

# MEHMET KIRTIŞOĞLU

## RESEARCH INTEREST

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- Interested in topological data analysis, algebraic (computational) topology; homology, cohomology, homology decomposition, classifying spaces, group actions on topological spaces, homotopy, and category theory.
- Worked on dynamics on complex networks and time series analysis by using tools from the fields of dynamical systems, statistical and computational physics, big data analysis and machine learning.

## EDUCATION

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### Bilkent University

MSc. in Mathematics

Ankara, Turkey

2022–Present

- Research Area: Algebraic Topology (Classifying Spaces and Homology Decomposition), Supervisor: [Ergün Yalçın](#)

### Bilkent University

B.S. in Mathematics, CGPA: 3.10/4.00

Ankara, Turkey

2017–2022

- Senior Project: “Reconstruction of Networks of Chaotic Systems”, Advisor: [Fatihcan Atay](#)

### Hatay Science High School

High School Student, GPA: 91.93/100

Hatay, Turkey

2013–2017

## TAKEN COURSES

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- **In M.S.:** Manifold Theory, Introduction to Quantum Computation, Algebra II, Homology and Cohomology
- **In B.S.:** Abstract Mathematics I-II, Calculus I-II, Advanced Calculus I-II, Linear Algebra I-II, Differential Equations, Finite and Discrete Mathematics, Complex Analysis, Algebra I-II, Topology, Topics in Ordinary Differential Equations, Probability and Statistics for Engineers, Graduate Algebra I, Introduction to Number Theory, Real Analysis, Representation Theory, Introduction to Modeling and Optimization, Introduction to Programming in Python

## ACADEMIC EXPERIENCE

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### Network Oriented Dynamics and Data Science Research Group ([NODDS](#))

Internship

Istanbul, Turkey

2020 Nov –2022 May

- Worked on Graph Theory, Stability Theory, Synchronization Theory, Pinning Theory, and Bifurcation Theory and executed hundreds of related simulations in Python.

### Bilkent University

Grading Assistant

Ankara, Turkey

2019 Sep –2020 Jan

- MATH 220 Linear Algebra

### Bilkent University

Teaching Assistant

Ankara, Turkey

2022 Sep –Present

- Introduction to Calculus I, Introduction to Calculus II

## WORKSHOPS

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- [Nesin Math Village](#) Summer and Winter Schools, Turkey 2016–2021
- [Cakilarasi Math Village](#) Summer Schools, Turkey 2018

## SCHOLARSHIPS AND AWARDS

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2017-2022	Outstanding Success Scholarship by Turkish Educational Foundation
2017-2022	National Undergraduate Scholarship Program (2205) by TÜBİTAK (The Scientific and Technological Research Council of Turkey)
2017-2022	Comprehensive Scholarship of Bilkent University
2017	Ranked in first 5000 in Nationwide University Entrance Exam (LYS) among 2 million high school students in Turkey
2017	Ranked in first 5000 in Nationwide University Entrance Exam (YGS) among 2 million high school students in Turkey

## CONTRIBUTED TALKS

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| 1. Bilkent Math Graduate Seminars<br><i>"Simplicial Quantum Contextuality"</i>                                   | December 2022 |
| 2. Network Oriented Dynamics and Data Science Research Group<br><i>"Generalized Synchronization of Chaos"</i>    | Jul 2021      |
| 3. Bahar Mathematics Meeting VI<br><i>"An Algebraic Topological Proof of the Fundamental Theorem of Algebra"</i> | October 2019  |
| 4. Bahar Mathematics Meeting IV<br><i>"An Introduction to Modern Geometry (Inversion)"</i>                       | October 2018  |

## ORGANIZING

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| • <b>IV. Mathematics Meeting, Middle East Technical University</b><br>Student seminars series. The meeting is held at different universities each semester and five to six hundred students attend. | Oct 2019           |
| • <b>V. Mathematics Meeting, Hacettepe University</b>   | March 2019         |
| • <b>Home Seminars</b><br>Organized up to 20 math seminars in my home with 30 students studying at METU, Hacettepe and Bilkent Universities.  | Dec 2018–July 2019 |
| • <b>VI. Mathematics Meeting, Istanbul Bilgi University</b>   | Oct 2018           |

## VOLUNTEERING

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Social Awareness Projects School Teacher	Ankara, Turkey Aug 2020 –Jun 2021
Bahar Mathematics Meeting Web Designer	Turkey Jul 2018 –Nov 2019

## SKILLS AND HOBBIES

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- **Languages:** English (Fluent), Turkish (Native), German (A2.1)
- **Computer Skills:** Python, Matlab, CPLEX, LaTeX, Html, Css
- **Hobbies:** Playing Saz, GO (Weichi), Chess, Fitness