ZHAOHUA CHEN

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School of Computer Science,
Peking University,
Haidian, Beijing, China
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Homepage: https://daleczh.github.io/

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: Prof. 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

CN112419060A. **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:
ICML 2025, NeurIPS 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
3$^{\mathrm{rd}}$ 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$^{\text{rd}}$ Place in Captial Colledge Student Billiards Championship (Single)   2021
2$^{\text{nd}}$ Place in Captial Colledge Student Billiards Championship (Team)   2019

3$^{\text{rd}}$ Prize in "Tencent Cup" Peking University Programming Contest   2019