JIAXI NIE

Email: jiaxi_nie@fudan.edu.cn

Research interests My research interests lie mainly in extremal combinatorics and probabilistic

combinatorics, but I keep my brain open for any interesting math problems.

Positions Postdoc, Shanghai Center for Mathematical Science 2022 – present

Postdoc, Max Planck Institute for MiS 2022 Spring/Summer

Education Ph.D. in Mathematics, University of California, San Diego 2016 – 2022

Adviser: Prof. Jacques Verstraëte. GPA: 4.00/4.00

B.S. in Mathematics, Nankai University 2012 – 2016

GPA: 90.41/100

Exchange Semester, University of California, Berkeley 2014 Fall

GPA: 4.00/4.00

Preprints 13. Sidorenko Hypergraphs and Random Turán Numbers. (With S. Spiro)

Submitted, arxiv.

12. Random Turán and counting results for general position sets over

finite fields. (with Y. Chen, X. Liu, and J. Zeng)

Submitted. arxiv.

11. Random Turán theorem for expansions of spanning subgraphs of

tight trees.

Submitted. arxiv.

Publications 10. Turán theorems for even cycles in random hypergraph.

To appear on Journal of Combinatorial Theory, Series B. arxiv.

9. On asymptotic local Turán problems. (with P. Frankl)

The Moscow Journal of Combinatorics and Number Theory, 2023, 12(4): 273-286. arxiv.

8. On asymptotic packing of convex geometric and ordered graphs. (with

E. Surya, and J. Zeng)

Journal of Graph Theory (2023), 1–15. arxiv.

7. Odd Covers of Graphs. (with C. Buchanan, A. Clifton, E. Culver, J.

O'Neill, P. Rombach, and M. Yin)

- 6. On Turán numbers for disconnected hypergraphs. (with R. Mulas) Acta Mathematica Hungarica 170, 168–182 (2023). arxiv.
- 5. On Asymptotic Packing of Geometric Graphs. (with D. Cranston, J. Verstraëte, and A. Wesolek)

Discrete Applied Mathematics 322 (2022): 142-152. arxiv.

4. Maximal independent sets in clique-free graphs. (with X. He, and S. Spiro)

European Journal of Combinatorics 106 (2022): 103575. arxiv.

- 3. Ramsey Numbers for Non-trivial Berge Cycles. (with J. Verstraëte) SIAM Journal on Discrete Mathematics 36.1 (2022): 103-113. arxiv.
- 2. Triangle-free Subgraphs of Hypergraphs. (with S. Spiro, and J. Verstraëte)

Graphs and Combinatorics 37 (2021): 2555-2570. arxiv.

1. Randomized greedy algorithm for independent sets in regular uniform hypergraphs with large girth. (with J. Verstraëte)

Random Structures & Algorithms 59.1 (2021): 79-95. arxiv.

Talks

Discrete Math Seminar, Shanghai University	Sep. 2023
Discrete Math Seminar, Yokohama National University	Sep. 2023
Discrete Math Seminar, ShanghaiTech University	June 2023
RS&A 2023, Carnegie Mellon University	June 2023
Discrete Math Seminar, Taiyuan University of Technology	May 2023
Tianyuan Math Ramsey-Turán Seminar, Fuzhou University	March 2023
Discrete Math Seminar, Shanghai Jiao Tong University	Nov. 2022
Discrete Math Seminar, University of Victoria	Nov. 2022
Czech-Slovak International Symposium on Graph Theory,	
Combinatorics, Algorithms and Applications	July 2022
Discrete Math Seminar, Shandong University	July 2022
Networks Seminar, MPI for Mathematics in the Sciences	May 2022
Joint Mathematics Meetings, online	April 2022
Graduate Student Combinatorics Conference, UCSD	March 2022
Discrete Math Seminar, Simon Fraser University	Jan. 2021
SCMC Combinatorics Seminar, Fudan University	Jan. 2021
Discrete Math Seminar, Iowa State University	Nov. 2021
AMS Fall Central Sectional Meeting, online	Oct. 2021
The Nankai University International Talent Forum	May 2021

Teaching As Instructor at Fudan University

Graph Theory	Fall 2023
As Instructor at UCSD	
MATH 20C - Calculus&Analyt Geom/Sci&Engnr	Summer I 2021
As Teaching Assistant at UCSD	
MATH 154 - Discrete Math & Graph Theory	Winter 2022
MATH 154 - Discrete Math & Graph Theory	Winter 2021
MATH 154 - Discrete Math & Graph Theory	Fall 2020
MATH 20E - Vector Calculus	Summer II 2020
MATH 154 - Discrete Math & Graph Theory	Spring 2020
MATH 154 - Discrete Math & Graph Theory	Winter 2020
MATH 170A - Intro Numerical Analys/Linear	Fall 2019
MATH 220C - Complex Analysis	Spring 2019
MATH 18 - Linear Algebra	Spring 2019
MATH 170B - Intro/Numerical Analy/Approxim	Winter 2019
MATH 170A - Intro Numerical Analys/Linear	Fall 2018
MATH 142A - Introduction to Analysis I	Summer I 2018
MATH 184A - Combinatorics	Spring 2018
MATH 184A - Combinatorics	Winter 2018
MATH 184A - Combinatorics	Fall 2017
MATH 20B - Calculus/Science & Engineering	Winter 2017
MATH 20A - Calculus/Science & Engineering	Fall 2016

Service

Served as referee for: Combinatorica, Random Structures & Algorithms, SIAM Journal of Discrete Mathematics, Journal of Graph Theory, European Journal of combinatorics, Discrete Applied Mathematics, Australasian Journal of Combinatorics, Journal of Combinatorical Optimization, Discrete Mathematics.