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EDUCATION

Ph.D. in Statistics, University of Michigan, Ann Arbor   Jul 2024

- Advisor: Prof. Yang Chen
- Thesis: Statistical Methods for Spatio-Temporal Tensor Data
- Research interest: Tensor Data Analysis, Spatio-Temporal Statistics, Astrostatistics.

M.S. in Applied Statistics, University of Michigan, Ann Arbor   May 2020

B.A. in Economics, Xiamen University, China   Jun 2018

Visiting Student in Economics, University of Oxford   Oct 2016 - Jun 2017

EMPLOYMENT

Quantitative Researcher, IMC Trading, Chicago, USA   Aug 2024 - Present

Quantitative Research Intern, IMC Trading, Chicago, USA   Jun 2023 - Aug 2023

Graduate Student Research Assistant, University of Michigan, Ann Arbor, USA   Jan 2022 - Jul 2024

Graduate Student Instructor, University of Michigan, Ann Arbor, USA   Jan 2020 - Dec 2021

Global Technology Intern, Bank of America, Beijing, China   Aug 2017 - Oct 2017

PUBLICATIONS

Under Review

1. **Sun, H.**, & Chen, Y. (2024). Conformalized Tensor Completion with Riemannian Optimization. [arXiv]

2. **Sun, H.**, Shang, Z., & Chen, Y. (2023). Matrix Autoregressive Model with Vector Time Series Covariates for Spatio-Temporal Data. [arXiv]

3. **Sun, H.**, Manchester, W., Jiao, Z., Wang, X., & Chen, Y. (2019). Interpreting LSTM Prediction on Solar Flare Eruption with Time-Series Clustering. [arXiv]

Published

1. Wang, Z., Zou, S., **Sun, H.**, & Chen, Y. (2023). Forecast Global Ionospheric TEC: Apply Modified U-Net on VISTA TEC Data Set. *Space Weather*, 21(8), e2023SW003494. [Link]

2. **Sun, H.**, Manchester, W., Jin, M., Liu, Y., & Chen, Y. (2023). Tensor Gaussian Process with Contraction for Multi-Channel Imaging Analysis. *International Conference on Machine Learning (ICML)*, PMLR 202:32913-32935. [Link]

3. **Sun, H.**, Chen, Y., Zou, S., Ren, J., Chang, Y., Wang, Z., & Coster, A. (2023). Complete Global Total Electron Content Map Dataset based on a Video Imputation Algorithm VISTA. *Scientific Data*, 10(1), 236. [Link]

4. **Sun, H.**, Hua, Z., Ren, J., Zou, S., Sun, Y., & Chen, Y. (2022). Matrix Completion Methods for the Total Electron Content Video Reconstruction. *The Annals of Applied Statistics*, 16(3), 1333-1358. [Link]

5. Sun, Z., Bobra, M. G., Wang, X., Wang, Y., **Sun, H.**, Gombosi, T., Chen, Y., & Hero, A. (2022). Predicting Solar Flares using CNN and LSTM on Two Solar Cycles of Active Region Data. *The Astrophysical Journal*, 931(2), 163. [Link]

6. **Sun, H.**, Manchester IV, W., & Chen, Y. (2021). Improved and Interpretable Solar Flare Predictions with Spatial and Topological Features of the Polarity Inversion Line Masked Magnetograms. *Space Weather*, 19(12), e2021SW002837. [Link]

7. Zou, S., Ren, J., Wang, Z., **Sun, H.**, & Chen, Y. (2021). Impact of Storm-Enhanced Density (SED) on Ion Upflow Fluxes during Geomagnetic Storm. *Frontiers in Astronomy and Space Sciences*, 8, 746429. [Link]

8. Jiao, Z., **Sun, H.**, Wang, X., Manchester, W., Gombosi, T., Hero, A., & Chen, Y. (2020). Solar Flare Intensity Prediction with Machine Learning Models. *Space Weather*, 18(7), e2020SW002440. [Link]

9. Wang, X., Chen, Y., Toth, G., Manchester, W. B., Gombosi, T. I., Hero, A. O., Jiao, Z., **Sun, H.**, Jin, M., & Liu, Y. (2020). Predicting Solar Flares with Machine Learning: Investigating Solar Cycle Dependence. *The Astrophysical Journal*, 895(1), 3. [Link]

AWARDS AND FELLOWSHIPS

• Best Visit Day Poster Presentation Award, Department of Statistics, University of Michigan	2023
• Oustanding GSI Team Award, Department of Statistics, University of Michigan	2021
• Departmental Fellowship, Department of Statistics, University of Michigan	2020
• Oustanding First Year Master Student, Department of Statistics, University of Michigan	2019
• Best Undergraduate Thesis Award, School of Economics, Xiamen University	2018
• Minxin Fund Scholarship, Minxin Fund, China	2016, 2018
• Oxford Prospect Program Fellowship, Xiamen University, China	2016
• Ace Manager Financial Case Study International Competition Global Top 20, BNP Paribas, France	2016
• National Finalist, Chinese National English Speaking Contest, FLTRP	2015
• First Place, Chinese National English Speaking Contest, Provincial Final, FLTRP	2015
• Dean's List Award, School of Economics, Xiamen University	2014, 2015
• Second Prize, Chinese Chemistry Olympiad, Chinese Chemical Society	2013
• First Prize, Zhejiang Chemistry Olympiad, Zhejiang Chemical Society	2013

TEACHING EXPERIENCE

• STATS 510: Probability and Distribution Theory	Fall 2021
• STATS 503: Statistical Learning II: Multivariate Analysis	Winter 2021
• STATS 426: Introduction to Theoretical Statistics	Fall 2020
• STATS 406: Computational Methods in Statistics and Data Science	Winter 2020

ACADEMIC SERVICES

Paper Review

- Advances in Neural Information Processing Systems (Neurips) (6)
- Statistics in Medicine (1)
- The New England Journal of Statistics in Data Science (1)
- Space Weather (4)

Conferences

- Session Chair for "Advancements in Spatial Epidemiology and Disease Mapping", Joint Statistical Meetings, Portland, OR, USA
  2024

ACADEMIC TALKS

Conformalized Tensor Completion with Riemannian Optimization

- **[Invited]** The 18th International Joint Conference on Computational and Financial Econometrics (CFE) and Computational and Methodological Statistics (CMStatistics). London, UK. 2024

- Michigan Student Symposium for Interdisciplinary Statistical Sciences (MSSISS). Ann Arbor, MI, USA. 2024

Tensor Gaussian Process with Contraction for Multi-Channel Imaging Analysis

- Session on "Computationally Tractable Solutions for Signal Detection in Searches for New Physics", Joint Statistical Meetings. Portland, OR, USA. 2024

- **[Poster]** The 40th International Conference on Machine Learning (ICML). Honolulu, HI, USA. 2023

- Michigan Student Symposium for Interdisciplinary Statistical Sciences (MSSISS). Ann Arbor, MI, USA. 2023

- American Geophysical Union (AGU) Meeting. Chicago, IL, USA. 2022

Matrix Auto-regressive Model With Vector Time-series Covariates for Spatio-Temporal Data

- The 16th International Conference of the ERCIM WG on Computational and Methodological Statistics (CMStatistics). Berlin, Germany. 2023

- **[Poster]** Michael Woodroofe Memorial Conference. Ann Arbor, MI, USA. 2023

- INFORMS Annual Meeting. Indianapolis, IN, USA. 2022

- Seminar series at the Department of Mathematical Sciences, New Jersey Institute of Technology. Newark, NJ, USA. 2022

Matrix Completion Method for the Total Electron Content Video Reconstruction

- American Geophysical Union (AGU) Meeting. Chicago, IL, USA. 2022

- Asia Oceania Geosciences Society (AOGS). Virtual. 2022

- Magnetosphere Online Seminar Series. Virtual. 2022

- Jet Propulsion Laboratory (JPL). Virtual. 2021

- CHASC Astrostatistics Seminar Series, Harvard University. Virtual. 2021

Interpretable Solar Flare Prediction with Spatial and Topological Data Analysis

- American Geophysical Union (AGU) Meeting. Virtual. 2021

- Department of Computer Science, Georgia State University. Virtual. 2021

- Joint Statistical Meeting (JSM). Virtual. 2021

- Conference on Applications of Statistical Methods and Machine Learning in the Space Sciences. Virtual. 2021

Interpretation of LSTM Prediction on Solar Flare Eruption

- **[Poster]** American Geophysical Union (AGU) Meeting. Virtual. 2020

- Michigan Student Symposium for Interdisciplinary Statistical Sciences (MSSISS). Ann Arbor, MI, USA. 2020

- W.W. Hansen Experimental Physics Lab, Stanford University. Palo Alto, CA, USA. 2019