

Xingyu Wang

CONTACT INFORMATION	2145 Sheridan Road Evanston, IL 60208 Webpage: https://joshwang0322.github.io	(224) 307-0602 xingyuwang2017@u.northwestern.edu
RESEARCH INTERESTS	<ul style="list-style-type: none">• Rare Event Analysis, Large Deviations and Metastability, Heavy Tails• Machine Learning Theory• Stochastic Simulation	
EDUCATION	Northwestern University, McCormick School of Engineering <ul style="list-style-type: none">• Ph.D. in Industrial Engineering and Management Sciences <i>Advisor: Chang-Han Rhee</i>• M.S. in Analytics Peking University <ul style="list-style-type: none">• B.S. in Psychology and Applied Mathematics	Evanston, IL 2018 - Present 2016 - 2017 Beijing, China 2011 - 2016
WORKING PAPERS	Large Deviations and Metastability Analysis for Heavy-Tailed Dynamical Systems [pdf] Xingyu Wang, Chang-Han Rhee To be submitted to <i>Probability Theory and Related Fields</i> , arXiv:2307.03479 <i>Second Place, George Nicholson Student Paper Competition, 2023</i>	
	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 <i>Mathematics of Operations Research</i> , 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 <i>Nemhauser Prize for Best Student Paper, 2022</i>	
	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 for Undergraduates**, Department of Psychology, Peking University 2013

INVITED
PRESENTATIONS

How to Characterize Global Dynamics with Rare-Event Analysis: A Heavy-Tail Framework in Deep Learning

- SNAPP Seminar, Lightning Talk Session, Virtual [[slides](#)] [[video](#)] Dec, 2023

Large Deviation and Metastability Analysis for Heavy-Tailed Dynamical Systems

- Neurips 2023, Heavy Tails in ML Workshop (Poster), New Orleans, LA Dec, 2023
- 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 Dec, 2023

Eliminating Sharp Minima from SGD with Truncated Heavy-Tailed Noises [[slides](#)]

- INFORMS Annual Meeting, Phoenix, AZ 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

Assistant Professor of Operations
Kellogg School of Management
Northwestern University
anton.braverman@kellogg.northwestern.edu

Barry Nelson

Walter P. Murphy Professor Emeritus
Industrial Engineering and Management Sciences
Northwestern University
nelsonb@northwestern.edu

Sewoong Oh

Professor
Allen School of Computer Science & Engineering
University of Washington
sewoong@cs.washington.edu

Chang-Han Rhee

Assistant Professor
Industrial Engineering and Management Sciences
Northwestern University
chang-han.rhee@northwestern.edu