MENGYU LI

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Google Scholar: https://scholar.google.com/citations?user=hPWnWK0AAAAJ&hl=en

EDUCATION

Institute of Statistics and Big Data, Renmin University of China (RUC), Beijing, China

- Ph.D. in Statistics   Sep. 2020–Jun. 2025
- Supervisor: Cheng Meng, Assistant Professor

Department of Statistics, The Chinese University of Hong Kong (CUHK), Hong Kong, China

- Exchange Student   Nov. 2023–May 2024
- Supervisor: Xiaodan Fan, Professor

School of Statistics, Beijing Normal University (BNU), Beijing, China

- Bachelor in Statistics   Sep. 2016–Jun. 2020

RESEARCH INTERESTS

Optimal transport; Subsampling in big data; Statistical machine learning; AI for healthcare

PUBLICATIONS & WORKING PAPERS

Publications

1. **Mengyu Li**, Bencong Zhu, Cheng Meng & Xiaodan Fan (2025). "Double optimal transport for differential gene regulatory network inference with unpaired samples." Bioinformatics. In press.

2. Junlie Huang, Xinlai Kang, Qiannan Huang, **Mengyu Li** & Cheng Meng (2025). "Efficient approximation of leverage scores in two-dimensional autoregressive models with application to image anomaly detection." Journal of Computational and Graphical Statistics. In press.

3. Yukuan Hu, **Mengyu Li**, Xin Liu & Cheng Meng (Alphabetical order) (2025). "Sampling-based methods for multi-block optimization problems over transport polytopes." Mathematics of Computation. 94(353), 1281–1322.

4. **Mengyu Li**, Jun Yu, Tao Li & Cheng Meng (2024). "Core-elements for large-scale least squares estimation." Statistics and Computing, 34(6), 1–16.
   Student Paper Award in JSM2022, Sections on Statistical Computing and Graphics

5. **Mengyu Li**, Jingyi Zhang & Cheng Meng (2024). "Nonparametric additive models for billion observations." Journal of Computational and Graphical Statistics, 33(4), 1397–1412.

6. Xinlai Kang, **Mengyu Li**, Xuqiang Chen, Fangyu Li & Cheng Meng (2023). "A Hausdorff regression paradigm for interval privacy." IEEE Signal Processing Letters, 31, 146–150.

7. **Mengyu Li**, Jun Yu, Tao Li & Cheng Meng (2023). "Importance sparsification for Sinkhorn algorithm." Journal of Machine Learning Research, 24(247), 1–44.
   Student Paper Award in JSM2023, Statistics in Imaging Section

8. **Mengyu Li**, Jun Yu, Hongteng Xu & Cheng Meng (2023). "Efficient approximation of Gromov-Wasserstein distance using importance sparsification." Journal of Computational and Graphical Statistics, 32(4), 1512–1523.

9. **Mengyu Li** & Junlong Zhao (2022). "Communication-efficient distributed linear discriminant analysis for binary classification." Statistica Sinica, 32, 1343–1361.

Under Review

1. **Mengyu Li**, Cheng Meng & Xiaodan Fan. "Iterative optimal transport for multimodal image registration." Submitted to *Pattern Recognition*.

2. Tao Wang, **Mengyu Li** (Joint first author), Geduo Zeng, Cheng Meng & Qiong Zhang. "Gaussian herding across pens: An optimal transport perspective on global Gaussian reduction for 3DGS." Submitted to *NeurIPS 2025*.

3. Dunyao Xue, **Mengyu Li** (Joint first author), Cheng Meng & Jingyi Zhang. "Core-elements subsampling for alternating least squares." Submitted to *Journal of Computational and Graphical Statistics*.

4. Junyi Lin, **Mengyu Li** (Joint first author), Cheng Meng & Yongdao Zhou. "Sparsification subsampling for partial least squares regression." Submitted to *Journal of Computational and Graphical Statistics*.

5. Chengshuo Du, Han Hao, **Mengyu Li**, Tao Li, Cheng Meng & Jun Yu (Alphabetical order). "Ensemble pruning using optimal transport." Submitted to *IEEE Transactions on Information Theory*.

6. Xiaxue Ouyang, Xinlai Kang, **Mengyu Li**, Zhenxing Dou, Jun Yu & Cheng Meng. "A more efficient method for large-sample model-free feature screening via multi-armed bandits." Submitted to *Journal of Computational and Graphical Statistics*.

FUNDING & AWARDS

Funding

- Young Elite Scientists Sponsorship Program - Doctoral Student Special Program (¥40,000), China Association for Science and Technology   2024–2025

- Outstanding Innovative Talents Cultivation Funded Program (¥70,000), RUC   2021–2024

- Joint Ph.D. Program (¥50,000), RUC   2023–2024

Awards

- **Wu Yuzhang Scholarship**, RUC   2025
  RUC's highest honor for students; 10 winners (among which 4 Ph.D. students) per year

- **Outstanding Poster Award** in the 22nd Annual Meeting of China Society for Industrial and Applied Mathematics (CSIAM 2024)   2024

- **Student Paper Award** in Joint Statistical Meetings (JSM), Statistics in Imaging Section, American Statistical Association (ASA)   2023
  5 winners per year; first winner trained in Chinese Mainland

- **Student Paper Award** in JSM, Sections on Statistical Computing and Graphics, ASA   2022
  4 winners per year; first winner trained in Chinese Mainland

- Beijing Municipal Outstanding Graduate   2025

- National Scholarship, Ministry of Education of the P.R. China 2023

- Jingdong Special Scholarship, RUC 2023
  20 winners per year

PROJECT EXPERIENCE

Large-Scale Chip Layout Pattern Clustering Mar. 2025–Mar. 2026
Collaboration with Huawei Technologies Co., Ltd Semiconductor

Noise Analysis and Processing for Non-Native Bayer Raw Images Dec. 2023–Aug. 2024
Collaboration with Huawei Technologies Co., Ltd Photonics

ACADEMIC EXPERIENCE

Research Assistant

- Department of Statistics, CUHK Nov. 2023–May 2024
  Developed novel algorithms for multi-modal image registration and gene regulatory network reconstruction based on optimal transport theory.

Teaching Assistant

- Data Mining, RUC Spring 2021, 2024
  My duties included lecturing exercise lessons, homework preparation and grading, etc.

Talks & Poster Presentations

- The 8th CSIAM Student Forum in CSIAM 2024, Nanjing, China Oct. 2024
  Title: Importance sparsification for Sinkhorn algorithm

- Student Academic Seminar for the 87th Anniversary of RUC, Beijing, China Oct. 2024
  Title: Statistical computing aids coronary heart disease screening

- Capital Statistics and Data Science High-Level Forum, Beijing, China Jul. 2023
  Title: Efficient algorithms for large-scale optimal transport problems

Referee for Journals

- Journal of Computational and Graphical Statistics

- Communications in Statistics - Simulation and Computation

- SIAM Journal on Imaging Sciences

PROFESSIONAL SKILLS

Programming

- Python, R, MATLAB, C++, Linux shell

Language

- Chinese Mandarin, English