Zhenhua Wang

Contact Information

Department of Statistics
University of Missouri
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Research Interests

Bayesian, physics-inspired, and modern data science methods for analyzing spatio-temporal datasets in official statistics and environmental science

Education

University of Missouri, Columbia, Missouri USA

Ph.D. Candidate, Statistics, October 2025 (expected graduation date: May 2026)

- Advisor: Scott H. Holan

Duke University, Durham, North Carolina USA

M.S., Interdisciplinary Data Science, May 2020

Shandong University of Science and Technology, Qingdao, Shandong China

B.S., Geographical Information Science, July, 2018

Experience

University of Missouri, Columbia, Missouri USA

Graduate Research Assistant July, 2022 - present

Graduate Teaching Assistant September, 2021 - May, 2022

- Stat 1200 Introductory Statistical Reasoning

Duke University, Durham, North Carolina USA

Graduate Research Assistant July, 2020 - July, 2021

Graduate Teaching Assistant September, 2019 - May, 2020

- IDS 705 Principles of Machine Learning
- Math 730 Probability

RENCI (Renaissance Computing Institute), Chapel Hill, North Carolina USA

Research Internship May, 2019 - August, 2019

Honors and Awards

Winning Paper - JSM Student Paper Competition 2025

GSS/SSS/SRMS

Joint Statistical Meetings Student Travel Award 2025

Survey Research Methods Section

Publications

Wang, Z., Parker, P.A., and Holan, S.H. (2025) Variational Autoencoded Multivariate Spatial Fay-Herriot Models. Spatial Statistics, 70, 100929.

Wang, Z., Holan, S. H., and Wikle, C. K. (2025). Echo state networks for spatio-temporal area-level data. Data Science in Science, 4(1), 2554883.

Rico-Straffon, J., **Wang, Z.**, Loucks, C. J., and Pfaff, A. (2025). When do extraction rights help

forests? Robustness and heterogeneity for linked interventions in the Peruvian Amazon. Conservation Science and Practice, e70081.

Rico-Straffon, J., **Wang, Z.**, Panlasigui, S., Loucks, C. J., Swenson, J., and Pfaff, A. (2023). Forest concessions and eco-certifications in the Peruvian Amazon: Deforestation impacts of logging rights and logging restrictions. Journal of Environmental Economics and Management, 118, 102780.

Wang, Z., Akande, O., Poulos, J. and Li, F. (2022). Are deep learning models superior for missing data imputation in surveys? Evidence from an empirical comparison. Survey Methodology, Statistics Canada, Catalogue No. 12-001-X, Vol. 48, No. 2.

Preprints

Rico-Straffon, J., **Wang, Z.**, and Pfaff, A. (2022). Comparing protection types in the Peruvian amazon: multiple-use protected areas did no worse for forests.

Papers in preparation

Wang, Z., Parker, P.A. and Holan, S.H. Approximated Hausdorff Gaussian process model.

Wang, Z., Holan, S.H. and Wikle, C.K. Bayesian graph diffusion model for spatio-temporal spreading process.

Software

Wang, Z., Parker, P.A., and Holan, S.H. (2025) vmsae - An R package for Variational Multivariate Spatial Small Area Estimation. Available at https://cran.r-project.org/web/packages/vmsae/index.html

Conference Presentations

Echo state networks for spatio-temporal area-level data, Joint Statistical Meetings, (JSM Student Paper Competition), Nashville, Tennessee USA, August 2025

Service

Space Time Reading Group Coordinator August 2025 - Current

Department of Statistics, University of Missouri

DataFest Mid-Missouri VIP Consultant 2022 - 2025

American Statistical Association

Computer Skills

- Languages: Python, R, C++, ELisp, Bash, LaTeX
- Softwares/packages: PyTorch, NumPyro, Keras, TensorFlow, Git, Stan, ArcGIS, Slurm, Emacs
- Operating Systems: GNU/Linux, macOS