Yao Ji

H. Milton Stewart Postdoctoral Fellow

Address: ISyE main building, 755 Ferst Dr NW, Atlanta, GA 30318

Email: yji300@gatech.edu | Website: yaoji-academic.com | Google Scholar: scholar.google.com

EMPLOYMENT

Georgia Institute of Technology, Atlanta, Georgia — Oct. 2024 —

H. Milton Stewart School of Industrial and Systems Engineering (ISyE)

H. Milton Stewart Postdoctoral Fellow

Host: Guanghui (George) Lan

EDUCATION

Purdue University, West Lafayette, Indiana — Aug. 2019 — Aug. 2024

Ph.D. in Operation Research

Advisor: Harsha Honnappa

Committee: Harsha Honnappa, Raghu Pasupathy, Alex L. Wang, Gesualdo Scutari

Thesis: High-dimensional inference over networks: statistical and computational guarantees

Beijing Normal University, Beijing, China — Aug. 2016 — Jun. 2019

M.S. in Probability and Mathematical Statistics

Advisor: Wenming Hong

Thesis: Conditional Limit Theorem for Bellman-Harris Branching Process

Beijing Normal University, Beijing, China — Aug. 2012 — Jun. 2016

B.S. in Mathematics

Thesis: Conceptual New Proofs of Geometric Convergence of Moment Generating Function for Galton-Waston Process in the Noncritical Case

RESEARCH INTERESTS

Algorithms and applications of stochastic optimization and nonlinear programming; First and high-order adaptive methods for stochastic optimization; Distributed machine learning; Statistical machine learning; High-dimensional estimation and inference; Branching process.

PUBLICATIONS

Stochastic Auto-conditioned Fast Gradient Methods with Optimal Rates

Yao Ji, Guanghui (George) Lan

`ArXiv preprint arXiv:2604.06525, 2026`

`Submitted to Mathematical Programming, Series A.`

Transformer Based Patient Response Modeling Across All Perioperative Phases for Cardiac Surgery Associated Acute Kidney Injury Management

Yao Ji, Yan Li, Guanghui (George) Lan, Zehua Dong, Shuoling Li, Ilker Guven, Xiaoyu Chen, Lihui Bai, Jiapeng Huang

`Society of Cardiovascular Anesthesiologists 2026`

High-order Accumulative Regularization Methods for Gradient Minimization in Convex Programming

Yao Ji, Guanghui (George) Lan

`ArXiv preprint arXiv:2511.03723, 2025`

`Submitted to SIAM Conference on Optimization`

Provable Robustness to Spurious Correlations via Invariant Data for Robust Finetuning

Ruqi Bai, **Yao Ji**, Mingyu Kim, Easton Currie, Zeyu Zhou, David I. Inouye
Accepted to AISTATS Workshop 2026

From Invariant Representations to Invariant Data: Provable Robustness to Spurious Correlations via Noisy Counterfactual Matching
Ruqi Bai, **Yao Ji**, Zeyu Zhou, David I. Inouye
`ArXiv preprint arXiv:2505.24843, 2025`
`Submitted to ICLR 2026`

Distributed Sparse Regression via Penalization
Yao Ji, Gesualdo Scutari, Ying Sun, Harsha Honnappa
`Journal of Machine Learning Research, 2023`

Distributed (ATC) Gradient Descent for High Dimension Sparse Regression
Yao Ji, Gesualdo Scutari, Ying Sun, Harsha Honnappa
`IEEE Transactions on Information Theory, 2023`

Reduced critical Bellman–Harris branching processes for small populations
Vladimir Vatutin, **Yao Ji**, Wenming Hong
`Discrete Mathematics and Applications, 2018`

WORKING PAPERS

Complexity of Strong Solutions for Variational Inequalities
Yao Ji, George Lan, Jason Zhu

TEACHING EXPERIENCE

Purdue University, School of Industrial Engineering
Teaching Assistant:

IE 335 Operation Research	Fall, Spring 2023
IE 330 Probability and Statistics in Engineering	Fall 2022
IE 590 Introduction to Optimization Algorithms (graduate level)	Fall 2022

Beijing Normal University, School of Mathematical Science
Co-lecture:

Large Deviation Theory	Spring 2018
Brownian Motion	Fall 2017
Random Walk in Random Environment	Spring 2017
Galton-Waston Branching Process	Fall 2016

Teaching Assistant (Outstanding Teaching Assistant):

Measure Theory I	Fall 2017, Fall 2018
Measure Theory II	Spring 2017, Spring 2018
Stochastic Calculus for Finance (graduate level)	Fall 2016

AWARDS AND HONORS

H. Milton Stewart Postdoctoral Fellow, Georgia Institute of Technology	2024
Lee A Chaden Fellow IE Scholarship, Purdue University	2023
Graduate School Summer Research Grant, Purdue University	2023
Travel Grant from Industrial Engineering, Purdue University	2022, 2023
Ross Fellowship, Purdue University	2019, 2020
Dr. Theodore J. and Isabel M. Williams Fellowship in Industrial Control Systems, Purdue University	2019

First Prize Scholarship (Ranked 2/53, School of Mathematics), Beijing Normal University 2018
First Prize Scholarship (Ranked 1/12, Markov Process), Beijing Normal University 2017
Outstanding Teaching Assistant for Measure Theory, Beijing Normal University 2017
Outstanding Undergraduate Thesis in School of Mathematics, Beijing Normal University 2016
First Prize Scholarship (Top 5%), School of Mathematics, Beijing Normal University 2015
Second Prize Scholarship, School of Mathematics, Beijing Normal University 2014
Second Prize in China Undergraduate Mathematical Modeling Contest (Top 5%) 2014

PRESENTATIONS

Informs Annual Meeting, Atlanta 2025
SIAM Conference on Mathematics of Data Science, Atlanta 2024
International Symposium on Mathematical Programming, Montréal 2024
Cornell Young researchers Workshop, Ithaca 2023
Statistics and Optimization in Data Science Workshop, Purdue, West Lafayette 2023
Midwest Machine Learning Symposium, UIC, Chicago 2023
International Conference on Continuous Optimization and the Modeling and Optimization, Lehigh, Bethlehem 2022

SERVICE

Referee for Journal of the American Statistical Association
Referee for Stochastic Systems
Referee for Mathematical Programming
Referee for SIAM Journal on Optimization
Referee for Operation Research
Referee for Journal of Global Optimization
Referee for IEEE International Symposium on Information Theory
Referee for IEEE Transactions on Automatic Control
President for INFORMS Student Chapter Board, School of Industrial Engineering, Purdue University