

Yao Zheng

January 2025

EDUCATION

Ph.D. in Statistics, University of Hong Kong, 2017.

B.Sc. (First-class honours) in Actuarial Science, University of Hong Kong, 2013.

First year study at School of Economics and Management, Tsinghua University, 2009.

APPOINTMENTS

Assistant Professor, Department of Statistics, University of Connecticut, 2019–.

Postdoc Fellow & Visiting Assistant Professor, Department of Statistics & School of Industrial Engineering, Purdue University, 2017–2019.

PUBLICATIONS AND MANUSCRIPTS

[Student co-author*; Co-first author[§]; Corresponding author[†]]

- [1] Li, S.* and **Zheng, Y.** (2024+). Tensor stochastic regression for high-dimensional time series via CP decomposition, preprint.
- [2] Huang, F.*, Lu, K.* and **Zheng, Y.** (2024+). SARMA: Scalable low-rank high-dimensional autoregressive moving averages via tensor decomposition, preprint.
- [3] **Zheng, Y.** (2024). An interpretable and efficient infinite-order vector autoregressive model for high-dimensional time series. *Journal of the American Statistical Association*, to appear.
- [4] Wang, D.*, **Zheng, Y.**[†] and Li, G. (2024). High-dimensional low-rank tensor autoregressive time series modeling. *Journal of Econometrics*, **238**, 105544.
- [5] Zhu, Q., Tan, S.*, **Zheng, Y.** and Li, G. (2023). Quantile autoregressive conditional heteroscedasticity. *Journal of the Royal Statistical Society: Series B*, **85**, 1099–1127.
- [6] **Zheng, Y.**, Wu, J. and Li, G. (2023). Least absolute deviations estimation for nonstationary vector autoregressive time series models with pure unit roots. *Statistics and Its Interface*, **16**, 199–216.
- [7] Wang, D.*, **Zheng, Y.**, Lian, H. and Li, G. (2022). High-dimensional vector autoregressive time series modeling via tensor decomposition. *Journal of the American Statistical Association*, **117**, 1338–1356.
- [8] **Zheng, Y.** and Cheng, G. (2021). Finite time analysis of vector autoregressive models under linear restrictions. *Biometrika*, **108**, 469–489.

- [9] **Zheng, Y.**, Zhu, Q., Li, G. and Xiao, Z. (2018). Hybrid quantile regression estimation for time series models with conditional heteroscedasticity. *Journal of the Royal Statistical Society: Series B*, **80**, 975–993.
- [10] Zhu, Q., **Zheng, Y.**^{§,†} and Li, G. (2018). Linear double autoregression. *Journal of Econometrics*, **207**, 162–174.
- [11] **Zheng, Y.**, Li, W.K. and Li, G. (2018). A robust goodness-of-fit test for generalized autoregressive conditional heteroscedastic models. *Biometrika*, **105**, 73–89.
- [12] **Zheng, Y.**, Li, Y., Li, W.K. and Li, G. (2016). Diagnostic checking for Weibull autoregressive conditional duration models. In: Li, W.K., Stanford, D.A., Yu, H. (editors): *Advances in Time Series Methods and Applications: the A. Ian McLeod Festschrift*. Springer-Verlag, New York.
- [13] **Zheng, Y.**, Li, Y. and Li, G. (2016). On Fréchet autoregressive conditional duration models, *Journal of Statistical Planning and Inference*, **175**, 51–66.

PRESENTATIONS

Invited Conference Presentations

1. “High-dimensional Nonlinear Granger Causality via Recurrent Neural Networks,” 2024 IMS International Conference on Statistics and Data Science (ICSIDS), Nice, France, *December 2024*.
2. “Tensor Stochastic Regression via CANDECOMP/PARAFAC Decomposition,” 2024 Joint Statistical Meetings, Portland, Oregon, *August 2024*.
3. “An Interpretable and Efficient Infinite-Order Vector Autoregressive Model for High-Dimensional Time Series,” The 37th New England Statistics Symposium (NESS 2024), University of Connecticut, *May 2024*.
4. “High-Dimensional Low-Rank Tensor Autoregressive Time Series Modeling,” CMStatistics 2023, HTW Berlin, University of Applied Sciences, Berlin, Germany, *December 2023* (online).
5. “An Interpretable and Efficient Infinite-Order Vector Autoregressive Model for High-Dimensional Time Series,” 2023 Joint Statistical Meetings, Toronto, Ontario, Canada, *August 2023*.
6. “An Interpretable and Efficient Infinite-Order Vector Autoregressive Model for High-Dimensional Time Series,” 2023 ICSA Applied Statistics Symposium, University of Michigan, *June 2023*.
7. “An Interpretable and Efficient Infinite-Order Vector Autoregressive Model for High-Dimensional Time Series,” 10th International Purdue Symposium on Statistics (IPSS-2023), Purdue University, *June 2023*.
8. “An Interpretable and Efficient Infinite-Order Vector Autoregressive Model for High-Dimensional Time Series,” ASA/IMS Spring Research Conference, Banff Centre, Alberta, Canada, *May 2023*.
9. “An Interpretable and Efficient Infinite-Order Vector Autoregressive Model for High-Dimensional Time Series,” CFE-CMStatistic, King’s College London, *December 2022* (online).

10. “An Interpretable, Sparse and Tractable Parametric Approach to VARMA-type Time Series Modeling,” The 22nd IMS Meeting of New Researchers in Statistics and Probability, George Mason University, *August 2022*.
11. “Tensor Methods for High-Dimensional Time Series Modeling,” EcoSta2022, Ryukoku University, Kyoto, Japan, *June 2022* (online).
12. “Tensor Methods for High-Dimensional Time Series Modeling,” The 35th New England Statistics Symposium (NESS 2022), University of Connecticut, *May 2022*.
13. “A Novel Computationally Scalable High-Dimensional Vector Autoregressive Moving Average Model,” CMStatistics 2021, King’s College London, *December 2021* (online).
14. “A Novel Computationally Scalable High-Dimensional Vector Autoregressive Moving Average Model,” The 34th New England Statistics Symposium (NESS 2021), University of Rhode Island, *October 2021* (online).
15. “High-Dimensional Low-Rank Tensor Autoregressive Time Series Modeling,” ISBISKOCHI2020, Cochin University of Science & Technology, India, *December 2020* (online).
16. “Finite Time Analysis of Vector Autoregressive Models under Linear Restrictions,” The 33rd New England Statistics Symposium (NESS 2019), University of Connecticut, *May 2019*.
17. “Hybrid Quantile Regression Estimation for Time Series Models with Conditional Heteroscedasticity,” The 1st International Conference on Econometrics & Statistics (EcoSta2017), Hong Kong University of Science and Technology, Hong Kong, *June 2017*.
18. “Linear Double Autoregressive Time Series Model and Its Conditional Quantile Inference,” The 6th International IMS-FIPS (Finance, Insurance, Probability and Statistics) Workshop, University of Alberta, Canada, *July 2016*.

Invited Seminars and Scholarly Presentations

19. “New Advances in High-Dimensional Time Series Modeling,” Summer at Census Seminar, U.S. Census Bureau, *July 2024* (online).
20. “High-Dimensional Low-Rank Tensor Autoregressive Time Series Modeling,” Hunter College, CUNY, Department of Mathematics and Statistics, *February 2024* (online).
21. “High-Dimensional Low-Rank Tensor Autoregressive Time Series Modeling,” University of Maryland Baltimore County (UMBC), Department of Mathematics and Statistics, *February 2024* (online).
22. “Finite Time Analysis of Vector Autoregressive Models under Linear Restrictions,” Department of Statistics and Actuarial Science, University of Hong Kong, *June 2023*.
23. “Interpretable and Efficient Infinite-Order Vector Autoregressive Model for High-Dimensional Time Series,” Department of Information Systems and Statistics, Zicklin School of Business, Baruch College, *March 2023*.
24. “Tensor Methods for High-Dimensional Time Series Modeling,” SUNY Binghamton University, Department of Mathematics and Statistics, *May 2022* (online).
25. “High-Dimensional Low-Rank Tensor Autoregressive Time Series Modeling,” Shanghai University of Finance and Economics, School of Statistics and Management, *December 2021* (online).

26. “High-Dimensional Low-Rank Tensor Autoregressive Time Series Modeling,” University of Maryland, Department of Mathematics, *September 2020* (online).
27. “High-Dimensional Low-Rank Tensor Autoregressive Time Series Modeling,” University of Missouri, Department of Statistics, *September 2020* (online).
28. “High-Dimensional Low-Rank Tensor Autoregressive Time Series Modeling,” University of Connecticut, Department of Economics, *September 2020* (online).
29. “Finite Time Analysis of Vector Autoregressive Models under Linear Restrictions,” Boston College, Department of Economics, *December 2019*.
30. “Finite Time Analysis of Vector Autoregressive Models under Linear Restrictions,” Indiana University-Purdue University Indianapolis, Department of Mathematics, *October 2018*.

FUNDING

- (PI) National Science Foundation (DMS-2311178), *Advances in High-dimensional Time Series Modeling and Its Interface with Deep Learning*, 09/01/2023–08/31/2026.
- (PI) UConn OVPR Research Excellence Program, *Novel Statistical Modeling Techniques for High-Dimensional Time Series Data*, 06/01/2021–12/31/2022.

HONORS AND AWARDS

- Makuch Faculty Fellowship, University of Connecticut, 01/01/2023–12/31/2024.
- Elected Member of the International Statistical Institute (ISI), *Since 2022*.
- Institute of Mathematical Statistics (IMS) New Researcher Travel Award, *2022*.
- Excellence in Teaching Recognition, University of Connecticut, *Fall 2019*.
- University of Hong Kong:
 - Best Teaching Assistant Award, *Fall 2013, Fall 2014, Fall 2016 & Spring 2017*.
 - University Postgraduate Scholarship, *2013–2017*.
 - Undergraduate Research Fellowship & Excellent Poster Presentation Award, *2012*.
 - Statistics & Actuarial Science Scholarship, *2011*.
 - C.V. Starr Scholarship for Exchange Study at University of California, Los Angeles, *2010*.
 - Summer Research Fellowship & Best Poster Presentation Award, *2010*.

PROFESSIONAL ACTIVITIES AND SERVICES

Professional Service

- Program Chair-Elect 2025, Business and Economic Statistics (B&E) Section, American Statistical Association (ASA).
- Secretary/Treasurer, ASA B&E Section, *2023–2024*.
- Member, ASA B&E Section Student Paper Awards Committee, *2023 & 2024*.
- Chair, NESS Student Poster Awards Committee, *2022 & 2024*.
- Member, NESS Student Paper & Poster Awards Committees, *2021*.

- Member, Education Committee, New England Statistical Society, 2020–.

Editorial Service

- Associate Editor, *Sankhya Series A*, 2024–.

Referee Service

Annals of Statistics; Applied Stochastic Models in Business and Industry; Canadian Journal of Statistics; Communications in Statistics-Simulation and Computation; Computational Statistics; Computational Statistics and Data Analysis; Contemporary Clinical Trials; Data Science in Science; Economics Letters; Electronic Journal of Statistics; JMIR Public Health and Surveillance; Journal of Business & Economic Statistics; Journal of Data Science; Journal of Econometrics; Journal of Multivariate Analysis; Journal of Statistical Computation and Simulation; Journal of the American Statistical Association; Journal of the Korean Statistical Society; Journal of the Royal Statistical Society: Series B; Journal of Time Series Analysis; Open Health; Oxford Bulletin of Economics and Statistics; Quantitative Finance; Sankhya; Statistica Sinica; Statistical Analysis and Data Mining; Statistics and Its Interface; Statistics and Probability Letters; Statistics in Medicine; The Econometrics Journal.

Grant Proposal Reviewer

- Reviewer for the National Science Foundation (NSF)

Conference Service

- Organizer, invited session on “Modern Methods in Time Series and Econometrics,” 2024 Joint Statistical Meetings, Business and Economic Statistics Section, *August 2024*.
- Guest panelist, Virtual Time Series Seminar, “Tensor Principal Component Analysis” (Speaker: Andrii Babii), *September 2023*.
- Guest panelist, Virtual Time Series Seminar, “Sparse Identification and Estimation of Large-Scale Vector AutoRegressive Moving Averages” (Speaker: David Matteson), *January 2023*.
- Organizer, invited session on “Modern Statistical Learning Methods for Dynamic Models,” 2022 Joint Statistical Meetings, Business and Economic Statistics Section, *August 2022*.
- Organizer, invited session on “New Advances in High-dimensional Time Series Analysis,” the International Chinese Statistical Association (ICSA) Applied Statistics Symposium, *September 2021*.
- Organizer, invited session on “New Advances in Time Series Analysis,” the 63rd International Statistical Institute (ISI) World Statistics Congress 2021, *July 2021*.
- Organizing committee, the Pfizer/ASA/UConn Distinguished Statistician Series, *Since 2019*.
- Organizer, invited session on “High Dimensional Dependent Data Analysis,” the 33rd New England Statistics Symposium, University of Connecticut, *May 2019*.

Department Level Service

- Member, Committee on Graduate Students, Faculty and Distinguished Alumni Awards, *2023–*.
- Member, Committee on Alumni and Friends Receptions at JSM or Other Major Conferences, *2019–*.
- Member, Committee on Colloquium, *2019–*.
- Member, Committee on the Pfizer/ASA/UConn Distinguished Statisticians Series, *2019–*.

- Member, Committee on Makuch Distinguished Lecture Series, *2019–*.
- Member, Committee on Library/Tech Reports, *2019–2024*.

Professional Memberships

- Elected member, International Statistical Institute
- Member, American Statistical Association
- Member, Institute of Mathematical Statistics
- Member, New England Statistical Society