

# YIHAN DU

yihandu@illinois.edu  $\diamond$  <https://yihandu.github.io>

## RESEARCH INTERESTS

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

## EMPLOYMENT

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**University of Illinois at Urbana-Champaign**

Department of Electrical and Computer Engineering

Postdoctoral Researcher

*August 2023 - Present*

Advisor: Prof. R. Srikant (IEEE Fellow)

## EDUCATION

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**Tsinghua University**

Institute for Interdisciplinary Information Sciences (headed by Prof. Andrew Chi-Chih Yao)

Ph.D. in Computer Science

Dissertation: Risk-aware and Efficient Online Decision Making (**Tsinghua Outstanding Doctoral Dissertation Award**)

*September 2018 - June 2023*

Advisor: Prof. Longbo Huang

**Xiamen University**

B.E. in Computer Science

*September 2014 - June 2018*

Rank: 3/93

## VISIT & INTERNSHIP

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**Cornell University**

Visiting Ph.D. student (in-person)

Supervisor: Prof. Wen Sun

*September 2022 - December 2022*

Research topic: reinforcement learning

**Microsoft Research Asia**

Research intern

Supervisor: Dr. Wei Chen (IEEE Fellow, Director of MSR Asia Theory Center)

*January 2020 - May 2020*

Research topic: online learning

## PUBLICATIONS

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Nuoya Xiong<sup>#</sup>, **Yihan Du**, Longbo Huang, “Provably Safe Reinforcement Learning with Step-wise Violation Constraints,” Proceedings of the Conference on Neural Information Processing Systems (NeurIPS), 2023 (<sup>#</sup>mentored undergraduate with my Ph.D. advisor).

**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).

(\* $\alpha$ - $\beta$  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

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“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

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### Program Committee Member/Reviewer

Conference: ICML 2021-2023, NeurIPS 2021-2023, ICLR 2022-2024

Journal: Transactions on Pattern Analysis and Machine Intelligence (TPAMI), Journal of Machine Learning Research (JMLR), Transactions on Networking (ToN), Transactions on Machine Learning Research (TMLR), Transactions on Network Science and Engineering (TNSE)

### 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

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

**Beijing Outstanding Graduate**, by Beijing Municipal Education Commission (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*