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).

Preprints

12. **Chen, C.** & Zhu, L. *Distributed Estimation and Gap-Free Analysis of Canonical Correlations* submitted. 2023.

13. **Chen, C.,** Qiao, N. & Zhu, Z. *Robust and Efficient Sparse Learning over Networks: A Decentralized Surrogate Composite Quantile Regression Approach* submitted. 2023.

14. Chen, B. & **Chen, C.** *Convoluted Support Matrix Machine in High Dimensions* major revision at *Statistica Sinica*. 2024.

15. Hao, W., **Chen, C.** & Song, P. X.-K. *A Class of Directed Acyclic Graphs with Mixed Data Types in Mediation Analysis* submitted. 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* 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 Convoluted Support Vector Machines* 2024.

21. **Chen, C.** & Zhu, L. *Robust and Efficient Decoding from Heterogeneous 1-Bit Compressive Measurements over Networks* 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)

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