Zeyu Zheng

My Homepage zeyuzheng19@fudan.edu.cn or zeyu.zheng@rutgers.edu

EDUCATION

Fudan University, B.S. expected in Jul 2023 Shanghai, Mainland China
Computational Math, Buqing Su Top-notch Talent Program in Mathematics *Sep 2019 - Present*
Rutgers University, B.S. expected in Aug 2023 New Brunswick, New Jersey, USA
Pure Math major, with a minor in Computer Science *May 2022 - Present*
Budapest Semesters in Mathematics Budapest, Hungary, EU
with Highest Honors (for top students, based on professor recommendations) *Jan 2022 - Aug 2022*

Coursework:
Combinatorics(A+), Advanced Combinatorics(A), Combinatorial Optimization(A-), Graph Theory(A), Number Theory(A+), Calculus(A), Complex Analysis(A-), Real Analysis(A-), Fourier Analysis(A+), Linear Algebra (A), Abstract Algebra (B+), Galois Theory (A+), Analytic Geometry (A), Discrete and Convex Geometry (A+), Topology (A), Algebraic Topology (B+), Mathematical Modeling (A), Mathematical Modeling and Practice (A), Theory of Computing (A+), Conjecture and Proof (A), Research Opportunities(A+), Research Opportunities II(A)

RESEARCH WORKS

1. Chaoliang Tang, Hehui Wu, Shengtong Zhang, and Zeyu Zheng, "On the Turán number of the linear 3−graph C_{13}", *Electronic Journal of Combinatorics* Volume 29, Issue 3 (2022), P3.46. arXiv Journal version
2. Logan Post and Zeyu Zheng, "Common kings of a chain of cycles in a strong tournament", *under review.* arXiv
3. Robin Huang, Tibor Jordán, Henry Simmons, Kaylee Weatherspoon and Zeyu Zheng, "Regular graphs with extremal rigidity properties", *submitted.* PDF
4. Ervin Győri, Xianzhi Wang and Zeyu Zheng, "Extremal planar graphs with no cycles of particular lengths", *under review.* arXiv
5. Yaobin Chen, Hehui Wu and Zeyu Zheng, Progress on the small quasi-kernel conjecture, *in preparation.*
6. Bhargav Narayanan and Zeyu Zheng, Maximum number of independent sets in 3-graphs, *in preparation.*

RESEARCH EXPERIENCE

Fudan SCMS Combinatorics Research Group Shanghai, China
Shanghai Center for Mathematical Sciences, Fudan University *Sep 2019 - Present*
- We introduced a new approach to this kind of problems. By this new method, we proved and strengthened a conjecture of András Gyárfás about the Turán number of a linear 3-graph.
- We are now working on the small quasi-kernel conjecture. Currently we have generalized a result of Alexandr Kostochka.

BSM Undergraduate Research Opportunity Budapest, Hungary
Budapest Semesters in Mathematics *Jan 2022 - Aug 2022*
- With Professor Ervin Győri, we studied planar Turán number. We found a new proof to the planar Turán number of C_5, and determined some other planar Turán numbers.
- With Professor Tibor Jordán, we studied graph rigidity properties and established some combinatorial characterizations of redundantly rigid graphs.

Rutgers Discrete Mathematics Research Group New Jersey, USA
Rutgers University - New Brunswick *Sep 2022 - present*
- We are trying to use entropy method to study the maximal number of independent sets of 3-graphs.

TEACHING EXPERIENCE

- Fall 2021: TA for Linear Algebra at FDU

HONORS AND AWARDS

- Hungarian BME Mathematical Contest for university students, second place 2022
- Scholarship for Outstanding Students, FDU 2020-2021 & 2019-2020
- East China Cup Mathematical Modeling Contest, outstanding winner 2021
- The Chinese Mathematics Competition for college students, first prize 2020
- National High School Mathematical Contest, first prize 2018

TALKS

1. 11th Cross-strait Conference on Graph Theory and Combinatorics Aug 2021
2. Graduate Student Seminar, Fudan University Sep 2022
3. (poster) Undergraduate Mathematics Symposium, University of Illinois at Chicago Nov 2022