Yufei Zhao

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MIT Department of Mathematics
77 Massachusetts Ave, Room 2-271
Cambridge, MA 02139, USA

Department of Mathematics, Massachusetts Institute of Technology	Cambridge, MA
Associate Professor	2022—
Class of 1956 Career Development Assistant Professor	2018—2021
Assistant Professor	2017—2022

Previous and Visiting Academic Positions

Department of Mathematics, Stanford University	Stanford, CA
Visiting Assistant Professor	Spring 2020
Simons Institute for the Theory of Computing, UC Berkeley	Berkeley, CA
Simons-Berkeley Research Fellow	Spring 2017
New College, University of Oxford	Oxford, UK
Esmée Fairbairn Junior Research Fellow in Mathematics	2015—2017

Education

Massachusetts Institute of Technology	Cambridge, MA
Ph.D. Mathematics. Advisor: Jacob Fox	2011—2015
University of Cambridge	Cambridge, UK
M.A.St. Mathematics with Distinction	2010—2011
Massachusetts Institute of Technology	Cambridge, MA
S.B. Mathematics, with minor in Economics	2006—2010
S.B. Computer Science and Engineering	

Selected Awards and Honors

Edmund F. Kelly Research Award, MIT Mathematics, 2022

NSF CAREER Award, 2021

UROP Outstanding Mentor Award for Faculty, MIT, 2020

First Year Advisor Award—Innovative Seminar, MIT, 2019

Sloan Research Fellowship, 2019

Future of Science Award, MIT, 2018

SIAM Dénes König Prize, 2018

Johnson Prize, MIT Mathematics, 2015

Microsoft Research PhD Fellowship, 2013–2015

Morgan Prize Honorable Mention, 2011

Gates Cambridge Scholarship, 2010–2011

Jon A. Bucsela Prize in Mathematics, MIT Mathematics, 2010

Putnam Math Competition: Three-time Putnam Fellow (top five rank) 2006, 2008, 2009; 7th Place 2007

International Mathematical Olympiad: Gold Medal 2005, Silver Medal 2006, Bronze Medal 2004

Research Interests

Combinatorics
   extremal, probabilistic, and additive combinatorics;
   graph theory; discrete geometry; applications to computer science

Grants

NSF CAREER award DMS-2044606	2021—2026
Sloan Research Fellowship	2019—2021
MIT Solomon Buchsbaum Research Fund	2018
NSF award DMS-1764176	2018—2021
NSF award DMS-1362326	2017—2018

Professional Services and Activities

Associate Editor, Advances in Mathematics, 2023—current

Editorial Advisory Board Member, Springer Graduate Texts in Mathematics, 2022—current

AMS–Simons Travel Grants Committee Member, 2021—2024

Co-organizer of MIT-Harvard-MSR Combinatorics Seminar Combinatorics Seminar, Fall 2017—current

Undergraduate first-year advisor, MIT, Fall 2017—current

Organizer of the MIT team for the Putnam Competition, Fall 2017—current

Scientific Board Member, Prague Summer School on Discrete Mathematics, 2021—current

Faculty Advisory Committee, MIT OpenCourseWare, 2022—current

Advising and Mentorship

Current PhD students:
   Aaron Berger
   Dingding Dong (Harvard)
   Nitya Mani (co-advised with Pablo Parrilo)
   Ashwin Sah
   Mehtaab Sawhney
Former PhD students:
   Benjamin Gunby (Harvard PhD '21) → Rutgers postdoc
   Jonathan Tidor (MIT PhD '22) → Stanford Science Fellow (postdoc)
Undergraduate research supervised:
   Yang Liu (2018) → Stanford PhD student
   Ryan Alweiss (2018) → Princeton PhD student
   Yunkun Zhou (2018–2019) → Stanford PhD student
   Mehtaab Sawhney (2018–2020) *Morgan Prize winner* → MIT PhD student
   Ashwin Sah (2018–2020) *Morgan Prize winner* → MIT PhD student
   David Stoner (2018–2019) *Morgan Prize honorable mention* → Stanford PhD student
   Yuan Yao (2019–2020) → MIT PhD student
   Shengtong Zhang (2019–2021) → Stanford PhD student
   Hung-Hsun Yu (2019–2021) → Cambridge Part III & Princeton PhD student
   Mihir Singhal (2019)
   Zachary Chroman (2019) → Cambridge Part III

Carl Schildkraut (2020–)
Milan Haiman (2020–2021)
Anqi Li (2021–)
Dain Kim (2021)
Mingyang Deng (2022)
Tomasz Slusarczyk (2022)
Aleksandre Saatashvili (2022–)
Saba Lepsveridze (2022–)
Honglin Zhu (2023–)
Pitchayut (Mark) Saengrungkongka (2023–)
Sanjana Das (2023–)

Postdoctoral researchers mentored:

Zilin Jiang (2018–2020) → Assistant Professor at Arizona State University
László Miklós Lovász (2018–2020) → working in industry

Research Internships

Microsoft Research New England   Cambridge, MA
   Mentor: Henry Cohn   Summers 2010, 2011, 2013, 2014

Microsoft Research Theory Group   Redmond, WA
   Mentor: Eyal Lubetzky   Summer 2012

Book

Graph Theory and Additive Combinatorics: Exploring Structure and Randomness
   Cambridge University Press, in press, pp. ∼320

Papers

65. József Balogh, Dingding Dong, Bernard Lidický, Nitya Mani, and Yufei Zhao
    Nearly all k-SAT functions are unate.
    ACM Symposium on Theory of Computing (STOC 2023) `arXiv:2209.04894`

64. Assaf Naor, Ashwin Sah, Mehtaab Sawhney, and Yufei Zhao
    Cayley graphs that have a quantum ergodic eigenbasis,
    Israel J. Math. (2022). `arXiv:2207.05527`

63. Dingding Dong, Nitya Mani, and Yufei Zhao
    On the number of error correcting codes. `arXiv:2205.12363`

62. Michael Magee, Joe Thomas, and Yufei Zhao
    Quantum Unique Ergodicity for Cayley graphs of quasirandom groups. `arXiv:2204.10642`

61. Yufei Zhao, Exploring a planet, revisited,
    Amer. Math. Monthly 129 (2022), 678–680. `arXiv:2110.04376`

60. Milan Haiman, Carl Schildkraut, Shengtong Zhang, and Yufei Zhao,
    Graphs with high second eigenvalue multiplicity,
    Bull. Lond. Math. Soc. 54 (2022), 1630–1652. `arXiv:2109.13131`

59. Dingding Dong, Nitya Mani, and Yufei Zhao
    Enumerating k-SAT functions,
    ACM-SIAM Symposium on Discrete Algorithms (SODA 2022). `arXiv:2107.09233`

58. David Conlon, Jacob Fox, Benny Sudakov, and Yufei Zhao,
Which graphs can be counted in C_4-free graphs?
Pure Appl. Math. Q., to appear. `arXiv:2106.03261`

57. Jacob Fox and Yufei Zhao,
Removal lemmas and approximate homomorphisms,
Combin. Probab. Comput., to appear. `arXiv:2104.11626`

56. Aaron Berger and Yufei Zhao,
K_4-intersecting families of graphs. `arXiv:2103.12671`

55. Ashwin Sah, Mehtaab Sawhney, Yufei Zhao,
The cylindrical width of transitive sets,
Israel J. Math., to appear. `arXiv:2101.11207`

54. Ashwin Sah, Mehtaab Sawhney, Yufei Zhao,
Paths of given length in tournaments. `arXiv:2012.00262`

53. Jonathan Tidor, Hung-Hsun Hans Yu, and Yufei Zhao,
Joints of varieties,
Geom. Funct. Anal. 32 (2022) 302–339. `arXiv:2008.01610`

52. Matthew Kwan, Lisa Sauermann, and Yufei Zhao,
Extension complexity of low-dimensional polytopes,
Trans. Amer. Math. Soc. 375 (2022), 4209–4250. `arXiv:2006.08836`

51. Zilin Jiang, Jonathan Tidor, Yuan Yao, Shengtong Zhang, and Yufei Zhao,
Spherical two-distance sets and eigenvalues of signed graphs,
Combinatorica, to appear. `arXiv:2006.06633`

50. Ashwin Sah, Mehtaab Sawhney, and Yufei Zhao,
Cayley graphs without a bounded eigenbasis,
Int. Math. Res. Not. IMRN 2022 (2022), 6157–6185. `arXiv:2005.04502`

49. Jacob Fox, Yuval Wigderson, and Yufei Zhao,
A short proof of the canonical polynomial van der Waerden theorem,
C. R. Math. Acad. Sci. Paris 358 (2020), 957–959. `arXiv:2005.04135`

48. Jacob Fox, Huy Tuan Pham, and Yufei Zhao,
Tower-type bounds for Roth's theorem with popular differences.
J. Eur. Math. Soc. (JEMS), to appear. `arXiv:2004.13690`

47. David Conlon, Jacob Fox, Benny Sudakov, and Yufei Zhao,
The regularity method for graphs with few 4-cycles,
J. Lond. Math. Soc. 104 (2021), 2376–2401. `arXiv:2004.10180`

46. Ashwin Sah, Mehtaab Sawhney, and Yufei Zhao,
Patterns without a popular difference,
Discrete Anal., 2021:8, 30 pp. `arXiv:2004.07722`

45. Ashwin Sah, Mehtaab Sawhney, Jonathan Tidor, and Yufei Zhao,
A counterexample to the Bollobás-Riordan conjectures on sparse graph limits,
Combin. Probab. Comput. 30 (2021), 796–799. `arXiv:2003.05272`

44. Hung-Hsun Hans Yu and Yufei Zhao,
Joints tightened,
Amer. J. Math., to appear. `arXiv:1911.08605`

43. Jonathan Tidor and Yufei Zhao,
Testing linear-invariant properties,

IEEE Symposium on Foundations of Computer Science (FOCS 2020), and
SIAM J. Comput. 51 (2022), 1230–1279. `arXiv:1911.06793`

42. Jacob Fox, Jonathan Tidor, and Yufei Zhao,
    Induced arithmetic removal: complexity 1 patterns over finite fields,
    Israel J. Math. 248 (2022), 1–38. `arXiv:1911.03427`

41. Jacob Fox, Huy Tuan Pham, and Yufei Zhao,
    Common and Sidorenko linear equations,
    Q. J. Math. 72 (2021), 1223–1234. `arXiv:1910.06436`

40. Yang Liu and Yufei Zhao,
    On the upper tail problem for random hypergraphs,
    Random Structures Algorithms 58 (2021), 179–220. `arXiv:1910.02916`

39. Zilin Jiang, Jonathan Tidor, Yuan Yao, Shengtong Zhang, and Yufei Zhao,
    Equiangular lines with a fixed angle,
    Ann. of Math. 194 (2021), 729–743. `arXiv:1907.12466`

38. Yufei Zhao and Yunkun Zhou,
    Impartial digraphs,
    Combinatorica 40 (2020), 875–896. `arXiv:1906.10482`

37. Ashwin Sah, Mehtaab Sawhney, David Stoner, and Yufei Zhao,
    Exponential improvements for superball packing upper bounds,
    Adv. Math. 365 (2020), 107056. `arXiv:1904.11462`

36. Jacob Fox, Ashwin Sah, Mehtaab Sawhney, David Stoner, and Yufei Zhao,
    Triforce and corners,
    Math. Proc. Cambridge Philos. Soc. 169 (2020), 209–223. `arXiv:1903.04863`

35. Ashwin Sah, Mehtaab Sawhney, David Stoner, and Yufei Zhao,
    A reverse Sidorenko inequality,
    Invent. Math. 221 (2020), 665–711. `arXiv:1809.09462`

34. David Conlon, Jonathan Tidor, and Yufei Zhao,
    Hypergraph expanders of all uniformities from Cayley graphs,
    Proc. Lond. Math. Soc. 121 (2020), 1311–1336. `arXiv:1809.06342`

33. Asaf Ferber, Vishesh Jain, and Yufei Zhao,
    On the number of Hadamard matrices via anti-concentration,
    Combin. Probab. Comput. 31 (2022), 455–477. `arXiv:1808.07222`

32. Ashwin Sah, Mehtaab Sawhney, David Stoner, and Yufei Zhao,
    The number of independent sets in an irregular graph,
    J. Combin. Theory Ser. B 138 (2019), 172–195. `arXiv:1805.04021`.

31. Jacob Fox, László Miklós Lovász, and Yufei Zhao,
    A fast new algorithm for weak graph regularity,
    Combin. Probab. Comput. 28 (2019), 777–790. `arXiv:1801.05037`

30. Noga Alon, Jacob Fox, and Yufei Zhao,
    Efficient arithmetic regularity and removal lemmas for induced bipartite patterns,
    Discrete Anal. 2019:3, 14 pp. `arXiv:1801.04675`

29. Yufei Zhao, Group representations that resist worst-case sampling. `arXiv:1705.04675`

28. Yufei Zhao, Extremal regular graphs: independent sets and graph homomorphisms,
    Amer. Math. Monthly 124 (2017), 827–843. `arXiv:1610.09210`

27. Bhaswar B. Bhattacharya, Shirshendu Ganguly, Xuancheng Shao, and Yufei Zhao,
Upper tails for arithmetic progressions in a random set,
Int. Math. Res. Not. IMRN 2020, 167–213. `arXiv:1605.02994`

26. Jacob Fox, László Miklós Lovász, and Yufei Zhao,
On regularity lemmas and their algorithmic applications,
Combin. Probab. Comput. 26 (2017), 481–505. `arXiv:1604.00733`

25. David Conlon and Yufei Zhao,
Quasirandom Cayley graphs,
Discrete Anal. 2017:6, 14 pp. `arXiv:1603.03025`

24. Bhaswar B. Bhattacharya, Shirshendu Ganguly, Eyal Lubetzky, and Yufei Zhao,
Upper tails and independence polynomials in random graphs,
Adv. Math. 319 (2017), 313–347. `arXiv:1507.04074`

23. László Miklós Lovász and Yufei Zhao,
On derivatives of graphon parameters,
J. Combin. Theory Ser. A 145 (2017), 364–368. `arXiv:1505.07448`

22. Yufei Zhao, On the lower tail variational problem for random graphs,
Combin. Probab. Comput. 26 (2017), 301–320. `arXiv:1502.00867`

21. Christian Borgs, Jennifer T. Chayes, Henry Cohn, and Yufei Zhao,
An L^p theory of sparse graph convergence II: LD convergence, quotients, and right convergence,
Ann. Probab. 46 (2018), 337–396. `arXiv:1408.0744`

20. David Conlon, Jacob Fox, and Yufei Zhao,
The Green-Tao theorem: an exposition,
EMS Surv. Math. Sci. 1 (2014), 249–282. `arXiv:1403.2957`

19. Eyal Lubetzky and Yufei Zhao,
On the variational problem for upper tails in sparse random graphs,
Random Structures Algorithms 50 (2017), 420–436. `arXiv:1402.6011`

18. Christian Borgs, Jennifer T. Chayes, Henry Cohn, and Yufei Zhao,
An L^p theory of sparse graph convergence I: limits, sparse random graph models, and power law distributions,
Trans. Amer. Math. Soc. 372 (2019), 3019–3062. `arXiv:1401.2906`

17. Yufei Zhao, An arithmetic transference proof of a relative Szemerédi theorem,
Math. Proc. Cambridge Philos. Soc. 156 (2014), 255–261. `arXiv:1307.4959`

16. Jacob Fox and Yufei Zhao,
A short proof of the multidimensional Szemerédi theorem in the primes,
Amer. J. Math. 137 (2015), 1139–1145. `arXiv:1307.4679`

15. David Conlon, Jacob Fox, and Yufei Zhao,
A relative Szemerédi theorem,
Geom. Funct. Anal. 25 (2015), 733–762. `arXiv:1305.5440`

14. Yufei Zhao, Hypergraph limits: a regularity approach,
Random Structures Algorithms 47 (2015), 205–226. `arXiv:1302.1634`

13. Henry Cohn and Yufei Zhao,
Sphere packing bounds via spherical codes,
Duke Math. J. 163 (2014), 1965–2002. `arXiv:1212.5966`

12. Henry Cohn and Yufei Zhao,
Universally optimal error-correcting codes,
IEEE Trans. Inform. Theory 60 (2014), 7442–7450. `arXiv:1212.1913`

11. Eyal Lubetzky and Yufei Zhao,
    On replica symmetry of large deviations in random graphs,
    Random Structures Algorithms 47 (2015) 109–146. `arXiv:1210.7013`

10. Jacob Fox, Po-Shen Loh, and Yufei Zhao,
    The critical window for the classical Ramsey-Turán problem,
    Combinatorica 35 (2015) 435–476. `arXiv:1208.3276`

9. David Conlon, Jacob Fox, and Yufei Zhao,
   Extremal results in sparse pseudorandom graphs,
   Adv. Math. 256 (2014), 206–290. `arXiv:1204.6645`

8. Yufei Zhao, The bipartite swapping trick on graph homomorphisms,
   SIAM J. Discrete Math. 25 (2011), 660–680. `arXiv:1104.3704`

7. Yufei Zhao, Sets characterized by the number of missing sums and differences,
   J. Number Theory 11 (2011), 2107–2134. `arXiv:0911.2292`

6. David Galvin and Yufei Zhao,
   The number of independent sets in graphs with small maximum degree,
   Graphs Combin. 27 (2011), 177–186. `arXiv:1007.4803`

5. Yufei Zhao, Counting MSTD sets in finite abelian groups,
   J. Number Theory 130 (2010), 2308–2322. `arXiv:0911.2288`

4. Yufei Zhao, Constructing numerical semigroups of a given genus,
   Semigroup Forum 80 (2010), 242–254. `arXiv:0910.2075`

3. Yufei Zhao, Constructing MSTD sets using bidirectonal ballot sequences,
   J. Number Theory 130 (2010), 1212–1220. `arXiv:0908.4442`

2. Yufei Zhao, The number of independent sets in a regular graph,
   Combin. Probab. Comput. 19 (2010), 315–320. `arXiv:0909.3354`

1. Yufei Zhao, The coefficients of a truncated Fibonacci power series,
   Fibonacci Quart. 46/47 (2009), 53–55.

Invited Talks

Selected talk videos and slides can be found on my homepage: `https://yufeizhao.com`

2023	GallianFest: Number Theory and Combinatorics in Duluth	Duluth, MN
	Sphere packings, coverings, and spherical codes (SPCSC2023)	Sofia, Bulgaria
	Cumberland Conference: Plenary Speaker	Murfreesboro, TN
	IAS Special Year Seminar	Princeton, NJ
	Oberwolfach workshop: Combinatorics	Oberwolfach, Germany
2022	TILOS and OPTML++ Seminar	Online
	U. Washington-PIMS Mathematics Colloquium	Seattle, WA
	TU Graz Combinatorics Seminar	Online
	Waterloo Algebraic Graph Theory seminar	Online
	Conference on Random Structures & Algorithms (RS&A): **Plenary Speaker**	Gniezno, Poland
	International Congress of Chinese Mathematicians (ICCM): **Plenary Speaker**	Nanjing, China/Online
	Shandong University Mathematics seminar	Online
	Workshop on Critical and Collective Effects in Graphs and Networks (CCEGN-V)	Falmouth, MA

	Oberwolfach workshop: Combinatorics, Probability and Computing	Oberwolfach, Germany
	U. of Chicago Mathematics Colloquium	Chicago, IL
	U. of Chicago Combinatorics and Theoretical Computer Science Seminar	Chicago, IL
	Johns Hopkins Applied Mathematics and Statistics Colloquium	Online
	Vrije Universiteit in Amsterdam General Mathematics Colloquium	Online
2021	AIM workshop on Spectral graph and hypergraph theory: connections and applications	Online
	Ohio State University Mathematics Colloquium	Columbus, OH
	Ohio State University Combinatorics & Probability Seminar	Columbus, OH
	National University of Singapore (NUS) Young Mathematician Lecture Series	Online
	Canadian Discrete and Algorithmic Math Conference (CanaDAM): **Plenary Lecture**	Online
	Workshop on Extremal and Algorithmic Aspects of Partition Functions	Online
	Copenhagen–Jerusalem Combinatorics Seminar	Online
	Simons Collaboration: Algorithms & Geometry Monthly Meeting	Online
	Caltech/UCLA Joint Analysis Seminar	Online
	Joint Math Meetings MAA Invited Paper Session "Coding Theory and Geometry"	Online
2020	Warwick Centre for Discrete Mathematics and its Applications seminar	Online
	Virtual Harmonic Analysis Seminar	Online
	University of Wisconsin Number Theory / Representation Theory Seminar	Online
	Princeton Discrete Mathematics Seminar	Online
	Big Seminar by Laboratory of Combinatorial and Geometric Structures	Online
	SCMS Combinatorics Seminar	Online
	Cumberland Conference Plenary speaker (Canceled due to COVID-19)	Williamsburg, VA
	Simons Collaboration: Algorithms & Geometry Annual Conference Plenary Lecture (Canceled due to COVID-19)	New York, NY
	Webinar in Additive Combinatorics	Online
	Stanford Online Combinatorics Seminar	Online
	Stanford Math Department Colloquium	Stanford, CA
	Oberwolfach workshop: Combinatorics	Oberwolfach, Germany
2019	Shanghai Center for Mathematical Sciences (Fudan) Discrete Math. Seminar	Shanghai, China
	Conference on Graph Theory and its Applications: A Tribute to Prof. Fan Chung	Sanya, China
	Atlanta Lectures Series in Combinatorics and Graph Theory at Emory	Atlanta, GA
	Princeton Discrete Mathematics Seminar	Princeton, NJ
	Banff workshop: Probabilistic and Extremal Combinatorics	Banff, AB
	ETH Zurich Theory of Combinatorial Algorithms Mittagsseminar	Zürich, Switzerland
	Oberwolfach workshop: Combinatorics, Probability and Computing	Oberwolfach, Germany
	Rutgers Discrete Math Seminar	Piscataway, NJ
	Yale Combinatorics Seminar	New Haven, CT

	Stanford Combinatorics Seminar	Stanford, CA
2018	Clay Math Institute workshop: Recent Advances in Extremal Combinatorics	Oxford, UK
	ICM satellite workshop — Combinatorics: Extremal, Probabilistic and Additive	São Paulo, Brazil
	Simons Institute workshop: Pseudorandomness Reunion	Berkeley, CA
	MIT Workshop on Local Algorithms (WOLA 2018)	Cambridge, MA
	MIT workshop on Sublinear Algorithms: bootcamp tutorial	Cambridge, MA
	SIAM Conference on Discrete Mathematics: minisymposium	Denver, CO
	SIAM Conference on Discrete Mathematics: Dénes König Prize Lecture	Denver, CO
	Georgia Tech workshop: Algorithms and Randomness	Atlanta, GA
	Northeastern U. Network Science Institute Talk	Boston, MA
	AMS Sectional Meeting at Northeastern University	Boston, MA
	Rutgers Discrete Math Seminar	Piscataway, NJ
	Tsinghua YMSC minicourse	Beijing, China
	CMU ACO Seminar	Pittsburgh, PA
	Harvard CMSA workshop: Probabilistic and Extremal Combinatorics	Cambridge, MA
	UCLA Combinatorics Seminar	Los Angeles, CA
2017	Harvard CMSA workshop: Additive Combinatorics	Cambridge, MA
	Birmingham workshop: Interactions with Combinatorics	Birmingham, UK
	BGSMath workshop: Random Discrete Structures and Beyond	Barcelona, Spain
	SFSU: ACG Seminar	San Francisco, CA
	Stanford Math Department Colloquium	Stanford, CA
	Simons Institute workshop: Structure and Randomness	Berkeley, CA
	MIT Combinatorics Seminar	Cambridge, MA
	UC Berkeley Combinatorics Seminar	Berkeley, CA
	Simons Institute workshop: Pseudorandomness Boot Camp	Berkeley, CA
	Stanford Combinatorics Seminar	Stanford, CA
	Oberwolfach workshop: Combinatorics	Oberwolfach, Germany
2016	Turing Institute workshop: Large-scale structures in random graphs	London, UK
	Birmingham Combinatorics Seminar	Birmingham, UK
	IHÉS Seminar	Bures-sur-Yvette, France
	Warwick DIMAP Seminar	Coventry, UK
	LSE/Queen Mary Colloquia in Combinatorics	London, UK
	Oberwolfach workshop: Combinatorics, Probability and Computing	Oberwolfach, Germany
	Simons Symposium: Analysis of Boolean Functions	Krün, Germany
	British Mathematical Colloquium: Combinatorics Workshop	Bristol, UK
	Oxford Mathematical Institute North meets South Colloquium	Oxford, UK
	AMS-MAA Joint Mtgs: AMS Spec. Session on Pseudorandomness and Its Applications	Seattle, WA

2015 London School of Economics Discrete Mathematics and Game Theory Seminar   London, UK
      Queen Mary Combinatorics Seminar   London, UK
      Warwick Combinatorics Seminar   Coventry, UK
      Oxford Combinatorial Theory Seminar   Oxford, UK
      Northeastern U. workshop: Random Graphs, Simplicial Complexes, and their Appl'ns   Boston, MA
      U. of Chicago Combinatorics and Theoretical Computer Science Seminar   Chicago, IL
      Rutgers Discrete Math Seminar   Piscataway, NJ
      ICERM workshop: Crystals, Quasicrystals and Random Networks   Providence, RI
2014 Atlanta Lectures Series in Combinatorics and Graph Theory at Emory   Atlanta, GA
      GSU Colloquium   Atlanta, GA
      CRM workshop: New Topics in Additive Combinatorics   Montreal, QC
      IMA workshop: Additive and Analytic Combinatorics   Minneapolis, MN
      Clay Math Institute workshop: Extremal and Probabilistic Combinatorics   Oxford, UK
      Georgia Tech Combinatorics Seminar   Atlanta, GA
      IAS Computer Science/Discrete Mathematics Seminar   Princeton, NJ
      Oxford Combinatorial Theory Seminar   Oxford, UK
      London School of Economics Discrete Mathematics and Game Theory Seminar   London, UK
      Eurandom: Minicourse on Graph Limits   Eindhoven, Netherlands
          (6-hour minicourse co-taught with Christian Borgs)
      Oberwolfach workshop: Combinatorics   Oberwolfach, Germany
2013 Simons Institute workshop: Neo-Classical Methods in Discrete Analysis   Berkeley, CA
      Rutgers Discrete Math Seminar   Piscataway, NJ
      MIT Combinatorics Seminar   Cambridge, MA
      Yale Combinatorics and Probability Seminar   New Haven, CT
      Microsoft Research Theory Reading Group   Cambridge, MA
      Oberwolfach workshop: Combinatorics and Probability   Oberwolfach, Germany
2012 MIT Combinatorics Seminar   Cambridge, MA
      SIAM Conference on Discrete Mathematics   Halifax, NS
2009 MIT Combinatorics Seminar   Cambridge, MA

Teaching

Graph Theory and Additive Combinatorics (graduate, MIT)

Lecture videos available through MIT OpenCourseWare: `https://yufeizhao.com/gtacbook/`

Term	Enrollment (credit + listener)	Instructor evaluation (max 7)
Fall 2021	36 + 9	6.7
Fall 2019	30 + 14	6.9
Fall 2017	31 + 17	7.0

Probabilistic Methods in Combinatorics (graduate, MIT)

Lecture notes: `https://yufeizhao.com/pm/`

Term	Enrollment	Instructor evaluation
Fall 2022	54 + 12	6.9
Fall 2020	25 + 16	Not rated due to COVID
Spring 2019	47 + 25	6.9

Combinatorial Analysis (undergraduate, MIT)

Term	Enrollment	Instructor evaluation
Fall 2018	22 + 7	6.8

Mathematical Problem Solving: Putnam Seminar (undergrad first-year seminar, MIT)

Term	Enrollment	Instructor evaluation
Fall 2022	21	6.4
Fall 2021	26	6.7
Fall 2020	16	Not rated due to COVID
Fall 2019	22	6.3
Fall 2018	22	6.4
Fall 2017	10	6.3

Previous teaching:

> Polynomial Method in Combinatorics, graduate-level, Oxford, 2016
> Undergraduate tutorials in geometry, Oxford, 2016

Other Experiences and Activities

Organizer and Chief Coordinator of Cyberspace Mathematical Competition (CMC) 2020

Quantitative Research Intern, D. E. Shaw & Co., New York

MIT Lusztig PRIMES Mentor

Research Experience for Undergraduates at Duluth participant (mentor: Joe Gallian)

Deputy Leader for Canadian IMO Team

Instructor at Canadian IMO Training Camps

Mentor at AwesomeMath Summer Program, Dallas

Trainer at US Math Olympiad Summer Program (MOP), Lincoln, Nebraska

Teacher at Spirit of Math Schools, Toronto