

## EDUCATION

### Rutgers University

*Undergraduate study in Computer Science*

### Budapest Semesters in Mathematics

*with Highest Honors*

### Fudan University

*Buqing Su Top-notch Talent Program in Mathematics*

### Alfréd Rényi Institute of Mathematics

*Semester on Large Networks and their Limits*

### University of Illinois at Urbana-Champaign

*Summer School on Flag Algebras, online*

New Brunswick, New Jersey, USA

*May 2022 - present*

Budapest, Hungary, EU

*Jan 2022 - Aug 2022*

Shanghai, Mainland China

*Sep 2019 - present*

Budapest, Hungary, EU

*May 2022 - Jun 2022*

Urbana, Illinois, USA

*Jun 2021 - Jul 2021*

### Major courses:

Combinatorial Optimization (A-), Graph Theory (A), Advanced Combinatorics (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+), Research Opportunities (A+)

## RESEARCH WORKS

1. Chaoliang Tang, Hehui Wu, Shengtong Zhang, and Zeyu Zheng, “Note on the Turán number of the linear 3-graph  $C_{13}$ ”, *under review*, [arXiv:2109.10520v3](#), 5 pages (2021).
2. Logan Post and Zeyu Zheng, “Common kings of a chain of cycles in a strong tournament”, *submitted*, [arXiv:2206.04154](#), 2 pages (2022).
3. Tibor Jordán, Henry Simmons, Kaylee Weatherspoon and Zeyu Zheng, “4-Regular graphs with extremal rigidity properties”, *manuscript*.
4. Ervin Győri, Xianzhi Wang and Zeyu Zheng, “Triangular and quadrangular contribution methods in planar Turán numbers”, *manuscript*.

## RESEARCH EXPERIENCE

### Turán Number of Linear 3-Graphs

Dec 2020 - Oct 2021

Advisor: HEHUI WU

*Shanghai Center for Mathematical Sciences, Fudan University*

- 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. ([arXiv:2109.10520v3](#))

### Shannon Capacity of Graphs

Oct 2021 - present

Advisor: HEHUI WU

*Shanghai Center for Mathematical Sciences, Fudan University*

- We work on the Shannon Capacity of odd cycles. Our approach is to find a bound of the independence number of the strong product of  $k$   $(2n+1)$ -cycles.

### Planar Turán Number

Jan 2022 - present

Advisor: ERVIN GYŐRI

*Alfréd Rényi Institute of Mathematics & Budapest Semesters in Mathematics*

- We have found a new approach to find the planar Turán number of  $C_5$ , i.e. to partition the graph into triangular blocks and do local calculations. We’ve also found a better extremal construction.
- We are currently working on the maximum number of edges in a  $C_6/C_8$ -free planar bipartite/triangle-free planar graph with some restrictions of small degree vertices.

### Rigidity Properties of Graphs

Jan 2022 - present

Advisor: TIBOR JORDÁN

*Eötvös Loránd University & Budapest Semesters in Mathematics*

- We have fully characterized the minimal 2-vertex globally rigid graphs. We proved some properties of 2-vertex globally rigid graphs and established some equivalences of 2-edge globally rigid graphs under different conditions.
- We are trying to establish some more connections between the framework rigidity and the property of the underlying graph.

### Forbidden Configurations

May 2022 - present

Advisor: ATTILA SALI

*Alfréd Rényi Institute of Mathematics & Budapest Semesters in Mathematics*

- We are working on the induced version of the Turán-type problem of uniform hypergraphs.

## 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
- Eastern China Cup Mathematical Contest in Modeling, 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