

ZHAOHUA CHEN

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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.

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 **Alibaba**

2024.07 –

Mentor: Zhilin Zhang

Topic: Design and analysis of mechanisms and algorithms in the online 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

JOURNALS

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

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

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

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

Are Bounded Contracts Learnable and Approximately Optimal?
($\alpha\beta$) Yurong Chen, **Zhaohua Chen**, Xiaotie Deng, and Zhiyi Huang
EC 2024
doi: 10.1145/3670865.3673483
arXiv: 2402.14486

Robust Decision Aggregation with Second-order Information
Yuqi Pan, **Zhaohua Chen**, and Yuqing Kong
WWW 2024
doi: 10.1145/3589334.3645384
arXiv: 2311.14094

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

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

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

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

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

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

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

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**Conference Reviewing:**

WINE 2025, ICML 2025, NeurIPS {2025, 2024}, FOCS 2024, WWW 2024, GameSec 2021

Journal Reviewing:

SIAM Journal on Computing

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

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

3rd 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 Captial Colledge Student Billiards Championship (Single)	2021
2 nd Place in Captial Colledge Student Billiards Championship (Team)	2019
3 rd Prize in “Tencent Cup” Peking University Programming Contest	2019