**EDUCATION**

**Princeton University**
Ph.D. candidate in Operations Research and Financial Engineering
Princeton, NJ
Sept. 2017 – May 2022 (Expected)

**Peking University**
B.S. in Mathematics
Beijing, China
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 and preprints**

- 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.*

• Near-optimal offline reinforcement learning with linear representation: leveraging variance information with pessimism.
  Yin, M., **Duan, Y.**, Wang, M., Wang, Y.
  *Submitted 2021.*

**PRESENTATIONS**

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

**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**

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