

Xifan Yu

CONTACT INFORMATION	Email: xifan.yu@yale.edu Homepage: xifanyu.github.io	Tel: (773) 690-2203
RESEARCH INTERESTS	I am broadly interested in theoretical computer science, including graph theory, average-case complexity, spectral methods, Sum-of-Squares algorithms, and high-dimensional statistics. Recently I am interested in finite free probability and the theory of language generation.	
EDUCATION	Yale University Ph.D. in Computer Science (expected June 2027)	<i>Sept 2021 - Present</i>
	University of Chicago M.S. in Computer Science (June 2021) B.S. in Computer Science and Mathematics, <i>summa cum laude</i> (June 2021)	<i>Sept 2017 - June 2021</i>
TEACHING EXPERIENCE	Yale University, Department of Computer Science <i>Teaching Fellow</i> <ul style="list-style-type: none">CPSC 365 Algorithms, Dr. Dylan McKay, Spring 2023CPSC 202 Mathematical Tools for CS, Dr. Dylan McKay, Fall 2022 University of Chicago, Department of Computer Science <i>Teaching Assistant</i> <ul style="list-style-type: none">CMSC 27230 Honors Theory of Algorithms, Prof. László Babai, Winter 2021CMSC 37115 Intro to Mathematical Reasoning, Prof. László Babai, Fall 2020 University of Chicago, Department of Computer Science <i>Grader</i> <ul style="list-style-type: none">CMSC 27500 Graph Theory, Prof. Ketan Mulmuley, Spring 2020CMSC 37000 Algorithms, Prof. Yury Makarychev, Winter 2020CMSC 27530 Honors Graph Theory, Prof. László Babai, Spring 2019	<i>Sept 2022 - May 2023</i> <i>New Haven, CT</i>
INDUSTRY EXPERIENCE	Horizon Robotics Inc. <i>Software Engineer</i>	<i>June 2019 - Sept 2019</i> <i>Cupertino, CA</i>
PUBLICATIONS AND PREPRINTS	Stable algorithms lower bounds for estimation from MMSE discontinuities. Xifan Yu, Ilias Zadik. <i>To Appear in Conference of Learning Theory (COLT)</i> , 2026. Differentially private language generation in the limit. Anay Mehrotra, Grigoris Velegkas, Xifan Yu, Felix Zhou. <i>To Appear in Conference of Learning Theory (COLT)</i> , 2026. Language generation with infinite contamination. Anay Mehrotra, Grigoris Velegkas, Xifan Yu, Felix Zhou. <i>To Appear in Conference of Learning Theory (COLT)</i> , 2026. Counting stars is constant-degree optimal for detecting any planted subgraph. Xifan Yu, Ilias Zadik, Peiyuan Zhang. <i>Mathematical Statistics and Learning</i> , 2025. Statistical inference of a ranked community in a directed graph. Dmitriy Kunisky, Daniel A. Spielman, Alexander S. Wein, Xifan Yu. <i>Symposium on Theory of Computing (STOC)</i> , 2025. Computational hardness of detecting graph lifts and certifying lift-monotone properties of random regular graphs. Dmitriy Kunisky, Xifan Yu. <i>Symposium on Foundations of Computer Science (FOCS)</i> , 2024. Counting stars is constant-degree optimal for detecting any planted subgraph (Extended Abstract). Xifan Yu, Ilias Zadik, Peiyuan Zhang. <i>Conference on Learning Theory (COLT)</i> , 2024. A degree 4 sum-of-squares lower bound for the clique number of the Paley graph. Dmitriy Kunisky, Xifan Yu. <i>Computational Complexity Conference (CCC)</i> , 2023.	
HONORS AND AWARDS	<ul style="list-style-type: none">Phi Beta Kappa, Inducted <i>University of Chicago</i>Student Marshall <i>University of Chicago</i>Dean's List <i>University of Chicago</i>	<i>June 2020</i> <i>June 2020</i> <i>2017-2018, 2018-2019, 2019-2020</i>

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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Dmitriy Kunisky

Assistant Professor of Applied Mathematics and Statistics
Johns Hopkins University
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Ilias Zadik

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