

EDUCATION

University of Virginia	Charlottesville, US
Ph.D. in Computer Science, Co-advised by Dr. Hongning Wang and Dr. Haifeng Xu	2019–Current
– Research Interest: Online Learning in multi-agent environments, Bandit Algorithm, Recommender System	
Peking University	Beijing, China
M.S. in Applied and Computational Mathematics, Advisor: Dr. Tiejun Li	2013–2016
B.S. in Mathematics, double major in Philosophy	2009–2013

EXPERIENCE

University of Chicago	Chicago, IL, US
Visiting Student at Computer Science Department Advisor: Dr. Haifeng Xu	2023.5–present
– Multi-agent modeling for digital content market.	
Meta Research	Menlo Park, CA, US
Student Researcher at Modern Recommender System Group Host: Dr. Qifan Wang	2023.12–2024.7
– Deploy mechanism design solutions for improving user engagement on Instagram Reels.	
Google Research	Mountain View, CA, US
Student Researcher at Forsight Manager: Dr. Craig Boutilier, Host: Dr. Chih-wei Hsu	2022.5–2022.9
– Work on Bayesian preference elicitation in interactive recommender systems using Concept Activation Vectors.	
ByteDance	Remote in US
Research Intern at AML Lab Manager: Dr. Chong Wang, Host: Dr. Taiqing Wang	2021.5–2021.8
– Enhance the recommendation diversity and mitigate the Echo chamber effect of TikTok via collaborative Thompson sampling approach and gradient-based Determinantal Point Processes.	
Alibaba Group	Beijing, China
Algorithm Engineer at Taobao Manager: Dr. Xin Li	2017.8–2019.7
– Design and maintain content recommendation system for Taobao main page, mainly focusing on deep-learning based match/ranking solution.	

MANUSCRIPTS AND PREPRINTS

1. ***F. Yao**, *Y. Cheng, E. Wei, and H. Xu, “Single-Agent Poisoning Attacks Suffice to Ruin Multi-Agent Learning”, *under review*.
2. *S. Ahmadi, *A. Blum, *H. Xu, ***F. Yao**, “Strategic Filtering for Content Moderation: Free Speech or Free of Distortion?”, *under review*.
3. *J. Wu, *H. Xu, and ***F. Yao**, “Multi-Agent Learning for Iterative Dominance Elimination: Formal Barriers and New Algorithms”, *under major revision for JMLR*.
4. Y. Cheng, **F. Yao**, X. Liu, and H. Xu, “Learning from Imperfect Human Feedback: a Tale from Corruption-Robust Dueling”, arXiv preprint, arXiv:2405.11204.

5. E. Biyik, **F. Yao**, A. Haig, Y. Chow, C. Hsu, M. Ghavamzadeh, and C. Boutilier, “Preference Elicitation with Soft Attributes in Interactive Recommendation”, arXiv preprint arXiv:2311.02085.

JOURNAL PUBLICATIONS

1. *R. Sundaram, *A. Vullikanti, *H. Xu, and ***F. Yao**, “Pac-Learning for Strategic Classification”, **Journal of Machine Learning Research (JMLR)**, 2023.
2. **F. Yao**, F. Li, and T. Li, “Mean Field Study of a Propagation-Turnover Lattice Model for the Dynamics of Histone Marking”, *Science China Physics, Mechanics & Astronomy*, vol. 60, no. 2, p. 028 711, 2017.

CONFERENCE PUBLICATIONS

1. **F. Yao**, L. Yiming, L. Jingzhou, N. Shaoliang, W. Qifan, W. Hongning, “Mechanism Design Through Exploration Control: Optimizing the Trade-Off Between User and Creator Engagement”, **Neurips**, 2024.
2. **F. Yao**, Y. Liao, M. Wu, C. Li, Y. Zhu, J. Yang, J. Liu, Q. Wang, H. Xu, and H. Wang, “User Welfare Optimization in Recommender Systems with Competing Content Creators”, **KDD**, 2024.
3. **F. Yao**, C. Li, D. Nekipelov, H. Wang, and H. Xu, “Human vs. Generative AI in Content Creation Competition: Symbiosis or Conflict?”, **ICML**, 2024.
4. **F. Yao**, C. Li, K. Sankararaman, Y. Liao, Y. Zhu, Q. Wang, H. Wang, and H. Xu, “Rethinking Incentives in Recommender Systems: Are Monotone Rewards Always Beneficial?”, **Neurips**, 2023.
5. **F. Yao**, C. Li, D. Nekipelov, H. Wang, and H. Xu, “How Bad is Top- K Recommendation under Competing Content Creators?”, **ICML, Oral (2.4%)**, 2023.
6. M. Wu, **F. Yao**, and H. Wang, “An End-to-End Solution for Spatial Inference in Smart Buildings”, **BuildSys, Best Paper Nomination**, 2023.
7. **F. Yao**, C. Li, D. Nekipelov, H. Wang, and H. Xu, “Learning from a Learning User for Optimal Recommendations”, **ICML**, 2022. (**Spotlight** presentation at the ICML 2023 Workshop on Interactive Learning).
8. *J. Wu, *H. Xu, and ***F. Yao**, “Multi-Agent Learning for Iterative Dominance Elimination: Formal Barriers and New Algorithms”, **COLT**, 2022.
9. **F. Yao**, C. Li, D. Nekipelov, H. Wang, and H. Xu, “Learning the Optimal Recommendation from Revealed Preferences”, **AAAI**, 2022.
10. *R. Sundaram, *A. Vullikanti, *H. Xu, and ***F. Yao**, “Pac-Learning for Strategic Classification”, **ICML, Oral (3%)**, 2021.

*Equal contribution; authors listed in alphabetical order.

INVITED TALKS

- Cornell University, ESIF Economics and AI+ML Meeting, “Human v.s. GenAI Competition”. 2024.8
- George Mason University, “Understanding Competition-Driven Content Ecosystems”. 2024.6
- Northwestern University, Midwest Workshop on Control and Game Theory, “Understanding Competition-Driven Content Ecosystems”. 2024.4

• Mila & Vector Institute, Seminar talk, “Understanding Competition-Driven Content Ecosystems”.	2024.4
• Cornell University, Seminar talk, “Understanding Competition-Driven Content Ecosystems”.	2024.2
• Meta Research, “How Bad is Top-K Recommendation under Competing Content Creators?”.	2023.8
• Uber Research, “Learning from a Learning User for Optimal Recommendations”.	2022.6

AWARDS

• UVa Endowed Graduate Fellowship (\$12k).	2024
• ICML Travel Award.	2022
• Graduate Teaching Award of the CS Department of UVa.	2020
• Outstanding Graduate Student Award of Peking University.	2016
• Bronze Medalist in Team Contest, Honorable Prize in Individual Contest of Applied and Computational Mathematics, Shing-Tung Yau College Student Mathematics Contests (Ranked top 6 in team nation-wide).	2012
• Gold Medalist in Chinese Mathematics Olympics (Ranked top 40 individually nation-wide).	2009

TEACHING

• Teaching Assistant at University of Virginia <i>Introduction to Algorithmic Economics</i>	Spring 2023
• Teaching Assistant at University of Virginia <i>Introduction to Reinforcement Learning</i>	Fall 2022
• Teaching Assistant at University of Virginia <i>Learning and Games</i>	Spring 2021
• Teaching Assistant at University of Virginia <i>Algorithms</i>	Fall 2020
• Teaching Assistant at Peking University <i>Linear Algebra</i>	Spring 2016

SERVICES

• ICML PC	2021,2022,2023,2024
• Neurips PC	2022,2023,2024
• KDD PC	2022,2023,2024
• AAAI PC	2021,2022,2023,2024
• IJCAI PC	2022,2023,2024