

ZHAOHUA CHEN

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School of Computer Science,
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RESEARCH INTERESTS

I am now working on various topics in the interplay of computer science and economics, also known as algorithmic game theory. I have a specific interest in the fields of mechanism design, online learning, and online algorithms.

EDUCATION

Ph.D. of Science, in process 2021.09 – 2026.07 (in expectation)

Peking University, Haidian, Beijing, China

Center on Frontiers of Computing Studies (CFCS), School of Computer Science

Advisor: Xiaotie Deng

Bachelor of Science, Summa Cum Laude 2017.09 – 2021.07

Peking University, Haidian, Beijing, China

Turing class of AI

Intelligence Science and Technology

School of Electronics Engineering and Computer Science

GPA: 3.768 / 4

INTERNSHIPS

Research Assistant at **The University of Hong Kong** 2025.05 – 2025.10

Mentor: Zhiyi Huang

Research Intern at **Taobao & TMall Group** 2024.07 –

Mentor: Zhilin Zhang

Topic: Design and analysis of mechanisms and algorithms in the e-commerce market

Research Intern at **DeCus.io (under Conflux)** 2020.09 – 2021.10

Mentors: Ge Chen, Tian Lin, Guang Yang

Topic: Group assignment scheme design in decentralized asset custody

Research Intern at **Conflux** 2020.03 – 2020.09

Mentor: Guang Yang

Topic: Mechanism design and analysis in blockchain cross-chain protocols

PUBLICATIONS

PAPERS UNDER REVIEW

- [P1] **Pareto-Efficient Multi-Buyer Mechanisms: Characterization, Fairness and Welfare**
($\alpha\beta$) Moshe Babaioff, Sijin Chen, **Zhaohua Chen**, and Yiding Feng
arXiv: 2602.11967
- [P2] **Ad Insertion in LLM-generated Responses**
Shengwei Xu*, **Zhaohua Chen***, Xiaotie Deng, Zhiyi Huang, and Grant Schoenebeck
EC 2025 Workshop on Frontiers of Online Advertising (Spotlight)
arXiv: 2601.19435
- [P3] **Budget-Constrained Auctions with Unassured Reports: Strategic Equivalence and Structural Properties**
Zhaohua Chen, Mingwei Yang, Chang Wang, Jicheng Li, and Xiaotie Deng
*Major revision at **Management Science***
EC 2025 Workshop on Frontiers of Online Advertising (Spotlight)
Preliminary conference version appeared in WWW 2024
- [P4] **Product Marketing Management on the E-Commerce Platform**
Zhaohua Chen, Qingmao Yao, Yao Zhu, Ningyuan Li, Yurong Chen, Zhilin Zhang, Chuan Yu, Jian Xu, Bo Zheng, and Xiaotie Deng
EC 2025 Workshop on Online Learning and Economics

JOURNAL ARTICLES

- [J1] **On Tightness of Tsaknakis-Spirakis Descent Methods for Approximate Nash Equilibria**
($\alpha\beta$) **Zhaohua Chen**, Xiaotie Deng, Wenhan Huang, Hanyu Li, and Yuhao Li
Information and Computation
doi: 10.1016/j.ic.2023.105046
- [J2] **An Efficient and Robust Committee Structure for Sharding Blockchain**
Mengqian Zhang*, Jichen Li*, **Zhaohua Chen***, Hongyin Chen*, and Xiaotie Deng
IEEE Transactions on Cloud Computing
doi: 10.1109/TCC.2022.3217856
- [J3] **A Provable Softmax Reputation-based Protocol for Permissioned Blockchains**
($\alpha\beta$) Hongyin Chen*, **Zhaohua Chen***, Yukun Cheng, Xiaotie Deng, Wenhan Huang, Jichen Li, Hongyi Ling*, and Mengqian Zhang
IEEE Transactions on Cloud Computing
doi: 10.1109/TCC.2021.3130244

CONFERENCE PROCEEDINGS

- [C1] **Contextual Decision-Making with Knapsacks Beyond the Worst Case**
Zhaohua Chen, Rui Ai, Mingwei Yang, Yuqi Pan, Chang Wang, and Xiaotie Deng
NeurIPS 2024
arXiv: 2211.13952

- [C2] **Are Bounded Contracts Learnable and Approximately Optimal?**
 $(\alpha\beta)$ Yurong Chen, **Zhaohua Chen**, Xiaotie Deng, and Zhiyi Huang
EC 2024
EC 2025 Workshop on Online Learning and Economics
doi: 10.1145/3670865.3673483
arXiv: 2402.14486
- [C3] **Robust Decision Aggregation with Second-order Information**
Yuqi Pan, **Zhaohua Chen**, and Yuqing Kong
WWW 2024
doi: 10.1145/3589334.3645384
arXiv: 2311.14094
- [C4] **Budget-Constrained Auctions with Unassured Priors: Strategic Equivalence and Structural Properties**
Zhaohua Chen, Mingwei Yang, Chang Wang, Jicheng Li, Zheng Cai, Yukun Ren, Zhihua Zhu, and Xiaotie Deng
WWW 2024 (Oral)
doi: 10.1145/3589334.3645344
arXiv: 2203.16816
SSRN: 4071291
- [C5] **Dynamic Budget Throttling in Repeated Second-Price Auctions**
Zhaohua Chen*, Chang Wang*, Qian Wang*, Yuqi Pan, Zhuming Shi, Zheng Cai, Yukun Ren, Zhihua Zhu, and Xiaotie Deng
AAAI 2024
arXiv: 2207.04690
- [C6] **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
ICML 2023
arXiv: 2306.07709
- [C7] **Decentralized Asset Custody Scheme with Security against Rational Adversary**
 $(\alpha\beta)$ **Zhaohua Chen** and Guang Yang
WINE 2021
doi: 10.1007/978-3-030-94676-0_25
arXiv: 2008.10895
Cryptology ePrint Archive: 2020/1229
- [C8] **On Tightness of the Tsaknakis-Spirakis Algorithm for Approximate Nash Equilibrium**
 $(\alpha\beta)$ **Zhaohua Chen**, Xiaotie Deng, Wenhan Huang, Hanyu Li*, and Yuhao Li
SAGT 2021
doi: 10.1007/978-3-030-85947-3_7
arXiv: 2107.01471
- [C9] **An Efficient Permissioned Blockchain Model with Provable Reputation Mechanism**
 $(\alpha\beta)$ Hongyin Chen*, **Zhaohua Chen***, Yukun Cheng, Xiaotie Deng, Wenhan Huang, Jichen Li, Hongyi Ling*, and Mengqian Zhang
ICDCS 2021 (Poster)
doi: 10.1109/ICDCS51616.2021.00123
arXiv: 2002.06852

[C10] **CycLedger: A Scalable and Secure Parallel Protocol for Distributed Ledger via Sharding**

Mengqian Zhang*, Jichen Li*, **Zhaohua Chen***, Hongyin Chen*, and Xiaotie Deng

IPDPS 2020 (*Best paper nominee*)

doi: 10.1109/IPDPS47924.2020.00045

arXiv: 2001.06778

PATENTS

1. CN112419060B. **Asset hosting system, asset management method, node and medium**

Inventor: YANG GUANG, **CHEN ZHAOHUA**, WU MING, LONG FAN, LI CHENXING

TEACHINGS

Advisor:

Billiards

Yuanpei College, Peking University, 2023.03 – 2023.06

Billiards

Yuanpei College, Peking University, 2022.10 – 2022.12

Teaching Assistant:

Discrete Math and Structures (I)

Peking University, 2023.09 – 2024.01

Study and Practice on Topics of Frontier Computing (II)

Peking University, 2023.02 – 2023.06

Study and Practice on Topics of Frontier Computing (I)

Peking University, 2022.09 – 2023.01

Discrete Math and Structures (I)

Peking University, 2021.09 – 2022.01

Discrete Math and Structures (I)

Peking University, 2020.09 – 2021.01

Blockchain Theory and Technique

Peking University, 2019.09 – 2020.01

SERVICES

Journal Reviewing:

SIAM Journal on Computing

Conference Reviewing:

FOCS 2024, GameSec 2021, ICDCS 2022, ICLR 2026, ICML 2025, NeurIPS {2025, 2024}, WINE 2025, WSDM 2026, WWW 2024

Services in Academic Organizations:

Administrative assistant

CCF TCCE, 2022.08 –

Organizing:

Chair of undergraduate research forum

IJTCS 2021

Leader of volunteer group

WINE 2020

Volunteering:

IJTCS-FAW 2023, CSIAM-BTAF 2021, IJTCS 2020

HONORS & AWARDS

Scholarship for Turing Graduate Project in Peking University	2025
Short-term Exchange Program for Ph.D. Students in Peking University	2024
SLB Scholarship	2024
Presidential Scholarship	2024
UBIQUANT Scholarship	2023
The China Optics Valley Scholarship	2022
3 rd Prize of Peking University Scholarship	2020
National Scholarship	2019
Jingjishijie Scholarship	2018
Merit Student	2024
Merit Student	2023
Merit Student	2022
Excellent Graduate of Peking University	2021
Merit Student	2020
Merit Student	2019
Merit Student	2018
3 rd Place in Inter-City College Student Billiards Invitational Tournament (Team of PKU)	2025
3 rd Place in Captial College Student Billiards Championship (Single)	2021
2 nd Place in Captial College Student Billiards Championship (Team of PKU)	2019
3 rd Prize in “Tencent Cup” Peking University Programming Contest	2019