

Xizhi Liu

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Education

- 2018- , Ph.D. in Mathematical Computer Science, University of Illinois at Chicago. My advisor is Prof. Dhruv Mubayi.
- 2014-18, B.S. in Mathematics and Applied Mathematics, University of Science and Technology of China. My undergraduate advisor was Prof. Jie Ma.

Fields of Interest

- Combinatorics, extremal set theory and extremal graph theory.

Teaching

- 2020 Spring, Math 165, Calculus for Business, TA.
- 2019 Fall, Math 110, College Algebra, TA.
- 2019 Spring, Math 310, Applied Linear Algebra, Grader.
- 2018 Fall, Math 310, Applied Linear Algebra, Grader.

Awards/Fellowships/Grants

- 2021-2022: Dean's Scholar Fellowship, UIC.

Talks

- 10/2021: Fuzhou University, Center for Discrete Mathematics and Theoretical Computer Science, Fuzhou, China, Online.
- 09/2021: Georgia Tech Graph Theory Seminar, Atlanta, US.
- 05/2021: EPC (Extremal and Probabilistic Combinatorics) Webinar, online Zoom.
- 03/2021: SCMS (Shanghai Center for Mathematical Sciences) Combinatorics Seminar, Shanghai, China, online Zoom.
- 02/2021: Seminar, School of Mathematical Sciences, Shangdong University, Jinan, China, online Zoom.
- 07/2020: Seminar, School of Mathematical Sciences, East China Normal University, Shanghai, China, online Zoom.

- 06/2019: Seminar, School of Mathematical Sciences, University of Science and Technology, Hefei, China.
- 01/2019: Seminar, School of Mathematical Sciences, University of Science and Technology, Hefei, China.

Publications

Submitted

- Cancellative hypergraphs and Steiner triple systems, (29 pages), preprint available at <http://arxiv.org/abs/1912.11917>.
- Stability theorems for some Kruskal-Katona type results, (with S. Mukherjee) (20 pages), preprint available at <http://arxiv.org/abs/2006.04848>.
- A note on hypergraphs without non-trivial intersecting subgraphs, (14 pages), preprint available at <http://arxiv.org/abs/2007.11055>.
- Hypergraphs with many extremal configurations, (with D. Mubayi and C. Reiher) (32 pages), preprint available at <https://arxiv.org/abs/2102.02103>.
- A unified approach to hypergraph stability, (with D. Mubayi and C. Reiher) (26 pages), preprint available at <https://arxiv.org/abs/2104.00167>.
- A note on explicit constructions of designs, (with D. Mubayi) (9 pages), preprint available at <https://arxiv.org/abs/2106.05347>.
- The feasible region of induced graphs, (with D. Mubayi and C. Reiher) (27 pages), preprint available at <https://arxiv.org/abs/2106.16203>.

Accepted

- d -cluster-free sets with a given matching number, (19 pages), *European J. Combin.*, 82:103000, 2019.
- Structural results for conditionally intersecting families and some applications, (13 pages), *Electron. J. Combin.*, 33(2), 2020.
- New short proofs to some stability theorems, (8 pages), *European J. Combin.*, 96:103350, 2021
- The feasible region of hypergraphs, (with D. Mubayi), *J. Combin. Theory, Ser. B*, 148:23 - 59, 2021.
- Tight bounds for Katona's shadow intersection theorem, (with D. Mubayi) (17 pages), *European J. Combin.*, 97:103391, 2021.
- A hypergraph Turán problem with no stability, (with D. Mubayi) (22 pages), *Combinatorica*, preprint available at <https://arxiv.org/abs/1911.07969>.
- Sparse halves in K_4 -free graphs, (with J. Ma) (19 pages), *Journal of Graph Theory*, preprint available at <http://arxiv.org/abs/2007.14623>.
- On a generalized Erdős-Rademacher problem, (with D. Mubayi) (21 pages), *Journal of Graph Theory*, preprint available at <https://arxiv.org/abs/2005.07224>.
- Independent sets in hypergraphs omitting an intersection, (with T. Bohman and D. Mubayi) (27 pages), *Random Structures & Algorithm.* preprint available at <http://arxiv.org/abs/2101.04258>.