

# Canyi Chen

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## Experience

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

## Education

2018 – 2023 **PhD in Statistics**, *Renmin University of China, Beijing*

Dissertation: “Distributed Statistical Algorithms for Nonsmooth Problems: Theories and Applications”

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

## Research Interests

○ 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] B. Chen and **C. Chen**<sup>†</sup>. “Convolved Support Matrix Machine in High Dimensions”. In: *Statistica Sinica* (2024). DOI: 10.5705/ss.202024.0194.
- [2] **C. Chen**<sup>†</sup>. “Scalable and Globally Convergent Algorithm for Sufficient Dimension Reduction”. In: *Statistics and Its Interface* 17.3 (July 2024), pp. 479–491. DOI: 10.4310/23-SII798.
- [3] **C. Chen**<sup>\*</sup>, B. Chen<sup>\*</sup>, L. Kong, and L. Zhu<sup>†</sup>. “Robust Multi-Task Learning in High Dimensions under Memory Constraint”. In: *Statistical Analysis and Data Mining* (2024). DOI: 10.1002/sam.11700.
- [4] **C. Chen**<sup>\*</sup>, Y. Gu<sup>\*</sup>, H. Zou<sup>\*</sup>, and L. Zhu<sup>\*†</sup>. “Distributed Sparse Composite Quantile Regression in Ultrahigh Dimensions”. In: *Statistica Sinica* (2024). DOI: 10.5705/ss.202022.0095.
- [5] **C. Chen** and Z. Zhu<sup>†</sup>. “Byzantine-Robust and Efficient Distributed Sparsity Learning: A Surrogate Composite Quantile Regression Approach”. In: *Statistics and Computing* (2024). DOI: 10.1007/s11222-024-10470-0.

- [6] N. Qiao and **C. Chen**<sup>†</sup>. “Fast and Robust Low-Rank Learning over Networks: A Decentralized Matrix Quantile Regression Approach”. In: *Journal of Computational and Graphical Statistics* (2024). DOI: 10.1080/10618600.2024.2353640.
- [7] B. Chen and **C. Chen**. “Fast Optimization Methods for High-Dimensional Row-sparse Multivariate Quantile Linear Regression”. In: *Journal of Statistical Computation and Simulation* (2023). In press. DOI: 10.1080/00949655.2023.2232504.
- [8] **C. Chen**<sup>\*</sup>, W. Xu<sup>\*</sup>, and L. Zhu<sup>\*†</sup>. “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.
- [9] **C. Chen** and L. Zhu<sup>†</sup>. “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.
- [10] Y. He, **C. Chen**, and W. Xu<sup>†</sup>. “Distributed Estimation of High-Dimensional Linear Quantile Regression”. In: *Statistics and Its Interface* (2022). In press.
- [11] Y. Zhang, **C. Chen**, and L. Zhu<sup>†</sup>. “Sliced Independence Test”. In: *Statistica Sinica* (2022). DOI: 10.5705/ss.202021.0203.
- [12] 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.

### Preprints

- [13] B. Chen and **C. Chen**<sup>†</sup>. “Unified and Efficient Algorithms for Penalized Convolved Support Vector Machines”. 2024.
- [14] **C. Chen**, Y. He, H. J. Wang, G. Xu, and P. X.-K. Song<sup>†</sup>. “Quantile Mediation Analytics”. submitted. 2024.
- [15] **C. Chen**<sup>\*</sup>, Z. Zhu<sup>\*</sup>, and L. Zhu<sup>\*†</sup>. “Robust and Efficient Decoding from Heterogeneous 1-Bit Compressive Measurements over Networks”. submitted. 2024.
- [16] C. He, **C. Chen**, and L. Zhu. “Goodness-of-fit Assessment for General Learning Procedure in High Dimensions”. submitted. 2024.
- [17] M. Al-Hinai, **C. Chen**, E. C. Jansen, K. E. Peterson, P. X.-K. Song, and A. Baylin. “Vitamin D is Associated with Sleep Disturbance and Cognitive Function in Older Adults”. 2024.
- [18] N. Qiao, W. Li, J. Zhang, and **C. Chen**<sup>†</sup>. “Scalable and Distributed Individualized Treatment Rules for Massive Datasets”. submitted. 2024.
- [19] **C. Chen**<sup>\*†</sup>, N. Qiao<sup>\*</sup>, and Z. Zhu<sup>\*</sup>. “Robust and Efficient Sparse Learning over Networks: A Decentralized Surrogate Composite Quantile Regression Approach”. under revision. 2023.

- [20] **C. Chen** and L. Zhu<sup>†</sup>. “Distributed Estimation and Gap-Free Analysis of Canonical Correlations”. submitted. 2023.
- [21] W. Hao, **C. Chen**, and P. X.-K. Song<sup>†</sup>. “A Class of Directed Acyclic Graphs with Mixed Data Types in Mediation Analysis”. under revision. Nov. 2023. arXiv: 2311.17867 [stat].

## Open-source Software

- SIT: ASSOCIATION MEASUREMENT THROUGH SLICED INDEPENDENCE TEST (SIT)

## Grant Proposals

- 2020 **Canonical Correlation Analysis of Functional Data**, *Renmin University of China*
- 2016 **Asymptotics of the Derrida–Retaux Branch System**, *National Students’ Innovation and Entrepreneurship Training Program*

## Fellowships, Honors, and Awards

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

## Volunteer Experience

### Teaching Assistant

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

### Anonymous Referee

*Statistica Sinica* (22, 23), *IEEE Transactions on Neural Networks and Learning Systems* (23, 24x2), *Statistics and Computing* (24), *Annals of Applied Statistics* (24), *SCIENCE CHINA Mathematics* (24), *Acta Mathematica Scientia* (24), *The American Statistician* (24)

## Seminars & Presentations

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)

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## Skills

Programming languages: Python, R, C++, Bash,  $\LaTeX$ , MATLAB, SQL

Languages: Chinese, English, Eastern Min