

Yuliang Xu

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EMPLOYMENT

Assistant Professor

Department of Applied Mathematics and Statistics
Department of Biostatistics (secondary)
Johns Hopkins University

Jul 2026- Present

Postdoctoral Associate

Department of Statistics, University of Chicago
Department of Statistical Science, Duke University
▪ Advisor: Li Ma

Jul 2025- Jun 2026

Jul 2024- Jun 2025

EDUCATION

University of Michigan

- PhD in Biostatistics
- Advisor: Jian Kang

Sep 2019- Jun 2024

University of Waterloo

▪ MMath in Statistics
Research internship at University of Toronto (Biostatistics Training Initiative)

Sep 2017 – Apr 2019

May 2018 – Dec 2018

South China University of Technology

- B.S. in Mathematics and Applied Mathematics
- Cumulative GPA: 3.81 / 4.00

Sep 2013 – Jun 2017

INTERESTS

Theory and Methods

- Bayesian statistics • Generative Models • Causal inference • Optimal transport
- Empirical process and Nonparametric inference

Data and Applications

- Brain imaging data • Microbiome data

PUBLICATION

PREPRINTS

- [13] **Yuliang Xu**, Yun Wei, and Li Ma, “Distributional Evaluation of Generative Models via Relative Density Ratio”. *arXiv:2510.25507* Under revision.
- [12] **Yuliang Xu**, Kaixuan Luo, and Li Ma, “A tree-based kernel for densities and its applications in clustering DNase-seq profiles”. *arXiv:2509.15480* Under revision.
- [11] Naoki Awaya, **Yuliang Xu**, and Li Ma, “Two-sample comparison through additive tree models for density ratios”. *arXiv:2508.03059* Under revision.
- [10] Florian Gunsilius, **Yuliang Xu** “Matching for causal effects via multimarginal optimal transport.” *arXiv:2112.04398* Under revision.

PUBLICATIONS

- [9] **Yuliang Xu**, Shu Yang, and Jian Kang, “Bayesian Structured Mediation Analysis With Unobserved Confounders”. *arXiv:2407.04142v1* Biometrics (2026)
- [8] **Yuliang Xu**, Timothy D. Johnson, Thomas E. Nichols, and Jian Kang, “Scalable Bayesian Image-on-Scalar Regression for Population-Scale Neuroimaging Data Analysis”. *arXiv:2404.13204* Journal of the American Statistical Association (A&CS) just-accepted (2026): 1-21.
- [7] **Yuliang Xu**, Timothy D Johnson, Mary Heitzeg, and Jian Kang, “Bayesian Image Mediation Analysis”. *arXiv:2310.16284* Journal of the American Statistical Association (T&M) just-accepted (2026): 1-25. [A previous version received the **ASA Best Student paper award** in Section on Bayesian Statistical Science (SBSS 2022).]
- [6] **Yuliang Xu** and Jian Kang, “Bayesian Image Regression with Soft-thresholded Conditional Autoregressive prior”. Proceedings of the Thirteenth International Conference on Learning Representations (ICLR) 2025
- [5] **Yuliang Xu**, Shuo Shuo Liu and Grace Y. Yi, “mgee2: An R package for marginal analysis of longitudinal ordinal data with misclassified responses and covariates.” *R journal* 2021.

- [4] Shir Atzil, Ajay B Satpute, Jiahe Zhang, Michael H Parrish, Holly Shablack, Jennifer K MacCormack, Joseph Leshin, Srishti Goel, Jeffrey A Brooks, Jian Kang, **Yuliang Xu**, Matan Cohen, Kristen A Lindquist, “The impact of sociality and affective valence on brain activation: A meta-analysis” *NeuroImage* Mar 2023.
- [3] HT Phan, MJ Reeves, S Gall, LB Morgenstern, **Y Xu**, LD Lisabeth, “Factors Contributing to Sex Differences in Health Related Quality of Life After Ischemic Stroke: BASIC (Brain Attack Surveillance in Corpus Christi) Project.” *Journal of the American Heart Association* Sep 2022.
- [2] Devin L. Brown, Azadeh Yadollahi, Kevin He, **Yuliang Xu**, Bryan Piper, Erin Case, Ronald D. Chervin, Lynda D. Lisabeth, “Overnight Rostral Fluid Shifts Exacerbate Obstructive Sleep Apnea After Stroke.” *Stroke* Jul 2021.
- [1] Eric L. Stulberg, Erica Twardzik, Sehee Kim, Chia-Wei Hsu, **Yuliang Xu**, Philippa Clarke, Lewis B. Morgenstern, and Lynda D. Lisabeth “Association of Neighborhood Socioeconomic Status With Outcomes in Patients Surviving Stroke” *Neurology* 2021.

AWARDS & SCHOLARSHIPS

- Rackham Travel Award, University of Michigan, 2022 – 2023
- ASA Best Student paper award in Section on Bayesian Statistical Science (SBSS), Funded to give a presentation at JSM 2022. 2022
- Statistics and Actuarial Science Chair Award, University of Waterloo 2018
- UW Grad Scholarship, University of Waterloo, Fall 2017, Winter 2018 2017 – 2018
- International Masters Student Award, University of Waterloo, Fall 2017, Winter 2018 2017 – 2018
- COMAP’s Mathematical Contest in Modeling (MCM) and The Interdisciplinary Contest in Modeling (ICM) 2015 – 2016
Won Honorable Mention for two years, as a team leader in 2016.
- Excellent Student Scholarship, South China University of Technology 2015 – 2016
- The Chinese Mathematics Competitions 2015, Guangdong Province Contest 2015
Won Third Prize in provincial math contest.
- China Undergraduate Mathematical Contest in Modelling 2015, Guangdong Province Contest 2015
Won Third Prize in provincial math modeling contest.
- China National Scholarship 2014
Awarded to one student in each cohort in the Department of Mathematics

PRESENTATIONS

- **14th International Conference on Bayesian Nonparametrics (BNP14 2025)** *A Hierarchical Tree Model for Multi-sample Density Estimation and Clustering*, Poster
- **2025 Statistical Methods in Imaging Conference (SMI 2025)** *Bayesian Structured Mediation Analysis With Unobserved Confounders*, Invited Talk
- **2025 ICSA Applied Statistics Symposium** *A Hierarchical Tree Model for Multi-sample Density Estimation and Clustering*, Invited Talk
- **2025 International Conference on Learning Representations (ICLR 2025)** *Bayesian Image Regression with Soft-thresholded Conditional Autoregressive prior*, Poster
- **Michigan Biostats Brown Bag Seminar 2025** *A Hierarchical Tree Model for Multi-sample Density Estimation and Clustering*, Invited Talk
- **Duke StatSci Research Alumni Symposium 2024** *Bayesian Structured Mediation Analysis With Unobserved Confounders*, Poster Presentation
- **ENAR 2023** *Scalable Bayesian Image-on-Scalar Regression for Population-Scale Neuroimaging Data Analysis*, Contributed Talk
- **JSM 2023** *Bayesian Image Mediation Analysis*, Topic-contributed Talk

SERVICES

- **Reviewer** Statistics in Medicine, Annals of Applied Statistics, Biometrics, Journal of the American Statistical Association A&CS, Journal of Computational Biology
- **Judge** ASA 2025 Section on Bayesian Statistical Science Student Paper Competition

TEACHING EXPERIENCE

- University of Michigan** Sep 2020 – Dec 2020
- Held office hours, and marked assignments, tests, final projects.
 - BIOSTAT 653, 2020 Fall, Longitudinal Data Analysis

University of Waterloo

Sep 2017 – Apr 2018

- Held office hours, and marked assignments/tests.
 - STAT 372, 2018 Winter, Survey Sampling
 - STAT 341, 2018 Winter, Computational Stats and Data Analysis
 - STAT 331, 2017 Fall, Applied Linear Models
 - STAT 206, 2017 Fall, Statistics for Software Engineering

**PROGRAMMING
LANGUAGE**

Most proficient: R and C++; Skilled user of MATLAB and Python.

REFERENCES

Dr. Li Ma <li.ma@uchicago.edu>, Department of Statistics, University of Chicago;
Dr. Jian Kang <jiankang@umich.edu>, Department of Biostatistics, University of Michigan;
Dr. Florian Gunsilius <fgunsil@emory.edu>, Department of Economics (Econometrics), Emory University.
Dr. Xuanlong Nguyen <xuanlong@umich.edu>, Department of Statistics, University of Michigan;
Dr. Zhenke Wu (teaching) <zhenkewy@umich.edu>, Department of Biostatistics, University of Michigan.