Yao Ji

(765) 714-5066
jiyao@purdue.edu
yaoji.netlify.app
gitHub.com/yaogeji
324F Grissom Hall,
West Lafayette, IN, 47907

EDUCATION

Aug. 2019 – May 2024 (expected)

Ph.D., School of Industrial Engineering

Purdue University, West Lafayette, Indiana

- *Major:* Operation Research

Aug. 2016 – May 2019

M.S., School of Mathematical Sciences

Beijing Normal University, Beijing, China

- *Major:* Probability and Mathematical Statistics
- Core Courses GPA: 3.92
- Thesis: Conditional Limit Theorem of Bellman-Harris Branching Porcess

Aug. 2012 – May 2016

B.S., School of Mathematical Sciences

Beijing Normal University, Beijing, China

- *Major:* Statistics
- Core Courses GPA: 3.67
- Thesis: Conceptual New Proofs of Geometric Convergence of Moment Generating Function for Galton-Waston Process in the Noncritical Cases

RESEARCH INTEREST

statistical learning, decentralized estimation and inference, distributed optimization theory, stochastic optimization, high-dimensional probability and statistics

PUBLICATIONS

Apr. 2023

- **Yao Ji**, Gesualdo Scutari, Ying Sun, Harsha Honnappa "Distributed (ATC) Gradient Descent for High Dimension Sparse Regression" *In IEEE Transactions on Information Theory (Early Access)*

TBD

- **Yao Ji**, Gesualdo Scutari, Ying Sun, Harsha Honnappa "Distributed Sparse Regression via Penalization" , *In Journal of Machine Learning Research (Accept with Minor Revision)*

Oct. 2018

- Vladimir Vatutin, **Yao Ji**, Wenming Hong "Reduced critical Bellman–Harris branching processes for small populations" , *In Journal Discrete Mathematics and Applications*

RESEARCH EXPERIENCE

Jan. 2023 – Present

Distributed Stochastic Mirror Descent for Stochastic Optimization

Advisor: Dr. Gesualdo Scutari, Dr. Harsha Honnappa, West Lafayette, Indiana

- Unified decentralized stochastic mirror descent.
- Stochastic optimization and sparse statistical recovery over a network

Jan. 2022 – Jan. 2023

Distributed (ATC) Gradient Descent for High Dimension Sparse Regression

Advisor: Dr. Gesualdo Scutari, Dr. Harsha Honnappa, West Lafayette, Indiana

- A first statistical study of the Distributed Gradient Descent (DGD) in the Adapt-Then-Combine (ATC) form in the high dimension

Aug 2019 - Jan. 2022

Distributed Sparse Regression via Penalization

Advisor: Dr. Gesualdo Scutari, Dr. Harsha Honnappa, West Lafayette, Indiana

- Statistical analysis of the penalized network LASSO problem
- Algorithmic linear convergence and statistical guarantees in the high diemnsion

POSTER PRESENTATION

July. 2022 The seventh International Conference on Continuous Optimization (ICCOPT) and the Modeling and Optimization, Lehigh, Bethlehem

May. 2023 Midwest Machine Learning Symposium, UIC, Chicago

May. 2023 Statistics and Optimization in Data Science Workshop, Purdue, West Lafayette

TEACHING EXPERIENCE

Jan. 2023 – Present

Optimization Teaching Assistant

Advisor: Dr. Gesualdo Scutari, West Lafayette, Indiana

- IE 33500 Operation Research-Optimization teaching assistant.

Aug. 2022 – Jan. 2023

Introduction to Optimization Algorithms

Advisor: Dr. Gesualdo Scutari, West Lafayette, Indiana

- IE 59000 Introduction to Optimization Algorithms

Aug. 2022 – Jan. 2023

Probability and Statistics in Engineering II

Advisor: Dr. Mohamed Salama, West Lafayette, Indiana

- IE 33000 Probability and Statistics in Engineering

Sep. 2017 – Jan. 2018
Sep. 2018 – Jan. 2019

Measure Theory

School of Mathematical Sciences, Beijing, China

AWARDS AND HONORS

2023 Graduate School Summer Research Grant, Purdue University

2019 Dr. Theodore J. and Isabel M. Williams Fellowship in Industrial Control Systems, Purdue University

2019 Ross Fellowship, Purdue University

2018 First Prize Scholarship (ranked 2/53, School of Mathematics), Beijing Normal University

2017 First Prize Scholarship (ranked 1/12, Markov Process), Beijing Normal University

2017 Outstanding Teaching Assistant for Measure Theory, Beijing Normal University

2016 Outstanding Undergraduate Thesis in School of Mathematical Sciences

2016 First Prize Scholarship (ranked 1/12 in Markov Process)

2015 First Prize Scholarship (Top 5%), School of Mathematics, Beijing Normal University

2014 Second Prize Scholarship (Top 20%), School of Mathematics, Beijing Normal University

2014 Second Prize in China Undergraduate Mathematical Contest in Modeling (Top 5%), School of Mathematics, Beijing Normal University