

Linyun He

<https://he-linyun.github.io/>

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Education

- **Ph.D. in Operations Research** 2025 (expected)
Advisor: Dr. Eunhye Song
Georgia Institute of Technology Atlanta, GA
- **M.A. in Statistics** 2019
Columbia University New York, NY
- **B.S. in Mathematics and Applied Mathematics** 2017
Fudan University Shanghai, China

Research Interest

- Methodologies: robust simulation analysis, simulation optimization under model risk, non-parametric methods and high-dimensional statistics.
- Applications: smart manufacturing and digital twins.

Publications

- [7] **Linyun He**, Luke Rhodes-Leader, and Eunhye Song (2024). Digital twin validation with multi-epoch, multivariate output data. Accepted to be presented in the 2024 Winter Simulation Conference (WSC).
- [6] **Linyun He** and Eunhye Song (2024). Introductory tutorial: Simulation optimization under input uncertainty. Accepted to be presented in the 2024 Winter Simulation Conference (WSC).
- [5] **Linyun He**, Uday V Shanbhag, and Eunhye Song (2024). Stochastic approximation for multi-period simulation optimization with streaming input data. *ACM Transactions on Modeling and Computer Simulation*, 34(2):1–27.
- [4] **Linyun He**, Eunhye Song, and Ben Feng (2023). Efficient input uncertainty quantification for regenerative simulation. In *Proceedings of the 2023 Winter Simulation Conference (WSC)*, pages 385–396.
- [3] Zhunxuan Wang, **Linyun He**, Chunchuan Lyu, and Shay Cohen (2022). Nonparametric learning of two-layer relu residual units. *Transactions on Machine Learning Research*, pages 1–41.
- [2] **Linyun He** and Eunhye Song (2021). Nonparametric kullback-liebler divergence estimation using m-spacing. In *Proceedings of the 2021 Winter Simulation Conference (WSC)*, pages 1–12.
- [1] Zihao Wang, **Linyun He**, Zhenyun Qin, Roger Grimshaw, and Gui Mu (2019). High-order rogue waves and their dynamics of the fokas-lenells equation revisited: a variable separation technique. *Nonlinear Dynamics*, 98:2067–2077.

Preprints and Working Papers

- [2] **Linyun He**, Ben Feng, and Eunhye Song (2024). Efficient input uncertainty quantification for ratio estimator. <https://arxiv.org/abs/2410.04696>. Submitted.
- [1] **Linyun He**, Luke Rhodes-Leader, and Eunhye Song (2024). Nonparametric digital twin validation with multi-epoch, multivariate and dependent output data. In Preparation.

Awards and Honors

- [4] Finalist of the 2023 Winter Simulation Conference Best Theoretical Contributed Paper Award (5/209) 2023
- [3] Overseas Exchange Scholarship by Fudan University Education Development Foundation 2017
- [2] Third Prize of the Scholarship for Outstanding Students at Fudan University 2014, 2015, 2016
- [1] Major Scholarship of School of Mathematical Sciences at Fudan University 2014, 2015, 2016

Conference Presentations

- [8] 2024 Winter Simulation Conference Orlando, FL, 2024.12
 Title a: Digital Twin Validation with Multi-epoch, Multi-variate Output Data
 Title b: Introductory Tutorial: Simulation Optimization under Input Uncertainty
- [7] 2024 INFORMS Annual Meeting Seattle, WA, 2024.10
 Title: Digital Twin Validation with Multi-Epoch, Multi-Dimensional Data
- [6] 2023 Winter Simulation Conference San Antonio, TX, 2023.12
 Title: Efficient Input Uncertainty Quantification for Regenerative Simulation
- [5] 2023 INFORMS Annual Meeting Phoenix, AZ, 2023.10
 Title: Efficient Input Uncertainty Quantification for Regenerative Simulation
- [4] 2023 IISE Annual Conference New Orleans, LA, 2023.05
 Title: Efficient Input Uncertainty Quantification for Steady-state Simulation
- [3] 2022 IISE Annual Conference Seattle, WA, 2022.05
 Title: Statistical Analysis of Data-driven Simulation: Model Calibration and Optimization
- [2] 2021 Winter Simulation Conference Phoenix, AZ, 2021.12
 Title: Nonparametric Kullback-Liebler Divergence Estimation Using M-Spacing
- [1] 2020 INFORMS Annual Meeting online, 2020.11
 Title: Stochastic Approximation for Simulation Optimization with Streaming Input Data

Teaching Experience

- *Instructor* for ISYE 3044 Simulation Analysis and Design Georgia Tech, summer 2023
- *Teaching Assistant* for IE425 Stochastic Models in Operations Research Penn State Univeristy, spring 2021
- *Teaching Assistant* for IE453 Simulation Modeling For Decision Support Penn State Univeristy, fall 2020

Industrial Experience

- *Research Scientist Intern* at **Amazon.com Inc** Bellevue, Washington 2022.05-2022.08
- *Quantitative Analyst Intern* at **COFCO Futures Co., LTD** Shanghai, China 2017.01-2017.03
- *Quantitative Analyst Intern* at **Everbright Securities Co., LTD** Shanghai, China 2016.06-2016.08
- *Audit Intern* for **KPMG** Shanghai, China 2016.01-2016.02

Service

- Session Chair for 2024 INFORMS Annual Meeting
- Session Chair for 2023–2024 Winter Simulation Conferences

Software

- a1ocv: R package for computationally efficient approximation of the leave-one-out cross validation risk