YAQI DUAN

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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 and robust multi-task learning.
  Duan, Y., Wang, K.
  arXiv:2022.05250.
- 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.

Conference publications and preprints

- Near-optimal offline reinforcement learning with linear representation: leveraging variance information with pessimism.
  Yin, M., **Duan, Y.**, Wang, M., Wang, Y.
  ICLR 2022.
- 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

- 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
- 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:

Annals of Statistics, 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

- EECS Rising Star, *MIT* — 2021
- Gordon Y. S. Wu Fellowship in Engineering, *Princeton University* — 2017-2021
- NeurIPS 2019 Travel Award — 2019