

CURRICULUM VITAE

SHENGBO WANG

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Assistant Professor

Daniel J. Epstein Department of Industrial and Systems Engineering
University of Southern California

EDUCATION

Stanford University — Doctor of Philosophy 2020–2025

Management Science and Engineering

Ph.D. in Operations Research.

Co-advised by Prof. Peter Glynn and Jose Blanchet.

Cornell University — Bachelor of Science 2017–2020

Operations Research and Information Engineering, College of Engineering

Summa cum laude.

Major: Operations Research (honors program).

Minor: Applied Mathematics.

HONORS AND AWARDS

APS Best Student Paper Award.

Meritorious Reviewer Award.

Merrill Presidential Scholar (top 1%).

Byron W. Saunders Award.

INFORMS Applied Probability Society, 2025

Mathematics of Operations Research, 2025

Cornell University, 2020

Cornell ORIE, 2020

PUBLICATIONS

Journal Papers

- [1] Shengbo Wang, Nian Si, Jose Blanchet, and Zhengyuan Zhou. “Sample Complexity of Variance-Reduced Distributionally Robust Q-Learning”. In: *Journal of Machine Learning Research* 25.341 (2024), pp. 1–77.

Conference Papers

- [2] Shengbo Wang, Nian Si, Jose Blanchet, and Zhengyuan Zhou. “Statistical Learning of Distributionally Robust Stochastic Control in Continuous State Spaces”. In: *Proceedings of The 28th International Conference on Artificial Intelligence and Statistics*. Ed. by Yingzhen Li, Stephan Mandt, Shipra Agrawal, and Emtiyaz Khan. Vol. 258. Proceedings of Machine Learning Research. PMLR, 2025, pp. 2791–2799.

- [3] Shengbo Wang, Jose Blanchet, and Peter Glynn. “An Efficient High-dimensional Gradient Estimator for Stochastic Differential Equations”. In: *Advances in Neural Information Processing Systems 38: Annual Conference on Neural Information Processing Systems 2024, NeurIPS 2024, Vancouver, BC, Canada, December 10 - 15, 2024*. 2024.
- [4] Shengbo Wang, Jose Blanchet, and Peter Glynn. “Optimal Sample Complexity for Average Reward Markov Decision Processes”. In: *The Twelfth International Conference on Learning Representations, ICLR 2024, Vienna, Austria, May 7-11, 2024*. OpenReview.net, 2024.
- [5] Shengbo Wang, Nian Si, Jose Blanchet, and Zhengyuan Zhou. “A Finite Sample Complexity Bound for Distributionally Robust Q-learning”. In: *Proceedings of The 26th International Conference on Artificial Intelligence and Statistics*. Ed. by Francisco Ruiz, Jennifer Dy, and Jan-Willem van de Meent. Vol. 206. Proceedings of Machine Learning Research. PMLR, 2023, pp. 3370–3398.

Preprints

- [6] Zijun Chen, Shengbo Wang, and Nian Si. *Sample Complexity of Distributionally Robust Average-Reward Reinforcement Learning*. Accepted at NeurIPS 2025. 2025. arXiv: 2505.10007 [cs.LG].
- [7] Zhenghao Li, Shengbo Wang, and Nian Si. *Near-Optimal Sample Complexities of Divergence-based S-rectangular Distributionally Robust Reinforcement Learning*. 2025. arXiv: 2505.12202 [cs.LG].
- [8] Shengbo Wang and Nian Si. *Bellman Optimality of Average-Reward Robust Markov Decision Processes with a Constant Gain*. 2025. arXiv: 2509.14203 [math.OC].
- [9] Julien Grand-Clément, Nian Si, and Shengbo Wang. *Tractable Robust Markov Decision Processes*. 2024. arXiv: 2411.08435 [math.OC].
- [10] Shengbo Wang, Jose Blanchet, and Peter Glynn. *Optimal Sample Complexity of Reinforcement Learning for Mixing Discounted Markov Decision Processes*. 2023. arXiv: 2302.07477 [cs.LG].
- [11] Shengbo Wang, Nian Si, Jose Blanchet, and Zhengyuan Zhou. *On the Foundation of Distributionally Robust Reinforcement Learning*. 2023. arXiv: 2311.09018 [cs.LG].

PRESENTATIONS

Bellman Optimality of Average-Reward Robust Markov Decision Processes with a Constant Gain

Presented at INFORMS 2025, INI workshop Bridging Stochastic Control and Reinforcement Learning 2025.

Efficient Gradient Estimation for Overparameterized Stochastic Differential Equations Presentation for the 2025 APS Best Student Paper competition at INFORMS 2025.

Statistical Learning of Distributionally Robust Stochastic Control in Continuous State Spaces
Presented at INFORMS 2024.

On the Foundation of Distributionally Robust Reinforcement Learning
Presented at CISS 2024, Berkeley and Stanford Seminars.

Reinforcement Learning for Mixing Systems
Presented at INFORMS 2023.

Distributionally Robust Q-learning: Formulations, Algorithms, and Sample Complexities
Presented at SIAM OP 2023.

A Finite Sample Complexity Bound for the Distributionally Robust Q-learning
Presented at INFORMS 2022. Poster presentation at AISTATS 2023.

Distributionally Robust Q-learning: Algorithm Designs and Sample Complexities
Presented at Stanford OR Seminar.

TEACHING

Instructor at USC
ISE 220: Foundations of Probability Modeling

Course Assistant at Stanford
MS&E 220: Probabilistic Analysis
MS&E 221: Stochastic Modeling
MS&E 321: Stochastic Systems
MS&E 324 / CME 308 / MATH 228: Stochastic Methods in Engineering

Course Assistant and Tutoring at Cornell
ORIE 3510/5510: Introduction to Engineering Stochastic Processes I (Course Assistant)
SYSEN 5200: Systems Analysis Behavior and Optimization (Tutor)

PROFESSIONAL SERVICES

Journal reviewer for *Annals of Statistics*, *Journal of Machine Learning Research*, *Mathematics of Operations Research*, *Management Science*, and *Operations Research*.

Conference reviewer for Artificial Intelligence and Statistics (AISTATS), International Conference on Learning Representations (ICLR), and Neural Information Processing Systems (NeurIPS).