KAIXIANG LIN

Github & Google Scholar & Homepage
Email: linkaixi@msu.edu

EDUCATION

Michigan State University *Aug. 2015 - present*
Ph.D. student in Computer Science & Engineering
Advisor: Dr. Jiayu Zhou

University of Science and Technology of China *Sept. 2010 - July 2014*
B.E. in Electronic Information Engineering

RESEARCH INTERESTS

Reinforcement Learning, Data Mining, Machine Learning
My research focuses on developing sample-efficient reinforcement learning algorithms for large-scale real-world applications, including transportation, multi-channel marketing, and ads ranking.

PROFESSIONAL EXPERIENCE

Research Intern at **Google Display Ads, Mountain View, CA** *May 28th - Aug. 30th 2019*

- Applied learning to rank algorithms (including our ranking policy gradient) to display format selection problems. Seven models checked into production for three ranking tasks.
- Increased revenue by 1.14% based on five days online A/B testing.

Research Intern at **Didi AI Labs, Beijing** *May - Aug. 2017, 2018*

- Designed and implemented constrained multi-armed bandit algorithm for a multi-channel marketing project. Return on Investment (ROI) increased over 23% with the same scale of investment. This algorithm was running online at the end of my internship.
- Proposed and implemented a novel multi-agent deep reinforcement learning algorithm for large scale fleet management that is able to coordinate large number of agents and increase the GMV over 15% based on a simulator that is calibrated with real data.

SELECTED PUBLICATIONS

Kaixiang Lin and Jiayu Zhou. "Ranking Policy Gradient", International Conference on Learning Representations (ICLR), 2020.

Kaixiang Lin, Renyu Zhao, Zhe Xu, Jiayu Zhou. "Efficient Large-Scale Fleet Management via Multi-Agent Deep Reinforcement Learning", the 24th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD), 2018. [**Research track Oral**][**Acceptance rate: 10.9%**]

- A journal resolving exponential action space for large-scale collaborative MARL is in submission.

Kaixiang Lin, Shu Wang, Jiayu Zhou. "Collaborative Deep Reinforcement Learning", Preprint, 2017.

Kaixiang Lin and Jiayu Zhou. "Interactive Multi-Task Relationship Learning", IEEE International Conference on Data Mining (ICDM), 2016.[**Oral**][**Acceptance rate: 8.5%**]

Kaixiang Lin, Jianpeng Xu, Inci M. Baytas, Shuiwang Ji and Jiayu Zhou. "Multi-Task Feature Interaction Learning", the 22nd ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD), 2016. [**Research track**][**Acceptance rate: 18.1%**]

HONORS AND AWARDS

Conference Travel Grant: SDM2016, KDD2016, SDM2017, SDM2018, KDD2018
Best Poster Award, Doctoral Forum, SDM2017

INVITED TALKS

- LinkedIn Tech Talk: "Ranking Policy Gradient: Towards Sample-efficient Reinforcement Learning", Aug 9th, 2019.

SERVICES

Program Committee (PC) member:

- ICML 2020, IJCAI 2020.
- IEEE BigData 2018, 2019.

Conference external reviewer:

- AAAI 2020, ICLR 2020.
- IJCAI 2019.
- ICDM 2017, 2018.

Journal Reviewer:

- IEEE Transactions on Neural Networks and Learning Systems
- Transactions on Knowledge and Data Engineering (TKDE)
- The Transportation Research Board (TRB) 98th Annual Meeting
- International Journal of Machine Learning and Cybernetics (JMLC)
- Neurocomputing
- Pattern Recognition
- Data Mining and Knowledge Discovery
- Transactions on Knowledge Discovery from Data (TKDD)