XINYU MAO

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Website: https://sparkmxy.github.io

RESEARCH INTEREST

I am broadly interested in theoretical computer science, especially in cryptography and computational complexity.

EDUCATION

University of Southern California — Aug. 2022 – Present
Ph.D. student in Computer Science
Advisor: Prof. Jiapeng Zhang — Los Angeles, United States

Shanghai Jiao Tong University — Aug. 2018 – June 2022
Bachelor of Engineering in Computer Science
A member of ACM Honor Class, Zhiyuan College
Advisors: Prof. Yijia Chen and Prof. Yong Yu
GPA: 3.96 / 4.3 | Ranking: 2 / 33 — Shanghai, China

RESEARCH EXPERIENCE

University of Southern California — May 2021 - April 2022
Research Intern advised by Prof. Jiapeng Zhang
Research Topic: foundations of cryptography.

Shanghai Jiao Tong University — Sept. 2020 – Feb. 2021
Undergraduate Researcher advised By Prof. Shengli Liu
Reseach Topic: public-key cryptography

PUBLICATIONS

1. Xinyu Mao, Noam Mazor, and Jiapeng Zhang. Non-adaptive universal one-way hash functions from arbitrary one-way functions. In *Advances in Cryptology – EUROCRYPT 2023: 42nd Annual International Conference on the Theory and Applications of Cryptographic Techniques, Lyon, France, April 23-27, 2023, Proceedings, Part IV*, page 502–531, Berlin, Heidelberg, 2023. Springer-Verlag

2. Mi-Ying Huang, Xinyu Mao, Guangxu Yang, and Jiapeng Zhang. Communication lower bounds of key-agreement protocols via density increment arguments. In Guy Rothblum and Hoeteck Wee, editors, *Theory of Cryptography*, pages 185–206, Cham, 2023. Springer Nature Switzerland

3. Xinyu Mao and Jiapeng Zhang. On the power of svd in the stochastic block model. *Advances in Neural Information Processing Systems*, 36:32765–32781, 2023

4. Xinyu Mao, Guangxu Yang, and Jiapeng Zhang. Gadgetless lifting beats round elimination: Improved lower bounds for pointer chasing. *Innovations in Theoretical Computer Science (ITCS)*, 2025

HONORS AND AWARDS

Zhiyuan Outstanding Student Scholarship — 2022

Shanghai Outstanding Graduate — 2022

Foresight-Sequoia Scholarship — 2021
70 winners in SJTU each year

Huawei Scholarship   2020
14 winners at Zhiyuan College each year

Zhiyuan Honorary Scholarship   2018, 2019, 2020
Top 5% in SJTU each year

Bronze Medal   2017
 The 34th China National Olympiad in Informatics (NOI)

Teaching Experience

Great Ideas in Computer Science   Fall 2019, Fall 2020, Fall 2021
Teaching Assistant
I led a TA team, and I was deeply involved in the course design.
I wrote an Enigma Simulator to facilitate teaching.   Shanghai Jiao Tong University

Skills

Programming: C++, Java, Python, JavaScript, Latex
Language: Chinese (native), English (TOEFL 105)