Xiaoyu (Sherry) Chen (陈晓雨)

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EDUCATION

Peking University 2020 – Present

BSc. in Computer Science

- Enrolled in the Turing Class, an honors program of about 30 students each year
- GPA: 3.803/4.0 (top 10% in the CS department of 100+ students)
- Completed 10+ advanced courses across mathematics, theoretical computer science, systems, and machine learning.

PUBLICATIONS

- Yecheng Xue*, **Xiaoyu Chen***, Tongyang Li, and Shaofeng H.-C. Jiang. 2023. Near-optimal quantum coreset construction algorithms for clustering. In Proceedings of the 40th International Conference on Machine Learning (ICML'23).

  ** Equal contribution*

- **Xiaoyu Chen**, Shaofeng H.-C. Jiang, and Robert Krauthgamer. 2023. Streaming Euclidean Max-Cut: Dimension vs Data Reduction. In Proceedings of the 55th Annual ACM Symposium on Theory of Computing (STOC'23).

  Authors listed in alphabetical order, as per TCS convention.

RESEARCH EXPERIENCE

Research Intern at TTIC Summer 2024

Advised by: Zhiyuan Li

- Worked on theoretical understanding of modern adaptive optimizers
- Attended Modern Paradigms in Generalization workshop at Simons Institute, UC Berkeley

Deep Reinforcement Learning for generals.io Spring 2024

- Trained an AI agent for the RTS game using imitation policy pretraining and end-to-end reinforcement learning

Lower Bounds for Streaming Algorithms in High Dimensions Sep 2023 - Feb 2024

Advised by: Shaofeng Jiang, Steven Heilman

- Reduced the lower bounds for high-dimensional streaming algorithms to a group-valued isoperimetric inequality problem
- Some unpublished new upper bounds

Security of Practical Ciphers Summer 2023

Advised by: Tianren Liu

- Applied algebraic geometry tools to prove independence of MiMC.

Quantum Algorithms for Clustering Dec 2022 - Feb 2023
Advised by: Tongyang Li, Shaofeng Jiang

- Proved lower bounds for quantum clustering algorithms

Streaming Algorithms for Euclidean Max-Cut Jun 2022 - Oct 2022
Advised by: Shaofeng Jiang, Robert Krauthgamer

- Re-invented the proof of a constant-dimensional Johnson-Lindenstrauss lemma for Max-Cut
- Developed a streaming algorithm solving Max-Cut in the high-dimensional setting

Lower Bounds of Quantum Algorithms for Submodular Function Minimization Spring 2022
Advised by: Tongyang Li

- Proved a conditional lower bound of quantum query complexity $\Omega(n)$.

TEACHING EXPERIENCE

Teaching Assistant, Peking University Fall 2023
for *Discrete Mathematics and Structures* (Instructor: Prof. Tianren Liu)

- An honors course covering advanced topics in broad areas of set theory & mathematical logic, abstract algebra, combinatorics, and stochastic processes.
- Contributed to syllabus and course content design, created exam and homework problems, held office hours, and graded assignments

HONORS AND AWARDS

- SenseTime Scholarship (25 recipients nationwide, 20000 RMB), 2024
- John Hopcroft Scholarship, 2024
- Huatai Securities Scholarship (about top 5% in the department, 10000 RMB), 2023
- Lingjun Investment Scholarship (about top 5% in the department, 10000 RMB), 2022
- Gold Medal (4th place), ICPC Asia Regional Contest (Kunming), 2022
- Gold Medal (12th place), CCPC Harbin Site, 2021
- Gold Medal (top 50 nationwide), Chinese National Olympiad in Informatics, 2019

MISCELLANEOUS

- I'm a Go player with a rank of 5 dan on FoxGo. AlphaGo was one of my inspirations to study AI.
- As UOJ (uoj.ac) administrator in 2020, I revitalized the platform by implementing flexible contest settings and public problem submissions. This prominent Chinese competitive programming platform saw significant activity increase after these reforms. Also collaborated with the China Computer Federation (CCF) as a problem setter for Olympiad in Informatics (OI) in China, working to improve the system through community and official engagement.
- Personally, I'm deeply interested in humanities and social sciences and constantly think about LGBTQ+ rights and conditions, especially in China.