

# Xingyu Wang

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CONTACT INFORMATION	Roetersstraat 11 1018 WB Amsterdam, NL Webpage: <a href="https://joshwang0322.github.io">https://joshwang0322.github.io</a>	+31 6 16566325 <a href="mailto:x.wang4@uva.nl">x.wang4@uva.nl</a>
RESEARCH INTERESTS	<ul style="list-style-type: none"><li>• Rare Event Analysis, Large Deviations, Metastability, Heavy Tails</li><li>• Machine Learning</li><li>• Stochastic Simulation</li><li>• Hawkes Processes</li></ul>	
EMPLOYMENT	<b>University of Amsterdam, Amsterdam School of Economics</b> <ul style="list-style-type: none"><li>• Postdoc Researcher, <a href="#">Quantitative Economics</a> <i>Hosts: <a href="#">Roger J.A. Laeven</a>, <a href="#">Bert Zwart</a></i></li></ul>	Amsterdam, NL 2024 - Present
EDUCATION	<b>Northwestern University, McCormick School of Engineering</b> <ul style="list-style-type: none"><li>• Ph.D. in <a href="#">Industrial Engineering and Management Sciences</a> <i>Advisor: <a href="#">Chang-Han Rhee</a></i></li><li>• M.S. in <a href="#">Analytics</a></li></ul> <b>Peking University</b> <ul style="list-style-type: none"><li>• B.S. in Psychology and Applied Mathematics</li></ul>	Evanston, IL, US 2018 - 2024 2016 - 2017 Beijing, China 2011 - 2016
SUBMITTED AND WORKING PAPERS	<b>Strongly Efficient Rare-Event Simulation for Regularly Varying Lévy Processes with Infinite Activities</b> [ <a href="#">preprint</a> ] <small>(<math>\alpha - \beta</math>: ALPHABETICAL AUTHORSHIP)</small> Xingyu Wang, Chang-Han Rhee Major Revision at <i>Mathematics of Operations Research</i> ; <a href="#">arXiv:2309.13820</a>  <b>Large Deviations and Metastability Analysis for Heavy-Tailed Dynamical Systems</b> [ <a href="#">preprint</a> ] Xingyu Wang, Chang-Han Rhee Major Revision at <i>Annals of Applied Probability</i> ; <a href="#">arXiv:2307.03479</a> <i>George Nicholson Student Paper Competition, Second Place</i> , 2023  <b>Tail Asymptotics of Cluster Sizes in Multivariate Heavy-Tailed Hawkes Processes</b> [ <a href="#">preprint</a> ] ( $\alpha - \beta$ ) Jose Blanchet, Roger J. A. Laeven, Xingyu Wang, Bert Zwart Submitted to <i>Annals of Applied Probability</i> ; <a href="#">arXiv:2503.01004</a>  <b>Sample Path Large Deviations for Multivariate Heavy-Tailed Hawkes Processes and Related Lévy Processes</b> [ <a href="#">preprint</a> ] ( $\alpha - \beta$ ) Jose Blanchet, Roger J. A. Laeven, Xingyu Wang, Bert Zwart Submitted to <i>Bernoulli</i> ; <a href="#">arXiv:2503.01004</a>	
CONFERENCE PAPERS	<b>Multi-agent Multi-armed Bandit with Fully Heavy-tailed Dynamics</b> [ <a href="#">preprint</a> ] Xingyu Wang, Mengfan Xu; To appear at <i>Winter Simulation Conference (WSC)</i> , 2025	

**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*

**Keyword-Based Topic Modeling and Keyword Selection** [\[pdf\]](#)

Xingyu Wang, Lida Zhang, Diego Klabjan  
Proceedings of IEEE Big Data, 2021

**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

- **Nemhauser Best Dissertation prize**, Northwestern University 2025
- **George Nicholson Student Paper Competition, Second Place**, 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

**Large Deviations for Multivariate Heavy-Tailed Hawkes Processes**

- INFORMS Annual Meeting, Atlanta, GA Scheduled for Oct, 2025
- Seminar at School of Mathematics and Statistics, Beijing Institute of Technology Apr, 2025
- Stochastic Seminars at Korteweg-de Vries Institute for Mathematics, Amsterdam, NL Feb, 2025

**Sharp Characterization and Control of Global Dynamics of SGDs with Heavy Tails**

- University of Copenhagen, Statistics Seminar Sep, 2025
- Monte Carlo Methods 2025, Chicago, IL July, 2025
- Applied Probability Society Conference 2025, Atlanta, GA July, 2025
- Bayes Comp 2025, Singapore Jun, 2025

- Data-Driven Queueing Challenges Conference, Eindhoven, NL Nov, 2024
- INI Satellite Programme on Heavy Tails in Machine Learning, London, UK Apr, 2024
- Cornell University, ORIE, Ithaca, NY Feb, 2024
- University of Pittsburgh, Industrial Engineering, Pittsburgh, PA Jan, 2024
- SNAPP Seminar, Lightning Talk Session, Virtual [[video](#)] Dec, 2023

#### **Importance Sampling Strategy for Heavy-Tailed Systems with Catastrophe Principle**

- Winter Simulation Conference (Advanced Tutorial), San Antonio, TX 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

#### **Eliminating Sharp Minima from SGD with Truncated Heavy-Tailed Noises**

- INFORMS Annual Meeting, Phoenix, AZ Oct, 2023
- Applied Probability Society Conference 2023, 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**

- Winter Simulation Conference, Virtual Dec, 2020
- INFORMS Annual Meeting, Virtual Nov, 2020

#### **TEACHING EXPERIENCE**

##### **Theses Supervisor**

- UvA, Master's Theses, Actuarial Science and Mathematical Finance 2025
- UvA, Bachelor's Theses, Actuarial Science 2025

##### **Instructor**

- IEMS Bootcamp (Probability) for PhD Students 2022 Fall, 2023 Fall

##### **Teaching Assistant**

- UvA Introduction to Data Science 2025
- UvA Non-Life Insurance: Statistical Techniques and Data Analytics 2024, 2025
- NU IEMS 317 Discrete Event Systems Simulation 2022 Winter; 2021 Winter
- NU IEMS 315 Stochastic Models 2021 Spring, Fall; 2020 Spring, Fall

##### **Course Grader**

- NU OPNS 450 Decision Models & Prescriptive Analytics 2022 Winter
- NU IEMS 435 Stochastic Simulation 2020 Winter

## SERVICES

- Referee: *Operations Research, Management Science, INFORMS Journal on Computing, SIAM Journal on Optimization, Communications Physics, ICML (2025), Winter Simulation Conference (2023, 2025)*
- Volunteer: *NU MORE-REACH panel (2024)*
- Webmaster: *Stochastic Networks, Applied Probability, and Performance (SNAPP) seminar (2023 - 2024)*
- Mentor: *1st-year mentorship program at NU INFORMS Student Chapter (2020, 2021)*

## INDUSTRIAL EXPERIENCE

**Graduate Student Analytics Consultant**, Chicago Park District

Chicago, IL  
Oct 2016 - May 2017

**Data Analyst Intern**, 17zuoye (aka Homework Together)

Beijing, China  
Aug - Dec 2015