

# ZHAOHUA CHEN

Center on Frontiers of Computing Studies (CFCS),  
School of Computer Science,  
Peking University,  
**Haidian, Beijing, China**  
Email: chenzhaohua@pku.edu.cn, caezoah@gmail.com  
Homepage: <https://daleczh.github.io/>  
Phone Number: +86 13120372700

## 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

<i>Ph.D. of Science, in process</i>	2021.09 – 2026.07 (in expectation)
<b>Peking University</b> , Haidian, Beijing, China	
Center on Frontiers of Computing Studies (CFCS), School of Computer Science	
Advisor: Xiaotie Deng	
<i>Bachelor of Science, Summa Cum Laude</i>	2017.09 – 2021.07
<b>Peking University</b> , Haidian, Beijing, China	
Turing class of AI	
Intelligence Science and Technology	
School of Electronics Engineering and Computer Science	
GPA: 3.768 / 4	

## INTERNSHIPS

<b>Research Assistant at The University of Hong Kong</b>	2025.05 – 2025.10
Mentor: Zhiyi Huang	
<b>Research Intern at Taobao &amp; TMall Group</b>	2024.07 –
Mentor: Zhilin Zhang	
Topic: Design and analysis of mechanisms and algorithms in the e-commerce market	
<b>Research Intern at DeCus.io (under Conflux)</b>	2020.09 – 2021.10
Mentors: Ge Chen, Tian Lin, Guang Yang	
Topic: Group assignment scheme design in decentralized asset custody	
<b>Research Intern at Conflux</b>	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  
**SACT 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*

*Billiards*

Yuanpei College, Peking University, 2023.03 – 2023.06

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 <sup>rd</sup> 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 <sup>rd</sup> Place in Inter-City College Student Billiards Invitational Tournament (Team of PKU)	2025
3 <sup>rd</sup> Place in Capital College Student Billiards Championship (Single)	2021
2 <sup>nd</sup> Place in Capital College Student Billiards Championship (Team of PKU)	2019
3 <sup>rd</sup> Prize in “Tencent Cup” Peking University Programming Contest	2019