Yu-Jie Zhang

The University of Tokyo

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EDUCATION

The University of Tokyo, Japan
Ph.D. candidate, Complexity Science and Engineering

October 2021 - Present
Supervisor: Prof. Masashi Sugiyama

Nanjing University, China
M.Sc., Computer Science and Technology

June 16, 2021
Supervisor: Prof. Zhi-Hua Zhou

Tongji University, China
B.Sc., Electronic Science and Technology

July 01, 2018
GPA: 4.91/5.00, ranking 1/32

RESEARCH INTEREST

My research focuses on developing machine learning techniques to learn with the non-stationary and open world, particularly from the following perspectives:

- **Non-stationary Online Learning and Decision-making**: Can we develop methods that can promptly adapt to non-stationary data, which appear sequentially and their distribution may shift over time?

  – *Key words: online optimization, bandits, reinforcement learning, dynamic regret bound.*

- **Learning with Imperfect Data**: Can we develop reliable methods that can learn from the imperfect data but still perform well on the test environments that contain unknown factors?

  – *Key words: distribution shift, weakly supervised learning, unknown classes, excess risk bound.*

PUBLICATIONS

Preprints

1. Long-Fei Li, **Yu-Jie Zhang**, Peng Zhao, and Zhi-Hua Zhou. Provably Efficient Reinforcement Learning with Multinomial Logit Function Approximation.

Conference Publications

1. Yu-Yang Qian, Peng Zhao, **Yu-Jie Zhang**, Masashi Sugiyama, Zhi-Hua Zhou. In: Proceedings of the 41st International Conference on Machine Learning (**ICML**), 2024.

2. Wei Wang, Takashi Ishida, **Yu-Jie Zhang**, Gang Niu, and Masashi Sugiyama. Learning with Complementary Labels Revisited: A Consistent Approach via Negative-Unlabeled Learning. In: Proceedings of the 41st International Conference on Machine Learning (**ICML**), 2024.

3. **Yu-Jie Zhang** and Masashi Sugiyama. Online (Multinomial) Logistic Bandit: Improved Regret and Constant Computation Cost. In Advances in Neural Information Processing Systems 36 (**NeurIPS**), 2023. [**Spotlight**]

4. **Yu-Jie Zhang**, Zhen-Yu Zhang, Peng Zhao, and Masashi Sugiyama. Adapting to Continuous Covariate Shift via Online Density Ratio Estimation. In Advances in Neural Information Processing Systems 36 (**NeurIPS**), 2023.

5. Xin-Qqiang Cai, **Yu-Jie Zhang**, Chao-Kai Chiang and Masashi Sugiyama. Imitation Learning from Vague Feedback. In Advances in Neural Information Processing Systems 36 (**NeurIPS**), 2023.

6. Yong Bai*, **Yu-Jie Zhang***, Peng Zhao, Masashi Sugiyama, and Zhi-Hua Zhou. Adapting to Online Label Shift with Provable Guarantees. In Advances in Neural Information Processing Systems 35 (**NeurIPS**), 2022. (* equal contribution)

7. Zhen-Yu Zhang, Yu-Yang Qian, **Yu-Jie Zhang**, Yuan Jiang, Zhi-Hua Zhou. Adaptive Learning for Weakly Labeled Streams. In Proceedings of the 28th ACM SIGKDD Conference on Knowledge Discovery and Data Mining (**KDD**), 2022.

8. **Yu-Jie Zhang**, Yu-Hu Yan, Peng Zhao and Zhi-Hua Zhou. Towards Enabling Learnware to Handle Unseen Jobs. In Proceedings of the 35th AAAI Conference on Artificial Intelligence (**AAAI**), 2021.

9. Peng Zhao, **Yu-Jie Zhang** and Zhi-Hua Zhou. Exploratory Machine Learning with Unknown Unknowns. In Proceedings of the 35th AAAI Conference on Artificial Intelligence (**AAAI**), 2021.

10. **Yu-Jie Zhang**, Peng Zhao, Lanjihong Ma and Zhi-Hua Zhou. An Unbiased Risk Estimator for Learning with Augmented Classes. In Advances in Neural Information Processing Systems 33 (**NeurIPS**), 2020.

11. Peng Zhao, **Yu-Jie Zhang**, Lijun Zhang and Zhi-Hua Zhou. Dynamic Regret of Convex and Smooth Functions. In Advances in Neural Information Processing Systems 33 (**NeurIPS**), 2020.

12. **Yu-Jie Zhang**, Peng Zhao, and Zhi-Hua Zhou. A Simple Online Algorithm for Competing with Dynamic Comparators. In Proceedings of the 36th Conference on Uncertainty in Artificial Intelligence (**UAI**), 2020.

Journal Publications

1. Sijia Chen, **Yu-Jie Zhang**, Wei-Wei Tu, Peng Zhao, and Lijun Zhang. Optimistic Online Mirror Descent for Bridging Stochastic and Adversarial Online Convex Optimization. Journal of Machine Learning Research (**JMLR**), to appear, 2024.

2. Peng Zhao, **Yu-Jie Zhang**, Lijun Zhang, and Zhi-Hua Zhou. Adaptivity and Non-stationarity: Problem-dependent Dynamic Regret for Online Convex Optimization. Journal of Machine Learning Research (**JMLR**), 25(98):1−52, 2024.

3. Peng Zhao, Jia-Wei Shan, **Yu-Jie Zhang** and Zhi-Hua Zhou. Exploratory Machine Learning with Unknown Unknowns. Artificial Intelligence (**AIJ**), 327:104059, 2024.

AWARDS & HONORS

- Top Reviewer for NeurIPS 2023, 2023
- Top Reviewer for UAI 2023, 2023
- Top Reviewer for NeurIPS 2022, 2022
- The University of Tokyo Fellowship, Tokyo, 2021
- Outstanding Master Dissertation Award by Jiangsu Computer Society, Nanjing, 2021
- Excellent Graduate of Nanjing University, Nanjing, 2021
- National Graduate Scholarship for Master Student, MOE of PRC, 2020

ACADEMIC SERVICE

- Reviewer for Conference: NeurIPS (2021-2024), ICML (2022-2024), ICLR (2022-2024), AISTATS (2021-2024), UAI (2022-2024), AAAI (2021, 2024), IJCAI (2020-2023), ECAI (2020).
- Reviewer for Journal: Journal of Machine Learning Research (JMLR), IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI), Frontiers of Computer Science.