

# Haoran Xu

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Google Scholar: <https://scholar.google.com/citations?user=iX8AJI0AAAAJ&hl=en>

## Education

**PhD in Electrical and Computer Engineering** (Sep. 2023 – Now)  
The University of Texas at Austin, USA  
Advised by Prof. Amy Zhang

**Master in Computer Science and Technology** (Sep. 2018 – June. 2021)  
Xidian University, China  
Advised by Prof. Xianyuan Zhan and Prof. Yu Zheng; GPA: 3.8/4.0

**Bachelor in Computer Science and Technology** (Sep. 2014 – June. 2018)  
Xidian University, China  
Studied in Excellent Engineer Class; GPA: 3.7/4.0 (3/27)

## Research Experience

**Tsinghua University**, Beijing. *Researcher* Mar. 2023 – Aug. 2023  
Worked on offline reinforcement learning and imitation learning with Prof. Xianyuan Zhan.

**JD.com**, Beijing. *Researcher* May 2019 – Mar. 2023  
Working on algorithms and applications of data-driven decision making with several collaborators.

**Microsoft Research Lab Asia (MSRA)**, Beijing. *Research Intern* Oct. 2017 – Mar. 2019  
Worked on AI-driven industrial system optimization with Prof. Xianyuan Zhan and Prof. Yu Zheng.

**Xidian University**. *Undergraduate Researcher* May - July, 2016  
Worked on computer vision and its applications on license plate recognition.

## Publications and Pre-Prints

### Publications

(\* indicates Equal Contribution)

1. **Offline RL with No OOD Actions: Offline RL with Implicit Value Regularization** [Paper]  
Haoran Xu, Li Jiang, Jianxiong Li, Zhuoran Yang, Zhaoran Wang, Victor Wai Kin Chan, Xianyuan Zhan  
International Conference on Learning Representations (ICLR), 2023 (*Oral*). (Acceptance rate: 5.0%)
2. **A Policy-Guided Imitation Approach for Offline Reinforcement Learning** [Paper]  
Haoran Xu\*, Li Jiang\*, Jianxiong Li, Xianyuan Zhan  
Neural Information Processing Systems (NeurIPS), 2022 (*Oral*). (Acceptance rate: 1.9%)
3. **Discriminator-Weighted Offline Imitation Learning from Suboptimal Demonstrations** [Paper]  
Haoran Xu, Xianyuan Zhan, Honglei Yin, Huiling Qin  
International Conference on Machine Learning (ICML), 2022. (Acceptance Rate: 21.9%)
4. **Constraints Penalized Q-Learning for Safe Offline Reinforcement Learning** [Paper]  
Haoran Xu, Xianyuan Zhan, Xiangyu Zhu  
Association for the Advancement of Artificial Intelligence (AAAI), 2022. (Acceptance Rate: 15.0%)  
Oral Presentation at RL for Real Life Workshop at ICML 2021 (12/90 papers).
5. **DeepThermal: Combustion Optimization for Thermal Power Generating Units Using Offline RL**  
Xianyuan Zhan\*, Haoran Xu\*, Yue Zhang, Yusen Huo, Xiangyu Zhu, Honglei Yin, Yu Zheng [Paper]  
Association for the Advancement of Artificial Intelligence (AAAI), 2022. (Acceptance Rate: 15.0%)  
Oral Presentation at RL for Real Life Workshop at ICML 2021 (12/90 papers).
6. **Discriminator-Guided Model-Based Offline Imitation Learning** [Paper]

Wenjia Zhang, **Haoran Xu**, Haoyi Niu, Peng Cheng, Ming Li, Heming Zhang, Guyue Zhou, Xianyuan Zhan

Conference on Robot Learning (CoRL), 2022. (*Acceptance Rate: 39.0%*)

7. **When Data Geometry Meets Deep Function: Generalizing Offline Reinforcement Learning** [Paper]

Jianxiong Li, Xianyuan Zhan, **Haoran Xu**, Xiangyu Zhu, Jingjing Liu, Ya-Qin Zhang  
International Conference on Learning Representations (ICLR), 2023. (*Acceptance Rate: 31.8%*)

8. **Mind the Gap: Offline Policy Optimizaiton for Imperfect Rewards** [Paper]

Jianxiong Li, Xiao Hu, **Haoran Xu**, Jingjing Liu, Xianyuan Zhan, Qing-Shan Jia, Ya-Qin Zhang  
International Conference on Learning Representations (ICLR), 2023. (*Acceptance Rate: 31.8%*)

9. **Model-Based Offline Planning with Trajectory Pruning** [Paper]

Xianyuan Zhan, Xiangyu Zhu, **Haoran Xu**  
International Joint Conference on Artificial Intelligence (IJCAI), 2022. (*Acceptance Rate: 15.0%*)

## Pre-Prints

10. **SaFormer: A Conditional Sequence Modeling Approach to Offline Safe RL** [Paper] (2023)

Qin Zhang\*, Linrui Zhang\*, **Haoran Xu**, Li Shen, Bowen Wang, Xueqian Wang, Bo Yuan, Yongzhe Chang, Dacheng Tao

Scene Representations for Autonomous Driving Workshop, ICLR 2023

11. **Offline Reinforcement Learning with Soft Behavioral Regularization** [Paper] (2021)

**Haoran Xu**, Xianyuan Zhan, Jianxiong Li, Honglei Yin

Offline Reinforcement Learning Workshop, NeurIPS 2021

## Awards and Fellowships

- Top Reviewer Award at NeurIPS 2022 [details] 2022
- 2019 Synced Machine Intelligence Awards: 30 Best AI Use Cases of the Year [details] 2020
- Xidian University Outstanding Graduate 2018
- Meritorious Winner in MCM/ICM 2017
- National Scholarship 2016, 2017
- Second Prize in CUMCM 2016
- National Scholarship for Encouragement 2015

## Invited Talks and Presentations

- **Offline RL with Implicit Value Regularization**, *AI TIME* Mar. 2023
- **Safe, Reliable and Generalizable Offline RL**, *CMU Safe AI Lab*, Host: Prof. Ding Zhao Feb. 2023
- **A Policy-Guided Imitation Approach for Offline RL**, *NeurIPS China Meetup* Nov. 2022
- **Frontiers of Offline Reinforcement Learning**, *Tsinghua University*, Host: Prof. Xianyuan Zhan Oct. 2021
- **Constraints Penalized Q-Learning for Safe Offline RL**, *ICML 2021 RL4RealLife Workshop* July 2021
- **An Introduction to Offline Reinforcement Learning**, *JD Digits*, Host: Dr. Junbo Zhang May 2020
- **Using RL to Solve Combustion Optimization for TPGUs**, *Microsoft Research Lab Asia* Feb. 2018

## Professional Service

### Conference and Journal Reviewing

- Reviewer for NeurIPS (2022-2023) [top reviewer award at NeurIPS 2022], ICML (2022-2023), AAAI (2023), IEEE Transactions on Knowledge and Data Engineering (TKDE) (2020-2021).
- TPC member for Workshop on RL for Real Life at NeurIPS 2022

## Teaching Experience

- **Teaching Assistant** for Data Warehouse and Data Mining, Xidian University Spring 2017
- **Teaching Assistant** for Computational Intelligence, Xidian University Fall 2016
- **Teaching Assistant** for Linear Algebra, Xidian University Spring 2015