Zishuo Zhao

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ISE, University of Illinois Urbana-Champaign

1 Background

- **2021/01 - now** PhD student, Department of Industrial & Enterprise Systems Engineering, University of Illinois Urbana-Champaign
  Research Area: Operations Research
  Expected Graduation: Summer 2025
- **2020/08 - 2021/01** Research Assistant, Haihua Institute for Frontier Information Technology
- **2016/05 - 2020/07** Undergraduate student, Yao Class, Institute for Interdisciplinary Information Sciences, Tsinghua University
- **2015/08 - 2016/05** Undergraduate student, Department of Computer Science and Technology, Tsinghua University

2 Research Interests

I am a third-year PhD student in UIUC, majoring in operations research, and currently doing research in blockchain mechanism design. My research interests also span a wide scope including mechanism design, game theory, fair division, algorithm design and cryptography. I have an affection for adopting the ideas and tools in theoretical computer science into applications especially in the field of blockchain systems.

Beside my major, I have an amateur interest in computational geometry and topology, which was my research interest during undergraduate time. I have always been excited to solve or prove research problems with geometric and topological inspirations.

I also have an interest in Capture-The-Flag(CTF) competitions, especially in Crypto and Reverse.

3 Research

3.1 Publications

Bayesian Mechanism Design for Blockchain Transaction Fee Allocation[1]

Zishuo Zhao, Xi Chen, Yuan Zhou

Best Paper Award, *NeurIPS Workshop on Decentralization and Trustworthy Machine Learning in Web3, 2022.*

Crypto Economics Security Conference (CESC 2022).

[1] A preliminary version of this research has the title "Bayesian-Nash-Incentive-Compatible Mechanism for Blockchain Transaction Fee Allocation"

Invited to *INFORMS Annual Meeting 2022*.

Dynamic Car Dispatching and Pricing: Revenue and Fairness for Ridesharing Platforms [Link]
Zishuo Zhao, Xi Chen, Xuefeng Zhang, Yuan Zhou
International Joint Conference on Artificial Intelligence (IJCAI 2022), **Long Oral (3.75%)**.
Invited to *INFORMS Annual Meeting 2021*.

ClusterSLAM: A SLAM Backend for Simultaneous Rigid Body Clustering and Motion Estimation [Link]
Jiahui Huang, Sheng Yang, Zishuo Zhao, Yukun Lai, Shi-Min Hu.
International Conference on Computer Vision (ICCV 2019).

3.2 Working Papers

Personalized Pricing with Group Fairness Constraint
Xin Chen, Zexing Xu, Zishuo Zhao, Yuan Zhou. (alphabetical order)

4 Academic Activities

- Facilitator in section Revenue & Pricing, INFORMS Annual Meeting 2021
- Invited to the Alumni Forum for the 10th Anniversary of IIIS, Tsinghua University in 2021.

5 Awards

- **Best Paper Award**, NeurIPS Workshop on Decentralization and Trustworthy Machine Learning in Web3, 2022
- 12th place in 2nd THUCTF Information Security Contest in Tsinghua University, 2020
- 12th place in 24th Artificial Intelligence Programming Contest in Tsinghua University, 2020
- Baidu Scholarship for Arts Excellence, 2018
- Xuetang Scholarship, 2016-2020
- 15th place in 20th Artificial Intelligence Programming Contest in Tsinghua University, 2016.
- Second Prize in Chinese Mathematical Olympiad (CMO), 2014
- First Prize in National Olympiad in Informatics in Provinces (NOIP), 2013

6 Miscellaneous

6.1 Extracurricular Activities

- I have an interest in vocal music, and performed singing at Yao Class Carnivals in 2016, 2018, 2019, 2020, 2022. Particularly in 2022, I performed the anime song *Carrying You* of my own version of Chinese translation.
- I developed two Reverse challenges in the Capture-The-Flag contest TQLCTF 2022.
- I have an interest in Chinese writing, especially for coplets and poetry. I also have a personal WeChat official account for daily writing.

6.2 Coding Skills

- Mainly using C++, MATLAB and Mathematica, also with command of Python, Java, PHP.
- With some knowledge in Verilog HDL and assembly language.
- Open to learn new programming languages when in need.

(Updated on Feb 21, 2023)