Xingyu Wang

CONTACT INFORMATION

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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 — Scheduled for 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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Kellogg School of Management
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Barry Nelson
Walter P. Murphy Professor Emeritus
Industrial Engineering and Management Sciences
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Sewoong Oh
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