Lichen Zhang

412-463-5490 | lichenz@mit.edu | Homepage

Education

Massachusetts Institute of Technology — Sep. 2022 - May 2027 (expected)
Ph.D in Mathematics, Advisor: Jonathan A. Kelner — *Cambridge, MA*

Carnegie Mellon University — June 2021 – May 2022
M.S. in Computer Science, Advisor: Gary L. Miller — *Pittsburgh, PA*

Carnegie Mellon University — Aug. 2017 – May 2021
B.S. in Computer Science — *Pittsburgh, PA*

Research Interests

- Sketching, sampling and streaming.
- Differential privacy.
- Optimization.

Experience

Teaching Assistant (Instructor: Pravesh K. Kothari and Anil Ada) — Jan 2022 – May 2022
Carnegie Mellon University — *Pittsburgh, PA*
- Teaching Assistant for The Computational Lens (15-155) class.

Teaching Assistant (Instructor: Pravesh K. Kothari) — Jan 2021 – May 2021
Carnegie Mellon University — *Pittsburgh, PA*
- Teaching Assistant for Undergraduate Complexity Theory (15-455) class.

Undergraduate Research Assistant (Advisor: Gary L. Miller) — Oct. 2019 – Sep. 2020
Carnegie Mellon University — *Pittsburgh, PA*
- Granted under CMU Summer Undergraduate Research Fellowship (SURF).
- Discrete optimization algorithm via ODE perspective.
- Combinatorial graph clustering algorithm breaks Cheeger's bound.

Publications (Author names in alphabetical order)

Space-Efficient Interior Point Method, with applications to Linear Programming and Maximum Weight Bipartite Matching
- S. Cliff Liu, Zhao Song, Hengjie Zhang, **Lichen Zhang** and Tianyi Zhou
- To appear in the 50th International Colloquium on Automata, Languages and Programming (ICALP 2023)
- arxiv link: https://arxiv.org/pdf/2009.06106.pdf

An Online and Unified Algorithm for Projection Matrix Vector Multiplication with Application to Empirical Risk Minimization
- Lianke Qin, Zhao Song, **Lichen Zhang** and Danyang Zhuo
- To appear in the 26th International Conference on Artificial Intelligence and Statistics (AISTATS 2023)
- link: https://proceedings.mlr.press/v206/qin23a/qin23a.pdf

Dynamic Tensor Product Regression
- Aravind Reddy, Zhao Song and **Lichen Zhang**
- Published in the 36th Conference on Neural Information Processing Systems (NeurIPS 2022)
- arxiv link: https://arxiv.org/pdf/2210.03961.pdf

Fast Sketching of Polynomial Kernels of Polynomial Degree
- Zhao Song, David P. Woodruff, Zheng Yu, and **Lichen Zhang**
- Published in the 38th International Conference on Machine Learning (ICML 2021).
- arxiv link: https://arxiv.org/pdf/2108.09420.pdf

References

Johnathan A. Kelner, Professor at Massachusetts Institute of Technology — Email: kelner@mit.edu
Gary L. Miller, Professor at Carnegie Mellon University — Email: gm2f@andrew.cmu.edu
Zhao Song, Researcher at Adobe Research — Email: zsong@adobe.com
Pravesh K. Kothari, Assistant Professor at Cargenie Mellon University — Email: sawako@cs.cmu.edu