Xifan Yu

CONTACT INFORMATION

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Homepage: xifanyu.github.io

RESEARCH INTERESTS

I am broadly interested in theoretical computer science. Recently I am interested in graph theory, average-case complexity, spectral methods, Sum-of-Squares algorithms, and high-dimensional statistics.

EDUCATION

Yale University   *Sept 2021 - Present*

Ph.D. in Computer Science (expected June 2027)

University of Chicago   *Sept 2017 - June 2021*

M.S. in Computer Science (June 2021)
B.S. in Computer Science (June 2021)
B.S. in Mathematics (June 2021)

TEACHING EXPERIENCE

Yale University, Department of Computer Science   *Sept 2022 - May 2023*
Teaching Fellow   *New Haven, CT*

•	CPSC 365	Algorithms,	Dr. Dylan McKay,	Spring 2023
•	CPSC 202	Mathematical Tools for CS,	Dr. Dylan McKay,	Fall 2022

University of Chicago, Department of Computer Science   *Oct 2020 - Mar 2021*
Teaching Assistant   *Chicago, IL*

•	CMSC 27230	Honors Theory of Algorithms,	Prof. László Babai,	Winter 2021
•	CMSC 37115	Intro to Mathematical Reasoning,	Prof. László Babai,	Fall 2020

University of Chicago, Department of Computer Science   *April 2019 - June 2020*
Grader   *Chicago, IL*

•	CMSC 27500	Graph Theory,	Prof. Ketan Mulmuley,	Spring 2020
•	CMSC 37000	Algorithms,	Prof. Yury Makarychev,	Winter 2020
•	CMSC 27530	Honors Graph Theory,	Prof. László Babai,	Spring 2019

INDUSTRY EXPERIENCE

Horizon Robotics Inc.   *June 2019 - Sept 2019*
Software Engineer   *Cupertino, CA*

PUBLICATIONS AND PREPRINTS

Statistical inference of a ranked community in a directed graph. Dmitriy Kunisky, Daniel A. Spielman, Alexander S. Wein, Xifan Yu. *To appear in Symposium on Theory of Computing (STOC)*, 2025.

Computational hardness of detecting graph lifts and certifying lift-monotone properties of random regular graphs. Dmitriy Kunisky, Xifan Yu. *Symposium on Foundations of Computer Science (FOCS)*, 2024.

Counting stars is constant-degree optimal for detecting any planted subgraph. Xifan Yu, Ilias Zadik, Peiyuan Zhang. *Conference on Learning Theory (COLT)*, 2024.

A degree 4 sum-of-squares lower bound for the clique number of the Paley graph. Dmitriy Kunisky, Xifan Yu. *Computational Complexity Conference (CCC)*, 2023.

HONORS AND AWARDS

- **Phi Beta Kappa, Inducted**   *June 2020*
  University of Chicago
- **Student Marshall**   *June 2020*
  University of Chicago
- **Dean's List**   *2017-2018, 2018-2019, 2019-2020*
  University of Chicago

Programming Competition Awards

- **Top 1000 in Round 2**   *May 2020*
  Google Code Jam 2020
- **North America Finalist**   *Feb 2020*
  International Collegiate Programming Contest's inaugural North America Championship
- **Top 500 in Round 2**   *July 2019*
  Facebook Hacker Cup 2019
- **World Finalist**   *April 2019*
  43rd Annual World Finals of the International Collegiate Programming Contest

REFERENCES

Daniel A. Spielman
Sterling Professor of Computer Science
Professor of Statistics and Data Science and of Mathematics
Yale University
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