

Yurong Chen

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RESEARCH INTERESTS

Algorithmic game theory and machine learning

Private information learning, utilization, and counteraction, with reflections on the assumptions of classic economics and game theory.

Games among strategic and learning agents in newly-emerged practical applications.

APPOINTMENTS

Inria, Ecole Normale Supérieure, PSL Research University

SIERRA team in Inria Paris

Postdoctoral Researcher

Advisor: Michael I. Jordan

Paris, France

Oct. 2024 - Present

EDUCATION

Peking University

Center on Frontiers of Computing Studies

Ph.D. in Computer Science

Supervisor: Xiaotie Deng

Thesis: “*Games over Learning Agents: Private Information Learning, Utilization, and Coordination*”

Beijing, China

Sept. 2019 - Jul. 2024

Beihang University

Hua Luogeng Class, Shenyuan Honors College

B.Sc in Applied Mathematics

Supervisor: Xiangyu Liang

Beijing, China

Sept. 2015 - Jul. 2019

GPA: 3.85/4.00 (Top 5%)

INTERNSHIP

The University of Hong Kong

Research Assistant

Host: Zhiyi Huang

Hong Kong, China

Aug. 2024 - Sept. 2024

Alibaba (Beijing) Software Services Co., Ltd. company

Alimama - Ad Product Technology

Algorithm Engineer Intern

Beijing, China

May. 2024 - Sept. 2024

The University of Hong Kong

Research Assistant

Host: Zhiyi Huang

Hong Kong, China

Feb. 2023 - Aug. 2023

PUBLICATIONS

Conference Proceedings

($\alpha - \beta$) denotes alphabetical order. * denotes equal contribution.

[C1] **Are Bounded Contracts Learnable and Approximately Optimal?**

($\alpha - \beta$) **Yurong Chen**, Zhaohua Chen, Xiaotie Deng, and Zhiyi Huang

25th ACM Conference on Economics and Computation (**EC 2024**)

[C2] **A Scalable Neural Network for DSIC Affine Maximizer Auction Design**

Zhijian Duan, Haoran Sun, **Yurong Chen**, and Xiaotie Deng

37th Conference on Neural Information Processing Systems (**NeurIPS 2023**)

[C3] **Learning-Based Ad Auction Design with Externalities: the Framework and A Matching-Based Approach**

Ningyuan Li, Yunxuan Ma, Yang Zhao, Zhijian Duan, **Yurong Chen**, Zhilin Zhang, Jian Xu, Bo Zheng, and Xiaotie Deng

29th ACM SIGKDD Conference on Knowledge Discovery and Data Mining (**KDD 2023**)

- [C4] **Coordinated Dynamic Bidding in Repeated Second-Price Auctions with Budgets**
Yurong Chen*, Qian Wang*, Zhijian Duan, Haoran Sun, Zhaohua Chen, Xiang Yan, and Xiaotie Deng
40th International Conference on Machine Learning (ICML 2023)
- [C5] **Optimal Private Payoff Manipulation against Commitment in Extensive-form Games**
($\alpha - \beta$) Yurong Chen, Xiaotie Deng, and Yuhao Li
18th Conference on Web and Internet Economics (WINE 2022, Best Student Paper)
- [C6] **On the Convergence of Fictitious Play: A Decomposition approach**
Yurong Chen, Xiaotie Deng, David Mguni, Chenchen Li, Jun Wang, Xiang Yan, and Yaodong Yang
31st International Joint Conference on Artificial Intelligence (IJCAI 2022)
- [C7] **The Tight Bound for Pure Price of Anarchy in an Extended Miner's Dilemma Game**
Qian Wang and Yurong Chen
20th International Conference on Autonomous Agents and Multiagent Systems (AAMAS 2021)

WORKING PAPERS

- [1] **Mechanism Design for LLM Fine-tuning with Multiple Reward Models**
Haoran Sun, Yurong Chen, Siwei Wang, Wei Chen, and Xiaotie Deng
- [2] **Learning a Stackelberg Leader's Incentive from Optimal Commitments**
($\alpha - \beta$) Yurong Chen, Xiaotie Deng, Jiarui Gan, and Yuhao Li

TEACHING

Teaching Assistant in Peking University

- **Conscious Turing Machine (2020 Spring, 2021 Spring, 2023 Spring)**, School of Electronics Engineering and Computer Science
- **Mathematics in Artificial Intelligence (2022 Spring)**, Yuanpei College
- **Discrete Mathematics I for Turing Class (2019 Fall, 2020 Fall)**, School of Electronics Engineering and Computer Science
- **Discrete Mathematics II for Turing Class (2020 Spring)**, School of Electronics Engineering and Computer Science

Teaching Assistant in Beihang University

- **Real Function for Hua Luogeng Class (2019 Spring)**, Hua Luogeng Class, Shenyuan Honors College

HONORS AND AWARDS

- CCF Incentive Program for Outstanding Doctoral Dissertations in Theoretical Computer Science, 2024
Thesis: "*Games over Learning Agents: Private Information Learning, Utilization, and Coordination*"
- Outstanding Doctoral Dissertation Award of the School of Computer Science, Peking University, 2024
Thesis: "*Games over Learning Agents: Private Information Learning, Utilization, and Coordination*"
- Outstanding Graduate of Peking University, 2024
- Best Student Paper Award of WINE 2022, 2022
- Excellent Student of CFCS, Peking University, 2019 & 2022
- Merit Student, Peking University, 2021
- Hongsheng Award, Peking University, 2021
- Excellent Graduate Student of Beijing, 2019
- Hua Luogeng Prize of Chinese Academy of Sciences, 2016 & 2017 & 2018
- National Scholarship (5%), 2016 & 2017
- Excellent Student of Beihang University, 2016 & 2017
- Academic Excellent Award of Beihang University, **1st Prize**, 2016 & 2017
- Award for Subject and Competition of Beihang University, **2nd Prize**, 2017
- National English Competition for Undergraduate Students, **2nd Prize**, 2017
- China Undergraduate Mathematical Contest in Modeling in Beijing District, **2nd Prize**, 2017
- National Mathematics Competition for Undergraduate Students (math major), **2nd Prize**, 2016

SERVICES

PC member

IJTCS-FAW 2023 (Track chair of Multi-Agent Learning, Track chair of Conscious AI), IJTCS-FAW 2022 (Track chair of Conscious AI), IJTCS 2021 (Track chair of Conscious AI)

Conference Reviewer

STACS 2025, AISTATS 2025, ICLR 2025, ITCS 2025, SODA 2025, NeurIPs 2024, FOCS 2024, ISAAC 2023, STOC 2023, WINE 2020

Journal Reviewer

Theoretical Computer Science, SIAM Journal on Computing (SICOMP)

Volunteer

Conferences: IJTCS-FAW 2023, IJTCS-FAW 2022, WINE 2021, IJTCS 2021

Workshops and Forums: Mathematical Foundations of the Internet and Blockchain Economics Workshop (Student organizer), The 2nd Cybereconomy and Game Theory Forum in China.

TALKS

Are Bounded Contracts Learnable and Approximately Optimal?

- INFORMS Annual Meeting, Seattle, WA, USA, Oct. 2024
- City University of Hong Kong, Hong Kong, China, Aug. 2024

Coordinated Dynamic Bidding in Repeated Second-Price Auctions with Budgets

- Female Forum, International Joint Conference on Theoretical Computer Science – Frontier of Algorithmic Wisdom (IJTCS-FAW 2023), Macau, China, Aug. 2023

Optimal Private Payoff Manipulation against Commitment in Extensive-Form Games

- GAMES 2024, the 7th World Congress of the Game Theory Society, Beijing, China, Aug. 2024
- CCF 2023 Annual Conference on Computational Economics (CCF CE 2023), Macau, China, Aug. 2023
- 2023 IJCAI Young Elite Symposium (IJCAI-Young 2023), Shanghai, China, Jul. 2023
- Young Ph.D. Forum, IJTCS-FAW' 22, Hong Kong, China, Aug. 2022
- Complexity & Algorithm Workshop. Jiangsu, China, Aug. 2022

Learning to Manipulate a Commitment Optimizer

- 3rd CCF Theoretical Computer Science Excellent Young Ph.D. forum, Shandong, China, Sept. 2022

On the Convergence of Fictitious Play: A Decomposition Approach

- 31st International Joint Conference on Artificial Intelligence and the 25th European Conference on Artificial Intelligence (IJCAI-ECAI 2022), Jul. 2022