

YAQI DUAN

<https://duanyq22.github.io/> | yaqi.duan@stern.nyu.edu
KMC 8-54, 44 West 4th Street, New York, NY 10012

ACADEMIC POSITIONS

New York University, Stern School of Business	New York, NY
Assistant Professor in the Department of Technology, Operations, and Statistics	2023 –
Massachusetts Institute of Technology	Cambridge, MA
Postdoc, hosted by Professor Martin J. Wainwright	2022 – 2023

EDUCATION

Princeton University	Princeton, NJ
Ph.D. in Operations Research and Financial Engineering	2017 – 2022
Peking University	Beijing, China
B.S. in Mathematics	2013 – 2017

SELECTED AWARDS AND HONORS

• IMS Lawrence D. Brown Ph.D. Student Award, <i>Institute of Mathematical Statistics</i>	2023
• EECS Rising Star, <i>Massachusetts Institute of Technology</i>	2021
• Gordon Y. S. Wu Fellowship in Engineering, <i>Princeton University</i>	2017 – 2021

PUBLICATIONS AND PREPRINTS

Journal publications and preprints

- Taming “data-hungry” reinforcement learning? Stability in continuous state-action spaces.
Duan, Y., Wainwright, M. J.
arXiv:2401.05233.
- Policy evaluation from a single path: Multi-step methods, mixing and mis-specification.
Duan, Y., Wainwright, M. J.
arXiv:2211.03899.
Preliminary version appeared in *Annual Learning for Dynamics & Control Conference (L4DC)* 2023.
- Optimal policy evaluation using kernel-based temporal difference methods.
Duan, Y., Wang, M., Wainwright, M. J.
Major revision at *Annals of Statistics (AoS)*, 2023+.
2023 IMS Lawrence D. Brown Ph.D. Student Award
- Adaptive and robust multi-task learning.
Duan, Y., Wang, K.
Annals of Statistics (AoS), 51(5): 2015-2039, 2023.
- Learning good state and action representations for Markov decision process via tensor decomposition.
Ni, C., **Duan, Y.**, Dahleh, M., Wang, M., Zhang, A.
Journal of Machine Learning Research (JMLR), 24(115):1–53, 2023.
Preliminary version appeared in *IEEE International Symposium on Information Theory (ISIT)* 2021.

- Adaptive low-nonnegative-rank approximation for state aggregation of Markov chains.
Duan, Y., Wang, M., Wen, Z., Yuan, Y.
SIAM Journal on Matrix Analysis and Applications (SIMAX), 41(1):pp. 244-278, 2020.

Conference publications

- A finite-sample analysis of multi-step temporal difference estimates.
Duan, Y., Wainwright, M. J.
Annual Learning for Dynamics & Control Conference (L4DC) 2023.
- Near-optimal offline reinforcement learning with linear representation: leveraging variance information with pessimism.
Yin, M., **Duan, Y.**, Wang, M., Wang, Y.
International Conference on Learning Representations (ICLR) 2022.
- Risk bounds and Rademacher complexity in batch reinforcement learning.
Duan, Y., Jin, C., Li, Z.
International Conference on Machine Learning (ICML) 2021.
- Bootstrapping statistical inference for off-policy evaluation.
Hao, B., Ji, X., **Duan, Y.**, Lu, H., Szepesvári, C., Wang, M.
International Conference on Machine Learning (ICML) 2021.
- Sparse feature selection makes reinforcement learning more sample efficient.
Hao, B., **Duan, Y.**, Lattimore, T., Szepesvári, C., Wang, M.
International Conference on Machine Learning (ICML) 2021.
- Learning good state and action representations via tractable tensor decomposition.
Ni, C., Zhang, A., **Duan, Y.**, Wang, M.
IEEE International Symposium on Information Theory (ISIT) 2021.
- Minimax-optimal off-policy evaluation with linear function approximation.
Duan, Y., Wang, M.
International Conference on Machine Learning (ICML) 2020.
- State aggregation learning from Markov transition data.
Duan, Y., Ke, Z., Wang, M.
Conference on Neural Information Processing Systems (NeurIPS) 2019.
- Learning low-dimensional state embeddings and metastable clusters from time series data.
Sun, Y., **Duan, Y.**, Gong, H., Wang, M.
Conference on Neural Information Processing Systems (NeurIPS) 2019.

PRESENTATIONS

• The 2023 INFORMS Annual Meeting	Oct. 2023
• The 2023 Joint Statistical Meetings	Aug. 2023
• The 2022 INFORMS Annual Meeting	Oct. 2022
• The 2021 INFORMS Annual Meeting	Oct. 2021

- Cornell ORIE Young Researcher Workshop 2021 Oct. 2021
- The 2021 CORS Annual Conference, Canadian Operational Research Society (virtual) June 2021
- The 2020 INFORMS Annual Meeting (virtual) Nov. 2020
- School of Mathematical Sciences, Peking University (virtual) Oct. 2020
- Beijing International Center for Mathematical Research (BICMR) Nov. 2019
- Cornell ORIE Young Researcher Workshop 2019 Oct. 2019
- Applied Math Days at Rensselaer Polytechnic Institute Apr. 2019

PROFESSIONAL SERVICES

Journal review: Annals of Statistics (AoS), Journal of the Royal Statistical Society: Series B (JRSSB), Journal of the American Statistical Association (JASA), Journal of Machine Learning Research (JMLR);
Conference review: ICML 2022, 2021 & 2020, NeurIPS 2021 & 2020, ICLR 2021, AISTATS 2021, IEEE ISIT 2021 & 2020, CISS 2020

TEACHING EXPERIENCES

New York University

STAT-UB 103 - *Statistics for Business Control, Regression & Forecasting Models*: Spring 2024
 STAT-UB 003 - *Regression and Forecasting Models*: Spring 2024

Princeton University

Graduate teaching assistants for:

ORF 245 - *Fundamentals of Statistics*: Spring 2021, Fall 2019, Spring 2019
 ORF 309 - *Probability and Stochastic Systems*: Fall 2020
 ORF 473 - *Financial Technology and Data-Driven Innovation*: Spring 2020
 ORF 363 - *Computing and Optimization for the Physical and Social Sciences*: Fall 2018