

ZHIHAN JIN

pascalprimer@gmail.com

RESEARCH INTEREST

My research interest lies broadly in Discrete Mathematics, including Ramsey theory, algebraic and probabilistic Methods in Combinatorics, extremal set theory and the applications in Theoretical Computer Science.

EDUCATION

ETH Zürich

October 2022 -

- PhD in Mathematics
- Supervised by *Prof. Benny Sudakov*

ETH Zürich

September 2020 - August 2022

- Master of Computer Science
- GPA: **5.89/6**

Shanghai Jiao Tong University

September 2016 - June 2020

- Bachelor of Engineering in Computer Science and Technology, **ACM Honors Class**, Zhiyuan College
- **ACM Honors Class** is an elite CS program for **top 5%** talented students in Shanghai Jiao Tong University.
- Advisor: **Yong Yu**
- GPA: **91.31/100 (3.93/4.3)** Rank: **3rd/37**.

AWARDS & SCHOLARSHIPS

Honours and awards

- **Merit Student, top 3%** all-round students over 17,000 in SJTU. 2018

Scholarships

- **CSC-IBM Excellent Student Scholarship, 40** over all students in China; 2019
- **The Kaiyuanlizhi Scholarship, 0.2%** over 17,000 students in SJTU; 2018
- **Zhiyuan College Honored Scholarship, 5%** over 17,000 students in SJTU; 2016, 2017, 2018
- **National Scholarship, the highest honor** for the **top 0.2%** undergraduates **in China**; 2017
- **The Hanyingjuhua Scholarship, 0.2%** over 17,000 students in SJTU; 2017
- **Changzhou Mettler Toledo Scholarship, 12** students in Changzhou, Jiangsu. 2016

TEACHING EXPERIENCE

- **Teaching Assistant** of Graph Theory, ETH Zürich Spring of 2023, 2024, 2025
- **Teaching Assistant** of Probabilistic Methods of Combinatorics, ETH Zürich Autumn 2024
- **Teaching Assistant** of Algebraic Methods of Combinatorics, ETH Zürich Autumn 2023
- **Teaching Assistant** of Probabilistic Methods of Combinatorics, ETH Zürich Autumn 2022
- **Teaching Assistant** of Mathematics for the Information Age, SJTU Summer 2019
- **Student Coach** of SJTU ACM-ICPC Teams, SJTU Spring 2019
- **Student Coach** of SJTU ACM-ICPC Teams, SJTU Autumn 2018

TALKS

Conference and workshop talks

- European Conference on Combinatorics, Hungarian Academy of Sciences, Hungary, August 2025.
- Random Structures and Algorithms, TU Wien, Austria, August 2025.
- Graph expansion and its applications, Princeton University, USA, April 2025.
- Qilu Youth Forum at Shandong University, Shandong University (online), October 2024.
- Summit 280, Eötvös University, Hungary, July 2024.
- European Conference on Combinatorics, Charles University, Czech Republic, August 2023.
- Random Structures and Algorithms, CMU, USA, June 2023.
- ACM-SIAM Symposium on Discrete Algorithms, online, January 2021.

Seminar and colloquium talks

- Mingshu Seminar, Taiyuan University of Technology, May 2025.
- Discrete Mathematics Seminar, Princeton University, April 2025.
- Discrete Math Seminar, IBS Korea, September 2024.
- Mittagsseminar, IST Austria, May 2024.
- Mittagsseminar, ETH Zürich, November 2023.
- Discrete Mathematics Seminar, Umeå University, May 2023.
- Mittagsseminar, ETH Zürich, March 2023.
- Mittagsseminar, ETH Zürich, August 2022.

PUBLICATION LIST

13. Zhihan Jin, Aleksa Milojević, István Tomon, Shengtong Zhang, From small eigenvalues to large cuts, and Chowla's cosine problem.
12. Zhihan Jin, Matthew Kwan, Lisa Sauermann, Yiting Wang, Algebraic aspects of the polynomial Littlewood-Offord problem, submitted.
11. Barnabás Janzer, Zhihan Jin, Benny Sudakov, Kewen Wu, Sunflowers and Ramsey problems for restricted intersections, submitted.
10. Zhihan Jin, Matthew Kwan, Lyuben Lichev, Colouring random Hasse diagrams and box-Delaunay graphs, submitted.
9. Noga Alon, Zhihan Jin and Benny Sudakov, The Helly number of Hamming balls and related problems, submitted.
8. Lior Gishboliner, Zhihan Jin and Benny Sudakov, Difference-Isomorphic Graph Families, submitted.
7. Michael Anastos, Zhihan Jin, Matthew Kwan and Benny Sudakov, Extremal, enumerative and probabilistic results on ordered hypergraph matchings, *Forum of Mathematics*, Sigma 13 (2025), e55.
6. Recep Altar Çiçeksiz, Zhihan Jin, Eero Rätty and István Tomon, Exponential Erdős-Szekeres theorem for matrices, *Proc. London Math. Soc.*, (2024), Vol. 129, (3): e12632.

5. Lior Gishboliner, Zhihan Jin and Benny Sudakov, Ramsey problems for monotone paths in graphs and hypergraphs, *Combinatorica*, (2024): 1-21.
4. Lior Gishboliner, Zhihan Jin and Benny Sudakov, The Minimum Degree Removal Lemma Thresholds, *J. Combinatorial Theory Ser. B*, 166 (2024), 203-221.
3. Zhihan Jin and István Tomon, Semi-algebraic and semi-linear Ramsey numbers, *J. of Combinatorial Theory Ser. B*, 163 (2023), 54-82.
2. Zhengfeng Ji, Zhihan Jin and Pinyan Lu, Approximating Permanent of a Random Matrix: Made Better and Simpler, *SODA* 2020.
1. Surbhi Goel, Aravind Gollakota, Zhihan Jin, Sushrut Karmalkar and Adam Klivans, Superpolynomial Lower Bounds for Learning One-Layer NeuralNetworks using Gradient Descent, *ICML* 2020.