

Department of Statistics  
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# Yao Zheng

September 2023

## 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–*.

Post-doc and Visiting Assistant Professor, Department of Statistics and School of Industrial Engineering, Purdue University, *2017–2019*.

## HONORS AND AWARDS

- 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, *2010*.
  - Summer Research Fellowship & Best Poster Presentation Award, *2010*.

## FUNDING

- (PI) National Science Foundation (DMS-2311178), *Advances in High-dimensional Time Series Modeling and Its Interface with Deep Learning*, \$174,160, *09/01/2023–08/31/2026*.
- Makuch Faculty Fellowship, University of Connecticut, \$10,000, *01/01/2023–12/31/2024*.
- (PI) UConn OVPR Research Excellence Program, *Novel Statistical Modeling Techniques for High-Dimensional Time Series Data*, \$24,999, *06/01/2021–12/31/2022*.

## PUBLICATIONS

[Co-first author\*; Corresponding author<sup>†</sup>]

- [1] Wang, D., **Zheng, Y.**<sup>†</sup> and Li, G. (2023+). High-dimensional low-rank tensor autoregressive time series modeling. *Journal of Econometrics*, to appear.
- [2] Zhu, Q., Tan, S., **Zheng, Y.** and Li, G. (2023+). Quantile autoregressive conditional heteroscedasticity. *Journal of the Royal Statistical Society: Series B*, to appear.
- [3] **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.
- [4] 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.
- [5] **Zheng, Y.** and Cheng, G. (2021). Finite time analysis of vector autoregressive models under linear restrictions. *Biometrika*, **108**, 469–489.
- [6] **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.
- [7] Zhu, Q., **Zheng, Y.**<sup>\*,†</sup> and Li, G. (2018). Linear double autoregression. *Journal of Econometrics*, **207**, 162–174.
- [8] **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.
- [9] **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.
- [10] **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 Talks

- 1. “An Interpretable and Efficient Infinite-Order Vector Autoregressive Model for High-Dimensional Time Series”, 2023 Joint Statistical Meetings, Toronto, Ontario, Canada, *August 2023*.
- 2. “An Interpretable and Efficient Infinite-Order Vector Autoregressive Model for High-Dimensional Time Series”, 2023 ICSA Applied Statistics Symposium, University of Michigan, *June 2023*.
- 3. “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*.

4. “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*.
5. “An Interpretable and Efficient Infinite-Order Vector Autoregressive Model for High-Dimensional Time Series”, CFE-CMStatistic, King’s College London, *December 2022* (online).
6. “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*.
7. “Tensor Methods for High-Dimensional Time Series Modeling”, EcoSta2022, Ryukoku University, Kyoto, Japan, *June 2022* (online).
8. “Tensor Methods for High-Dimensional Time Series Modeling”, The 35th New England Statistics Symposium (NESS 2022), University of Connecticut, *May 2022*.
9. “A Novel Computationally Scalable High-Dimensional Vector Autoregressive Moving Average Model”, CMStatistics 2021, King’s College London, *December 2021* (online).
10. “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).
11. “High-Dimensional Low-Rank Tensor Autoregressive Time Series Modeling”, ISBISKOCHI2020, Cochin University of Science & Technology, India, *December 2020* (online).
12. “Finite Time Analysis of Vector Autoregressive Models under Linear Restrictions”, The 33rd New England Statistics Symposium (NESS 2019), University of Connecticut, *May 2019*.
13. “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*.
14. “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 Departmental Seminars**

15. “Finite Time Analysis of Vector Autoregressive Models under Linear Restrictions”, Department of Statistics and Acturial Science, University of Hong Kong, *June 2023*.
16. “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*.
17. “Tensor Methods for High-Dimensional Time Series Modeling”, SUNY Binghamton University, Department of Mathematics and Statistics, *May 2022* (online).
18. “High-Dimensional Low-Rank Tensor Autoregressive Time Series Modeling”, Shanghai University of Finance and Economics, School of Statistics and Management, *December 2021* (online).

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

## PROFESSIONAL ACTIVITIES AND SERVICES

### Professional Service

- Secretary/Treasurer, Business and Economic Statistics (B&E) Section, American Statistical Association (ASA), *2023–2024*.
- Member, ASA B&E Section Student Paper Awards Committee, *2023*.
- Chair, NESS Student Poster Awards Committee, *2022*.
- Member, NESS Student Paper & Poster Awards Committees, *2021*.
- Member, Education Committee, New England Statistical Society, *2020–*.

### Referee Service

*Annals of Statistics; Canadian Journal of Statistics; Communications in Statistics-Simulation and Computation; Computational Statistics; Contemporary Clinical Trials; 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 Time Series Analysis; Open Health; Quantitative Finance; Sankhya; Statistica Sinica; Statistical Analysis and Data Mining; Statistics and Its Interface; Statistics and Probability Letters; The Econometrics Journal*

### Grant Proposal Reviewer

- Reviewer for the National Science Foundation (NSF)

### Conference Service

- 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 Service**

- Member, Committee on Colloquium, *2019–*.
- Member, Committee on Alumni and Friends Receptions at JSM or other major conferences, *2019–*.
- Member, Committee on Makuch Distinguished Lecture Series, *2019–*.
- Member, Committee on Library/Tech Reports, *2019–*.

### **Professional Memberships**

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

## **STUDENT ADVISING**

### **PhD Students**

- Shibo Li, *current*.

### **Undergraduate Students**

- Miles Kee, Summer Research Assistant, *2022 & 2023*.
- Christine Nguyen, McNair Scholar Program, *2022*.

## **TEACHING**

University of Connecticut:

- STAT 3675Q Statistical Computing (4 cr., undergraduate level; *Spring 2022 & 2023*).
- STAT 4825/5825 Applied Time Series (3 cr., undergraduate and graduate levels; *Fall 2021–2023*).
- STAT/BIST 5515 Design of Experiments (3 cr., graduate level; *Fall 2019–2023*).
- STAT/BIST 5815 Longitudinal Data Analysis (3 cr., graduate level; *Spring 2020 & 2021*).

Purdue University:

- STAT 511 Statistical Methods (3 cr., undergraduate level; *Spring & Summer 2019*).