

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

1. **Chen, C.** & Zhu, L. Distributed Decoding from Heterogeneous 1-Bit Compressive Measurements. *Journal of Computational and Graphical Statistics* **32**, 884–894. doi:10.1080/10618600.2022.2118751 (Aug. 2022).
2. **Chen, C.**, Xu, W. & Zhu, L. Distributed Estimation in Heterogeneous Reduced Rank Regression: With Application to Order Determination in Sufficient Dimension Reduction. *Journal of Multivariate Analysis* **190**, 104991. doi:10.1016/j.jmva.2022.104991 (July 2022).
3. **Chen, C.**, Gu, Y., Zou, H. & Zhu, L. Distributed Sparse Composite Quantile Regression in Ultrahigh Dimensions. *Statistica Sinica*. doi:10.5705/ss.202022.0095 (2024).
4. Zhang, Y., **Chen, C.** & Zhu, L. Sliced Independence Test. *Statistica Sinica*. doi:10.5705/ss.202021.0203 (2022).
5. Song, P., **Chen, C.**, Lou, Y., Jiang, H., Li, W. & Zhu, L. 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. *Chinese Journal of Applied Probability and Statistics* **36**, 321–330. doi:10.3969/j.issn.1001-4268.2020.03.007 (June 2020).
6. He, Y., **Chen, C.** & Xu, W. Distributed Estimation of High-Dimensional Linear Quantile Regression. *Statistics and Its Interface*. In press (2022).

7. **Chen, C.** Scalable and Globally Convergent Algorithm for Sufficient Dimension Reduction. *Statistics and Its Interface* **17**, 479–491. doi:10.4310/23-SII798 (July 2024).
8. Chen, B. & **Chen, C.** Fast Optimization Methods for High-Dimensional Row-sparse Multivariate Quantile Linear Regression. *Journal of Statistical Computation and Simulation*. In press. doi:10.1080/00949655.2023.2232504 (2023).
9. Qiao, N. & **Chen, C.** Fast and Robust Low-Rank Learning over Networks: A Decentralized Matrix Quantile Regression Approach. *Journal of Computational and Graphical Statistics*. doi:10.1080/10618600.2024.2353640 (2024).
10. **Chen, C.**, Chen, B., Kong, L. & Zhu, L. Robust Multi-Task Learning in High Dimensions under Memory Constraint. *Statistical Analysis and Data Mining*. doi:10.1002/sam.11700 (2024).
11. **Chen, C.** & Zhu, Z. Byzantine-Robust and Efficient Distributed Sparsity Learning: A Surrogate Composite Quantile Regression Approach. *Statistics and Computing*. doi:10.1007/s11222-024-10470-0 (2024).
12. Chen, B. & **Chen, C.** Convolved Support Matrix Machine in High Dimensions. *Statistica Sinica*. doi:10.5705/ss.202024.0194 (2024).

Preprints

13. **Chen, C.** & Zhu, L. *Distributed Estimation and Gap-Free Analysis of Canonical Correlations* submitted. 2023.
14. **Chen, C.**, Qiao, N. & Zhu, Z. *Robust and Efficient Sparse Learning over Networks: A Decentralized Surrogate Composite Quantile Regression Approach* under revision. 2023.
15. Hao, W., **Chen, C.** & Song, P. X.-K. *A Class of Directed Acyclic Graphs with Mixed Data Types in Mediation Analysis* under revision. Nov. 2023. arXiv: 2311.17867 [stat].
16. Al-Hinai, M., **Chen, C.**, Jansen, E. C., Peterson, K. E., Song, P. X.-K. & Baylin, A. *Vitamin D is Associated with Sleep Disturbance and Cognitive Function in Older Adults* 2024.
17. **Chen, C.**, He, Y., Wang, H. J., Xu, G. & Song, P. X.-K. *Quantile Mediation Analytics* submitted. 2024.
18. He, C., **Chen, C.** & Zhu, L. *Goodness-of-fit Assessment for General Learning Procedure in High Dimensions* submitted. 2024.
19. Qiao, N., Li, W., Zhang, J. & **Chen, C.** *Scalable and Distributed Individualized Treatment Rules for Massive Datasets* submitted. 2024.
20. Chen, B. & **Chen, C.** *Unified and Efficient Algorithms for Penalized Convolved Support Vector Machines* 2024.
21. **Chen, C.**, Zhu, Z. & Zhu, L. *Robust and Efficient Decoding from Heterogeneous 1-Bit Compressive Measurements over Networks* submitted. 2024.

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)

Skills

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

Languages: Chinese, English, Eastern Min