Ruiquan Gao

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Education

Doctor of Philosophy in Computer Science September 2022 - Present
Advised by Aviad Rubinstein and Moses Charikar,
Stanford University

Bachelor of Engineering in Computer Science August 2018 - June 2022
Yao Class, Institute for Interdisciplinary Information Sciences
Tsinghua University, GPA: 3.95/4.00 (Rank 5/54)

Publications

1. Moses Charikar, Vincent Cohen-Addad, **Ruiquan Gao**, Fabrizio Grandoni, Euiwoong Lee, Ernest van Wijland, *A* $(4+\epsilon)$*-Approximation for Euclidean* k*-Means via Non-Monotone Dual-Fitting*. In Proceedings of the 58th Annual ACM Symposium on Theory of Computing, STOC 2026 (to appear)
2. Moses Charikar, Vincent Cohen-Addad, **Ruiquan Gao**, Fabrizio Grandoni, Euiwoong Lee, Ernest van Wijland, *An Improved Greedy Approximation for (Metric)* k*-Means*. In Proceedings of the 66th IEEE Symposium on Foundations of Computer Science, FOCS 2025
3. **Ruiquan Gao**, Alexandros Hollender, Aviad Rubinstein, *High-to-Low Dimensional PPA-completeness: Borsuk-Ulam, Tucker, Consensus Halving, and Ham Sandwich*. In Proceedings of the 66th IEEE Symposium on Foundations of Computer Science, FOCS 2025
4. **Ruiquan Gao**, Mohammad Roghani, Aviad Rubinstein, Amin Saberi, *Hardness of Approximate Sperner and Applications to Envy-Free Cake Cutting*. In Proceedings of the 65th IEEE Symposium on Foundations of Computer Science, FOCS 2024
5. Nima Anari, **Ruiquan Gao**, Aviad Rubinstein, *Parallel Sampling via Counting*. In Proceedings of the 56th Annual ACM Symposium on Theory of Computing, STOC 2024
6. Moses Charikar, **Ruiquan Gao**, *Improved Approximations for Ultrametric Violation Distance*. In Proceedings of the 2024 ACM-SIAM Symposium on Discrete Algorithms, SODA 2024
7. Eric Budish, **Ruiquan Gao**, Abraham Othman, Aviad Rubinstein, Qianfan Zhang, *Practical algorithms and experimentally validated incentives for equilibrium-based fair division (A-CEEI)*. In Proceedings of the 24th ACM Conference on Economics and Computation, EC 2023
8. **Ruiquan Gao**, Zhongtian He, Zhiyi Huang, Zipei Nie, Bijun Yuan, Yan Zhong, *Improved Online Correlated Selection*. In Proceedings of the 62nd IEEE Annual Symposium on Foundations of Computer Science, FOCS 2021

Talks

An Improved Greedy Approximation for (Metric) k**-Means**
FOCS 2025 December 2025

High-to-Low Dimensional PPA-completeness: Borsuk-Ulam, Tucker, Consensus Halving, and Ham Sandwich
FOCS 2025 December 2025
Stanford Theory Lunch September 2025

Hardness of Approximate Sperner and Applications to Envy-Free Cake Cutting
FOCS 2024 October 2024
CS Peer Talk (Peking University) September 2024

Parallel Sampling via Counting
STOC 2024 June 2024
Stanford Theory Lunch June 2024

Improved Approximations for Ultrametric Violation Distance
SODA 2024 January 2024

Improved Online Correlated Selection
Yao Class Seminar (Tsinghua University) November 2021

Teaching

CS 161: Design and Analysis of Algorithms
Teaching Assistant, Stanford University Winter 2026
Teaching Assistant, Stanford University Summer 2025
Teaching Assistant, Stanford University Winter 2025

Honors and Awards

Stanford Graduate Fellowship March 2022
Rambus Corporation Fellow

Yao Award September 2021
Bronze Medal

Scholarship for Comprehensive Outstanding, Tsinghua October 2020

Scholarship for Academic Excellence, Tsinghua October 2019 & 2021

ACM-ICPC Asia Regional Contest (Xuzhou) October 2018
Gold Medal (champion)

National Olympiad in Informatics July 2016 & 2017
Gold Medal

Other Research Experience

Stanford University
(Remote) visiting student advised by Aviad Rubinstein Spring 2021
Project: Approximate Competitive Equilibrium from Equal Incomes

The University of Hong Kong
(Remote) research intern advised by Zhiyi Huang Summer 2020
Project: Online Correlated Selection

Services

Conference Subreviewer: STOC '24 '25, FOCS '25, SODA '22 '25 '26, ITCS '25, ICALP '24, SOSA'26