YIHAN DU

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RESEARCH INTERESTS

Machine learning, with emphases on online learning (in particular, multi-armed bandit), reinforcement learning and representation learning.

EDUCATION & EMPLOYMENT

University of Illinois at Urbana-Champaign *August 2023 - Present*
Department of Electrical and Computer Engineering & Coordinated Science Lab
Postdoctoral Researcher Advisor: Prof. R. Srikant (IEEE Fellow)

Tsinghua University *September 2018 - June 2023*
Institute for Interdisciplinary Information Sciences (headed by Prof. Andrew Chi-Chih Yao)
Ph.D. in Computer Science Advisor: Prof. Longbo Huang
Thesis: Risk-aware and Efficient Online Decision Making (Tsinghua Outstanding Doctoral Thesis)

Xiamen University *September 2014 - June 2018*
B.E. in Computer Science Rank: 3/93

VISIT & INTERNSHIP

Cornell University *September 2022 - December 2022*
Visiting Ph.D. student (in-person) Research topic: reinforcement learning
Supervisor: Prof. Wen Sun

Microsoft Research (MSR) Asia *January 2020 - May 2020*
Research intern Research topic: online learning
Supervisor: Dr. Wei Chen (IEEE Fellow, Director of MSR Asia Theory Center)

PUBLICATIONS

Yihan Du, Longbo Huang, Wen Sun, "Multi-task Representation Learning for Pure Exploration in Linear Bandits," International Conference on Machine Learning (ICML), 2023.

Yihan Du, Siwei Wang, Longbo Huang, "Provably Efficient Risk-Sensitive Reinforcement Learning: Iterated CVaR and Worst Path," International Conference on Learning Representations (ICLR), 2023.

Yihan Du, Wei Chen, Yuko Kuroki, Longbo Huang, "Collaborative Pure Exploration in Kernel Bandit," International Conference on Learning Representations (ICLR), 2023.

Yihan Du, Wei Chen, "Branching Reinforcement Learning," International Conference on Machine Learning (ICML), 2022.

Yihan Du, Siwei Wang, Zhixuan Fang, Longbo Huang, "Continuous Mean-Covariance Bandits," Proceedings of the Conference on Neural Information Processing Systems (NeurIPS), 2021.

Yihan Du, Yuko Kuroki, Wei Chen, "Combinatorial Pure Exploration with Bottleneck Reward Function," Proceedings of the Conference on Neural Information Processing Systems (NeurIPS), 2021.

Yihan Du, Siwei Wang, Longbo Huang, "A One-Size-Fits-All Solution to Conservative Bandit Problems," Proceedings of the AAAI Conference on Artificial Intelligence (AAAI), 2021.

Yihan Du*, Yuko Kuroki*, Wei Chen, "Combinatorial Pure Exploration with Full-Bandit or Partial Linear Feedback," Proceedings of the AAAI Conference on Artificial Intelligence (AAAI), 2021 (*equal contribution).

(*α-β ordering) Wei Chen, **Yihan Du**, Longbo Huang, Haoyu Zhao, "Combinatorial Pure Exploration for Dueling Bandit," International Conference on Machine Learning (ICML), 2020.

Yihan Du, Siwei Wang, Longbo Huang, "Dueling Bandits: From Two-dueling to Multi-dueling," Proceedings of the International Conference on Autonomous Agents and Multiagent Systems (AAMAS), 2020.

Yihan Du, Yan Yan, Si Chen, Yang Hua, "Object-adaptive LSTM Network for Real-time Visual Tracking with Adversarial Data Augmentation," Neurocomputing, 2019.

Yihan Du, Yan Yan, Si Chen, Yang Hua, Hanzi Wang, "Object-adaptive LSTM Network for Visual Tracking," International Conference on Pattern Recognition (ICPR), 2018.

INVITED TALKS

"Risk-aware Online Decision Making," TrustML Young Scientist Seminar, RIKEN AIP   *May 2023*

"Risk-aware Online Decision Making," MLOPT Idea Seminar, UW-Madison   *April 2023*

"Optimal Experimental Design in Linear Bandit," Bandit Algorithm Seminar, Yau Mathematical Sciences Center (YMSC), Tsinghua University   *November 2022*

"Combinatorial Pure Exploration for Dueling Bandit," China Computer Federation (CCF) Doctoral Forum in Theoretical Computer Science (only 18 Ph.D. students in theoretical computer science are invited nationwide)   *June 2021*

ACADEMIC SERVICE & ACTIVITIES

Program Committee Member/Reviewer
Conference: ICML 2021-2023, NeurIPS 2021-2023, ICLR 2022-2023
Journal: Transactions on Machine Learning Research (TMLR), Transactions on Networking (ToN)

Teaching Assistant
Stochastic Network Optimization, graduate course (IIIS, Tsinghua University)   *Spring 2021*
Introduction to Computer Science, undergraduate course (Yao Class, Tsinghua University)   *Fall 2019*

Social Activity
President of Graduate Union at IIIS, Tsinghua University   *June 2020 - June 2021*

SELECTED AWARDS

Beijing Outstanding Graduate, by Beijing Municipal Education Commission (the only recipient among CS graduates at IIIS, Tsinghua University in 2023)   *June 2023*

Tsinghua Outstanding Doctoral Thesis, by Tsinghua University (the only recipient among CS graduates at IIIS, Tsinghua University in 2023)   *June 2023*

China National Scholarship for Ph.D. Students, by Ministry of Education of China (the only recipient among CS students at IIIS, Tsinghua University in 2022)   *October 2022*

Toyota Scholarship, by Toyota and Tsinghua University   *October 2021*

Huawei Academic Excellence Scholarship, by Huawei and Tsinghua University   *October 2020*

Wuqing Talent Scholarship, by Wuqing District Government and Tsinghua University   *October 2020*

Outstanding Graduate, by Xiamen University   *June 2018*