

Wei Jin

Postdoctoral Fellow
Department of Applied Mathematics and Statistics
Johns Hopkins University

Email: wjin@jhu.edu
Homepage: <https://bluejw.github.io>

EDUCATION

Johns Hopkins University, Baltimore, MD

Ph.D. in Applied Mathematics and Statistics 2018 - 2022
Dissertation Title: *Novel Bayesian Methods for Precision Medicine in HIV*
Advisor: Yanxun Xu
M.S.E in Computer Science 2019 - 2021
M.S.E in Applied Mathematics and Statistics 2016 - 2018
Cumulative GPA: 4.00/4.00

Sichuan University, Chengdu, China

B.S. in Mathematics and Applied Mathematics 2012 - 2016
Honor Degree in Wu Yuzhang Honors College
Advisor: Nanjing Huang
Cumulative GPA: 3.72/4.00 (Rank: 1/37)

EMPLOYMENT

Postdoctoral Fellow 2022 - Present
Department of Applied Mathematics and Statistics
Johns Hopkins University, Baltimore, MD

Research Scientist Intern Summer 2022
Eli Lilly and Company, Indianapolis, IN

Research Assistant 2018 - 2022
Department of Applied Mathematics and Statistics
Johns Hopkins University, Baltimore, MD

RESEARCH INTERESTS

- **Theory and Methods**
Bayesian Nonparametrics, Dynamic Treatment Regimes, Reinforcement Learning,
Causal Discovery, Graphical Models, Longitudinal Data Analysis
- **Applications**
Electronic Health/Medical Record Data, Precision Medicine, Mental Health in People with HIV,
Early Detection of Alzheimer's Disease, Proportional Reasoning in Cognitive Science

PUBLICATIONS

1. **Jin, W.**, Ni, Y., Spence, A.B., Rubin, L.H., and Xu, Y. (2024) "*A Bayesian Approach for Investigating the Pharmacogenetics of Combination Antiretroviral Therapy in People with HIV.*" **Biostatistics**, Accepted.
2. Parra-Rodriguez, L., O'Halloran, J., Wang, Y., **Jin, W.**, Dastgheyb, R., Spence, A.B., Sharma, A., Gustafson, D., Milam, J., Weber, K., Adimora, A.A., Ofotokun, I., Fischl, M., Konkle-Parker, D., Maki, P.M., Xu, Y., and Rubin, L.H. (2024) "*Common Antiretroviral Combinations are Associated with Somatic Depressive Symptoms in Women with HIV.*" **AIDS**, 38(2), 167-176.

3. **Jin, W.**, Ni, Y., O'Halloran, J., Spence, A.B., Rubin, L.H., and Xu, Y. (2023) "A Bayesian Decision Framework for Optimizing Sequential Combination Antiretroviral Therapy in People with HIV." **Annals of Applied Statistics**, 17(4), 3035-3055. (Winner of the Conference on Advances in Bayesian and Frequentist Statistics Poster Award)
4. Rubin, L.H., Maki, P.M., Dastgheyb, R., Steigman, P., Burke-Miller, J., Xu, Y., **Jin, W.**, Sosanya, O., Gustafson, D., Merenstein, D., Milam, J., Weber, K., Springer, G., and Cook, J. (2023) "Trauma Across the Lifespan and Multisystem Morbidity in Women with HIV." **Psychosomatic Medicine**, 85(4), 341-350.
5. **Jin, W.**, Ni, Y., Rubin, L.H., Spence, A.B., and Xu, Y. (2022) "A Bayesian Nonparametric Approach for Inferring Drug Combination Effects on Mental Health in People with HIV." **Biometrics**, 78(3), 988-1000. (Winner of the Joint Statistical Meetings (JSM) Student Paper Award, Mental Health Statistics Section)
6. Gouet, C., **Jin, W.**, Naiman, D.Q., Peña, M., and Halberda, J. (2021) "Bias and Noise in Proportion Estimation: A Mixture Psychophysical Model." **Cognition**, 213, 104805.
7. Fitzgerald, K.C., Maki, P.M., Xu, Y., **Jin, W.**, Dastgheyb, R., Williams, D.W., Springer, G., Anastos, K., Gustafson, D., Spence, A.B., Adimora, A.A., Waldrop, D., Vance, D.E., Bolivar, H., Valcour, V.G., and Rubin, L.H. (2020) "Factors Predicting Detrimental Change in Declarative Memory Among Women with HIV: A Study of Heterogeneity in Cognition." **Frontiers in Psychology**, 11, 548521.
8. Xie, F., **Jin, W.**, and Xu, Y. (2019) "Rates of Contraction with Respect to L_2 -Distance for Bayesian Nonparametric Regression." **Electronic Journal of Statistics**, 13(2), 3485-3512.

PAPERS UNDER REVIEW

9. **Jin, W.**, Ni, Y., Spence, A.B., Rubin, L.H., and Xu, Y. "Directed Cyclic Graphs for Simultaneous Discovery of Time-Lagged and Instantaneous Causality from Time-Series Data." **Journal of Machine Learning Research**, Revision Submitted.
10. **Jin, W.**, Gao, Q., and Xu, Y. "BayTetra: A Bayesian Semiparametric Approach for Testing Trajectory Differences." **Statistics in Medicine**, Under Review.

PAPERS IN PREPARATION

11. **Jin, W.**, Wang, Z., and Xu, Y. "Bayesian Longitudinal Model of Alzheimer's Disease Biomarkers with an Unknown Gold Standard."
12. **Jin, W.**, Ni, Y., and Xu, Y. "Bayesian Causal Learning for Individualized Treatment Rules Under Unmeasured Confounding."
13. Yao, D., **Jin, W.**, and Xu, Y. "Deep Reinforcement Learning for Optimizing Sequential Personalized Treatments Under Non-Markov Environments."
14. Park, S., **Jin, W.**, and Xu, Y. "Functional Causal Discovery for Mixed-Type Longitudinal Data."

INVITED TALKS

- Division of Biostatistics, Department of Population Health
New York University Grossman School of Medicine, New York, NY
Title: *A Bayesian Decision Framework for Optimizing Sequential Combination Antiretroviral Therapy in People with HIV* December 2023
- International Chinese Statistical Association (ICSA)
Applied Statistics Symposium, Ann Arbor, MI
Title: *Long-Short-Term Cyclic Structural Causal Model for Time-Series Causal Discovery* June 2023
- Bayesian Seminar, Eli Lilly and Company, Indianapolis, IN
Title: *A Bayesian Nonparametric Approach for Inferring Drug Combination Effects on Mental Health in People with HIV* July 2022

CONTRIBUTED PRESENTATIONS

- Joint Statistical Meetings (JSM), Toronto, ON, Canada August 2023
Title: *Long-Short-Term Cyclic Structural Causal Model for Time-Series Causal Discovery*
- Eastern North American Region (ENAR) March 2023
International Biometric Society Spring Meeting, Nashville, TN
Title: *A Bayesian Decision Framework for Optimizing Sequential Combination Antiretroviral Therapy in People with HIV*
- Conference on Advances in Bayesian and Frequentist Statistics April 2022
Rutgers University, New Brunswick, NJ (Poster Session)
Title: *A Bayesian Decision Framework for Optimizing Sequential Combination Antiretroviral Therapy in People with HIV*
- Joint Statistical Meetings (JSM), Virtual August 2021
Title: *A Bayesian Nonparametric Approach for Inferring Drug Combination Effects on Mental Health in People with HIV*
- World Meeting of the International Society for Bayesian Analysis (ISBA), Virtual June 2021
Title: *A Bayesian Tree Model for Inferring Longitudinal Drug Combination Effects on Depression in People with HIV*
- International Chinese Statistical Association (ICSA) December 2020
Applied Statistics Symposium, Virtual (Poster Session)
Title: *A Bayesian Nonparametric Approach for Inferring Drug Combination Effects on Mental Health in People with HIV*
- Applied Mathematics and Statistics Student Seminar October 2020
Johns Hopkins University, Baltimore, MD
Title: *A Bayesian Nonparametric Approach for Inferring Drug Combination Effects on Mental Health in People with HIV*
- Applied Mathematics and Statistics Student Seminar October 2017
Johns Hopkins University, Baltimore, MD
Title: *Mathematical Models of Proportional Reasoning in Cognitive Science*

HONORS AND AWARDS

- Junior Participant Travel Award 2023
CBMS Conference - Foundations of Causal Graphical Models and Structure Discovery
National Science Foundation (NSF) and Department of Statistics, Texas A&M University
- Rufus P. Isaacs Graduate Fellowship 2022
Department of Applied Mathematics and Statistics, Johns Hopkins University
- Conference on Advances in Bayesian and Frequentist Statistics Poster Award 2022
Department of Statistics, Rutgers University
- Conference on Advances in Bayesian and Frequentist Statistics Student Travel Award 2022
Department of Statistics, Rutgers University
- Joint Statistical Meetings (JSM) Student Paper Award 2021
American Statistical Association, Mental Health Statistics Section
- Acheson J. Duncan Fund for the Advancement of Research in Statistics 2017
Department of Applied Mathematics and Statistics, Johns Hopkins University
- First Class Scholarship for Undergraduate Study 2015
School of Mathematics, Sichuan University
- Honorable Mention of Mathematical Contest in Modeling 2014
Consortium for Mathematics and its Applications

TEACHING AND MENTORING

- **Teaching Assistant**

Johns Hopkins University, Baltimore, MD

- EN.553.602 Research and Design in Applied Mathematics Spring 2020
- EN.553.636 Data Mining/Introduction to Data Science Fall 2018, Spring 2019, Spring 2020
- EN.553.720 Probability Theory I Fall 2019
- EN.553.731 Statistical Theory II Spring 2018, Spring 2019
- EN.553.782 Statistical Uncertainty Quantification Fall 2018

- **Student Advising**

Johns Hopkins University, Baltimore, MD

- Sehee Park, Ph.D. Candidate, Applied Mathematics and Statistics 2023 - Present
- Qixun Gao, Master's Student, Applied Mathematics and Statistics 2023 - Present

ACADEMIC SERVICES

- **Professional Memberships**

- American Statistical Association (ASA)
- Eastern North American Region (ENAR) International Biometric Society
- International Chinese Statistical Association (ICSA)
- International Society for Bayesian Analysis (ISBA)

- **Journal Reviewer**

- Biometrics

TECHNICAL SKILLS

- Proficient in R, Python, C++, SQL, Linux, LaTeX