Canyi Chen

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Experience

Department of Biostatistics, University of Michigan **Ann Arbor**
Postdoc Researcher *2023 –*

Education

Renmin University of China **Beijing**
PhD in Statistics *2018 – 2023*
Dissertation: "Distributed Statistical Algorithms for Nonsmooth Problems: Theories and Applications"

Beijing Normal University **Beijing**
BSc in Mathematics and Applied Mathematics *2014 – 2018*

Research Interests

- Distributed statistical computing; High-dimensional data analysis; Non-Linear dependence measure

Publications

Journal Articles

* indicates equal contributions
† indicates corresponding author(s) (if not the senior author)
boldface indicates me

[1] **C. Chen***, N. Qiao*, and L. Zhu*†. "Efficient Distributed Learning over Decentralized Networks with Convoluted Support Vector Machine". In: *Journal of the American Statistical Association* (2025). to appear.

[2] W. Hao, **C. Chen**, and P. X.-K. Song†. "A Class of Directed Acyclic Graphs with Mixed Data Types in Mediation Analysis". In: *Canadian Journal of Statistics* (2025). DOI: 10.1002/cjs.70016.

[3] C. He*, **C. Chen***, and L. Zhu†. "A Goodness-of-fit Assessment for General Learning Procedure in High Dimensions". In: *Journal of the American Statistical Association* (2025). to appear.

[4] N. Qiao*, **C. Chen***†, and Z. Zhu*. "Robust and Efficient Sparse Learning over Networks: A Decentralized Surrogate Composite Quantile Regression Approach". In: *Statistics and Computing* 35.1 (Jan. 2025), p. 24.

[5] B. Chen and **C. Chen**†. "Convoluted Support Matrix Machine in High Dimensions". In: *Statistica Sinica* (2024). DOI: 10.5705/ss.202024.0194.

[6] **C. Chen**†. "Scalable and Globally Convergent Algorithm for Sufficient Dimension Reduction". In: *Statistics and Its Interface* 17.3 (July 2024), pp. 479–491.

[7] **C. Chen***, B. Chen*, L. Kong, and L. Zhu†. "Robust Multi-Task Learning in High Dimensions under Memory Constraint". In: *Statistical Analysis and Data Mining* 17 (3 2024), e11700. DOI: 10.1002/sam.11700.

[8] **C. Chen** and Z. Zhu†. "Byzantine-Robust and Efficient Distributed Sparsity Learning: A Surrogate Composite Quantile Regression Approach". In: *Statistics and Computing* 34.5 (Oct. 2024), p. 158.

[9] Y. He, **C. Chen**, and W. Xu†. "Debiased Distributed Quantile Regression in High Dimensions". In: *Statistics and Its Interface* 17.3 (2024), pp. 337–347.

[10] N. Qiao and **C. Chen**†. "Fast and Robust Low-Rank Learning over Networks: A Decentralized Matrix Quantile Regression Approach". In: *Journal of Computational and Graphical Statistics* 33.4 (Oct. 2024), pp. 1214–1223.

[11] B. Chen and **C. Chen**. "Fast Optimization Methods for High-Dimensional Row-Sparse Multivariate Quantile Linear Regression". In: *Journal of Statistical Computation and Simulation* 94.1 (July 2023), pp. 69–102.

[12] **C. Chen***, Y. Gu*, H. Zou*, and L. Zhu*†. "Distributed Sparse Composite Quantile Regression in Ultrahigh Dimensions". In: *Statistica Sinica* 33 (2023). DOI: 10.5705/ss.202022.0095.

[13] C. Chen, W. Xu, and L. Zhu. "Distributed Estimation in Heterogeneous Reduced Rank Regression: With Application to Order Determination in Sufficient Dimension Reduction". In: *Journal of Multivariate Analysis* 190 (July 2022), p. 104991. DOI: 10.1016/j.jmva.2022.104991.

[14] **C. Chen** and L. Zhu†. "Distributed Decoding from Heterogeneous 1-Bit Compressive Measurements". In: *Journal of Computational and Graphical Statistics* 32.3 (Aug. 2022), pp. 884–894. DOI: 10.1080/10618600.2022.2118751.

[15] Y. Zhang, C. Chen, and L. Zhu. "Sliced Independence Test". In: *Statistica Sinica* 32 (2022). DOI: 10.5705/ss.202021.0203.

[16] P. Song, **C. Chen**, Y. Lou, H. Jiang, W. Li, and L. Zhu. "Assessing Effectiveness of Integrated Strategies for Preventing and Controlling the Outbreak of COVID-19 and Predicting Impact of Opening Exit Channels to Leave Hubei Province". In: *Chinese Journal of Applied Probability and Statistics* 36.3 (June 2020), pp. 321–330. DOI: 10.3969/j.issn.1001-4268.2020.03.007.

Open-Source Software

- SIT: Association Measurement Through Sliced Independence Test. [Link]
- abima: Adaptive Bootstrap Inference for Mediation Analysis with Enhanced Statistical Power. [Link]

- MarginalMaxTest: Test the Marginal Correlation between a Scalar Response Variable with a Vector of Explanatory Variables using the Max-Type test with Bootstrap. [Link]
- ZoteroQuickLookNG-z7: Bring Quick Look to Zotero 7 in macOS. [Link]

Grant Proposals

Renmin University of China
Canonical Correlation Analysis of Functional Data *2020*

National Students' Innovation and Entrepreneurship Training Program
Asymptotics of the Derrida–Retaux Branch System *2016*

Fellowships, Honors, and Awards

Excellent Doctoral Dissertation Award of Renmin University of China *2024*
UMPDA Conference Award *2024*
National Scholarship of China *2023*
Outstanding Graduate of Renmin University of China *2023*
Wu Yuzhang Scholarship Finalist *2023*
Jingdong Special Scholarship Finalist *2022*
The best presented poster *2020*
Distributed Decoding from Heterogeneous 1-Bit Compressive Measurements, *Statistics and Data Science Young Scholars Forum*, Beijing. [pdf]
National Second Prize in National Undergraduate Mathematical Modeling Contest *2016*

Volunteer Experience

Teaching Assistant

Computer Skills in Data Science – PhD Level *Fall 2019*
Asymptotic Statistics – PhD Level *Fall 2020*
Natural Language Processing – PhD Level *Spring 2021*

Anonymous Referee

- *Statistica Sinica (22, 23)*
- *IEEE Transactions on Neural Networks and Learning Systems (23, 24, 25)*
- *Statistics and Computing (24, 25)*
- *Annals of Applied Statistics (24, 25)*
- *SCIENCE CHINA Mathematics (24)*
- *Acta Mathematica Scientia (24)*
- *The American Statistician (24)*
- *Applied Mathematics and Computation (24)*
- *ScienceAsia (25)*
- *Journal of the American Statistical Association (25)*

- *Mathematics (25)*

Seminars & Presentations

- Graduate Student Seminar, Department of Statistics, George Washington University, Washington, D.C., October 18, 2024 (invited speaker)
- ICSA Applied Statistics Symposium, Nashville, Tennessee, June 16 - 19, 2024 (invited speaker)
- The 7th International Conference on Statistical Optimization and Learning, Beijing Jiaotong University, Beijing, China, December 2022 (invited speaker)
- Data Science Frontiers Forum, Southwestern University of Finance and Economics, Chengdu, China, July 2021 (invited speaker)

Skills

- Programming languages: Python, R, C++, Bash, LaTeX, MATLAB, SQL
- Languages: Chinese, English, Eastern Min