Xingyu Wang

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RESEARCH INTERESTS

- Rare Event Analysis, Large Deviations and Metastability, Heavy Tails
- Machine Learning Theory
- Stochastic Simulation

EDUCATION

Northwestern University, McCormick School of Engineering Evanston, IL

- Ph.D. in Industrial Engineering and Management Sciences, *GPA: 4.0/4.0* 2018 - Present
    Advisor: Chang-Han Rhee
- M.S. in Analytics, *GPA: 3.98/4.00* 2016 - 2017

Peking University Beijing, China

- B.S. in Psychology (*GPA: 3.8/4.0*) and Applied Mathematics (*GPA: 3.94/4.00*) 2011 - 2016

WORKING PAPERS

Large Deviations and Metastability Analysis for Heavy-Tailed Dynamical Systems [pdf]

Xingyu Wang, Chang-Han Rhee
To be submitted to *Probability Theory and Related Fields*, `arXiv:2307.03479`
Second Place, George Nicholson Student Paper Competition, 2023

Strongly Efficient Rare-Event Simulation for Multiple Jump Events in Regularly Varying Lévy Processes with Infinite Activities [pdf]

Xingyu Wang, Chang-Han Rhee
To be submitted to *Mathematics of Operations Research*, `arXiv:2309.13820`

SELECTED PUBLICATIONS

Importance Sampling Strategy for Heavy-Tailed Systems with Catastrophe Principle [pdf]

Xingyu Wang, Chang-Han Rhee
Proceedings of Winter Simulation Conference (WSC), 2023

Eliminating Sharp Minima from SGD with Truncated Heavy-Tailed Noises [pdf]

Xingyu Wang, Sewoong Oh, Chang-Han Rhee
Proceedings of International Conference on Learning Representations (ICLR), 2022
Nemhauser Prize for Best Student Paper, *2022*

Efficient Rare-Event Simulation for Multiple Jump Events in Regularly Varying Lévy Processes with Infinite Activities [pdf]

Xingyu Wang, Chang-Han Rhee
Proceedings of Winter Simulation Conference (WSC), 2020

Competitive Multi-Agent Inverse Reinforcement Learning with Sub-Optimal Demonstrations [pdf]

Xingyu Wang, Diego Klabjan
Proceedings of International Conference on Machine Learning (ICML), 2018

HONORS AND AWARDS	• **Second Place, George Nicholson Student Paper Competition**, INFORMS 2023
	• **Terminal Year Fellowship**, Northwestern University 2023
	• **Nemhauser Prize for Best Student Paper**, Department of Industrial Engineering and Management Sciences, Northwestern University 2022
	• **Benjamin A. Sachs Graduate Fellowship**, Northwestern University 2022
	• **Arthur P. Hurter Award for Academic Excellence among First Year Graduate Students**, Department of Industrial Engineering and Management Sciences, Northwestern University 2019
	• **Lee Wai Wang Scholarship**, Department of Psychology, Peking University 2015
	• **National Scholarship of Undergraduates**, Department of Psychology, Peking University 2013

INVITED PRESENTATIONS	**Large Deviation and Metastability Analysis for Heavy-Tailed Dynamical Systems**
	• INFORMS Annual Meeting, Phoenix, AZ Oct, 2023
	• Cornell ORIE Young Researchers Workshop, Ithaca, NY Oct, 2023
	Importance Sampling Strategy for Heavy-Tailed Systems with Catastrophe Principle
	• Winter Simulation Conference (Advanced Tutorial), San Antonio, TX Scheduled for Dec, 2023
	Eliminating Sharp Minima from SGD with Truncated Heavy-Tailed Noises [slides]
	• INFORMS Annual Meeting, Phoenix, AZ Scheduled for Oct, 2023
	• Applied Probability Society 2023 Conference, Nancy, France Jun, 2023
	• INFORMS Annual Meeting, Indianapolis, IN Oct, 2022
	• International Conference on Learning Representations (2022), Virtual Apr, 2022
	• DeepMath (2021), Virtual Nov, 2021
	Efficient Rare-Event Simulation for Multiple Jump Events in Regularly Varying Lévy Processes with Infinite Activities [slides]
	• Winter Simulation Conference, Virtual Dec, 2020
	• INFORMS Annual Meeting, Virtual Nov, 2020

TEACHING EXPERIENCE	**Instructor**
	• IEMS Bootcamp (Probability) for PhD Students 2022 Fall, 2023 Fall
	Teaching Assistant
	• IEMS 317 Discrete Event Systems Simulation 2022 Winter; 2021 Winter
	• IEMS 315 Stochastic Models 2021 Spring, Fall; 2020 Spring, Fall
	Course Grader
	• OPNS 450 Decision models & Prescriptive Analytics 2022 Winter
	• IEMS 435 Stochastic Simulation 2020 Winter

PROFESSIONAL SERVICES	• Reviewer, *INFORMS Journal on Computing, Winter Simulation Conference (WSC)*
	• Webmaster, Stochastic Networks, Applied Probability, and Performance (SNAPP) seminar (2023)
	• Mentor, 1st-year mentorship program (2020,2021), NU INFORMS Student Chapter

Industrial
Experience

Graduate Student Analytics Consultant, Chicago Park District   Chicago, IL
                                                                                  Oct 2016 - May 2017

Data Analyst Intern, 17zuoye (aka Homework Together, K12 education platform)Beijing, China
                                                                                  Aug - Dec 2015

References

Anton Braverman
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Walter P. Murphy Professor Emeritus
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