

YAQI DUAN

✉ yaqid@princeton.edu

Sherrerd Hall, Charlton Street, Princeton, NJ 08544

EDUCATION

Princeton University

Princeton, NJ

Ph.D. candidate in Operations Research and Financial Engineering Sept. 2017 – May 2022 (Expected)

Peking University

Beijing, China

B.S. in Mathematics

Sept. 2013 – July 2017

RESEARCH INTERESTS

Reinforcement learning, high-dimensional statistics; applications to decision-making problems in healthcare, transportation and finance.

PUBLICATIONS AND PREPRINTS

Journal Publications and Preprints

- Optimal policy evaluation using kernel-based temporal difference methods.
Duan, Y., Wang, M., Wainwright, M. J.
arXiv:2109.12002.
- 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, 41(1):pp. 244-278, 2020.
- Adaptive and robust multi-task learning.
Wang, K., Dan, C., **Duan, Y.**
Working paper.

Conference Publications

- Risk bounds and Rademacher complexity in batch reinforcement learning.
Duan, Y., Jin, C., Li, Z.
ICML 2021.
- Bootstrapping statistical inference for off-policy evaluation.
Hao, B., Ji, X., **Duan, Y.**, Lu, H., Szepesvári, C., Wang, M.
ICML 2021.
- Sparse feature selection makes reinforcement learning more sample efficient.
Hao, B., **Duan, Y.**, Lattimore, T., Szepesvári, C., Wang, M.
ICML 2021.
- Learning good state and action representations via tractable tensor decomposition.
Ni, C., Zhang, A., **Duan, Y.**, Wang, M.
IEEE ISIT 2021.

- Minimax-optimal off-policy evaluation with linear function approximation.
Duan, Y., Wang, M.
ICML 2020.
- State aggregation learning from Markov transition data.
Duan, Y., Ke, Z., Wang, M.
NeurIPS 2019.
- Learning low-dimensional state embeddings and metastable clusters from time series data.
Sun, Y., **Duan, Y.**, Gong, H., Wang, M.
NeurIPS 2019.

PRESENTATIONS

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| • The 2021 INFORMS Annual Meeting (upcoming) | Nov. 2021 |
| • Cornell ORIE Young Researcher Workshop 2021 (upcoming) | Oct. 2021 |
| • The 2021 CORS Annual Conference, Canadian Operational Research Society (virtual) | June 2021 |
| • Institute for Artificial Intelligence, Peking University (virtual) | Dec. 2020 |
| • School of Mathematical Sciences, Peking University (virtual) | Oct. 2020 |
| • The 2020 INFORMS Annual Meeting (virtual) | Nov. 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

INFORMS session co-chair: Statistical Reinforcement Learning from Batch Data;
Reinforcement Learning and Bandit Algorithms

Reviewer & programming committee member for:

NeurIPS 2021 & 2020, ICML 2021 & 2020, AISTATS 2021, ICLR 2021, IEEE ISIT 2021 & 2020, CISS 2020, ICML 2021 workshop on Reinforcement Learning Theory, ICML 2020 workshop on Theoretical Foundations of Reinforcement Learning

TEACHING EXPERIENCES

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

SELECTED AWARDS AND HONORS

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| • Gordon Y. S. Wu Fellowship in Engineering, <i>Princeton University</i> | 2017-2021 |
| • NeurIPS 2019 Travel Award | 2019 |