ALAİTTİN KIRTIŞOĞLU

Applied Mathematics
Illinois Institute of Technology
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https://kirtsoglu.github.io

RESEARCH INTERESTS

- Combinatorial Optimization, Graph Theory

EDUCATION

Ph.D. in Applied Mathematics — Chicago, USA
Illinois Institute of Technology, Advisor: Hemanshu Kaul — 2021 Aug–present

M.S. in Mathematics — Ankara, Turkey
Hacettepe University, Advisor: Lale Özkahya — 2019–2021

- Thesis: "Variations of Star Coloring on Graphs"

B.S. Exchange Student — Lublin, Poland
Lublin University of Technology — Feb-July 2016

B.S. in Mathematics — Hatay, Turkey
Mustafa Kemal University, **In the first place** — 2014–2018

TAKEN COURSES

- **In Ph.D.:** Computational Mathematics, Applied Analysis, Probability, Statistics, Optimization, Machine Learning, LP-based Approximation Algorithms, Discrete Math, Probabilistic Methods in Combinatorics, Statistical Learning

- **In M.S.:** Graph Theory, Reel Analysis, Algebra, Topology I, Topology II, Game Theory, Algebraic Topology

WORK EXPERIENCES

Fermi National Accelerator Laboratory (FERMILAB) — Batavia, USA
Intern in a Research Project — May 16 –July 22, 2022

- Administered by ORISE, sponsored by NSF. We worked on defining a hierarchical clustering algorithm and running graph neural networks to locate and identify particles trajectories on the data obtained from state-of-the-art 3D detectors.

Illinois Institute of Technology — Chicago, USA
Teaching Assistant / Recitation and Grading — 2021 –Present

- Calculus 1, Calculus 2, Linear Algebra, Discrete Math, Computational Math,
Multivariate and Vector Calculus, Complex Analysis, Differential Equations

TED University — Ankara, Turkey
Teaching Assistant / Recitation and Grading — 2019 –2021

- Linear Algebra, Multivariable Calculus, Differential Equations, Calculus of One Variable

PAPERS SUBMITTED TO JOURNALS

[1] A. Kırtışoğlu and L. Özkahya, "Coloring of Graphs Avoiding Bicolored Paths of a Fixed Length, [arXiv] Accepted to *Graphs and Combinatorics* ".

Contributed Talks

1. **28th British Combinatorial Conference (Online** July 2021
   "Coloring of Graphs Avoiding Bicolored Paths of a Fixed Length"

2. **SIAM Conferences on Discrete Mathematics (Online)** July 2021
   "Coloring of Graphs Avoiding Bicolored Paths of a Fixed Length"

3. **European Combinatorial Conference 2021 (Online)** Sep 2021
   "Coloring of Graphs Avoiding Bicolored Paths of a Fixed Length"

Organizing

- **VI. Bahar Mathematics Meeting, Hacettepe University** Oct 2019
  Student seminars series. The meeting is held at different universities each semester and five to six hundred students attend.

- **Home Seminars** Dec 2018–July 2019
  Organized up to 20 math seminars in my home with 30 students studying at METU, Hacettepe and Bilkent Universities.

- **IV. Bahar Mathematics Meeting, Middle East Tecnical University** Oct 2018

Presentations

1. VII. Mathematics Meeting, Boğaziçi University Feb 2020
   "A Geometric Proof of the Infinity of Primes"

2. VI. Mathematics Meeting, Hacettepe University Oct 2019
   "Acyclic and Star Colorings of Regular Graphs"

3. IV. Mathematics Meeting, Middle East Technical University Oct 2018
   "Congruent Numbers and Elliptic Curves"

4. III. Mathematics Meeting, Galatasaray University Feb 2018
   "The Game of Hex and Brouwer Fixed Point Theorem"

Workshops and Conferences

- 34th Midwestern Conference on Combinatorics, at Illinois State University in Normal, USA Oct 21 –23, 2022
- Metric Graph Theory, at CIRM in Marseille, France Dec 6–11, 2021
- Nesin Math Village Summer and Winter Schools, Turkey 2015–2020
- Cakilarasi Math Village Summer Schools, Turkey 2017–2019
- Analysis and Algebra Summer School, Turkish Mathematical Society June 19–23, 2017
- Analysis Summer School, Turkish Mathematical Society July 11–22, 2016

Skills and Hobbies

- **Languages:** English, Turkish (Native)
- **Computer Skills:** Phyton, Matlab, Latex
- **Hobbies:** GO Player (1 dan)