analysis, Statistics and Computing, Statistics & Probability Letters.

Social activities

Member of Random matrix theory and appclications in Chinese Association for Applied Statistics (CAAS)