Zishuo Zhao

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ISE, University of Illinois Urbana-Champaign

1 Background

- **2023/09 - 2024/08 (Expected)** Visiting Student, Institute for Data Systems and Society, Massachusetts Institute of Technology
  Advisor: David Simchi-Levi
- **2021/01 - now** PhD student, Department of Industrial & Enterprise Systems Engineering, University of Illinois Urbana-Champaign
  Research Area: Operations Research
  Advisor: Yuan Zhou
  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 amateur interest in Capture-The-Flag(CTF) competitions, especially in Crypto and Reverse.

3 Publications

Personalized Pricing with Group Fairness Constraint

Xin Chen*, Zexing Xu*, Zishuo Zhao*, Yuan Zhou*. (alphabetical order)

ACM Conference on Fairness, Accountability, and Transparency (ACM FAccT 2023)

Bayesian Mechanism Design for Blockchain Transaction Fee Allocation[1] [Link]

Xi Chen*, David Simchi-Levi*, Zishuo Zhao*, Yuan Zhou*. (alphabetical order)

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

Crypto Economics Security Conference (CESC 2022).

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).

4 Academic Activities

- Facilitator in section Revenue & Pricing, INFORMS Annual Meeting 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
- Scholarship for Arts Excellence in Tsinghua University, 2018
- Xuetang Scholarship in Tsinghua University, 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 Languages

- Mandarin Chinese (native)
- English (fluent)

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

6.2 Extracurricular Activities

- I developed two Reverse challenges in the Capture-The-Flag contest TQLCTF 2022.
- I was invited to the Alumni Forum for the 10th Anniversary of IIIS, Tsinghua University in 2021.

6.3 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 April 12, 2023)