

Aziz Burak Gülen

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Education

- August 2018*— Ph.D., Mathematics
May 2024 The Ohio State University, Columbus, OH
Advisor: Facundo Mémoli
CGPA: 3.97/4.00
- September 2013*— B.Sc., Mathematics
June 2018 Middle East Technical University, Ankara, Turkey
CGPA: 3.88/4.00

Employment

- August 2024*— William W. Elliott Assistant Research Professor (Postdoc)
Present Department of Mathematics, Duke University
Mentor: Ezra Miller
- August 2018*— Graduate Teaching Associate / Graduate Research Associate
May 2024 Department of Mathematics, The Ohio State University
- February 2016*— Student Assistant
June 2017 Department of Mathematics, Middle East Technical University

Publications / Preprints

- Orthogonal Möbius Inversion and Grassmannian Persistence Diagrams. With F. Mémoli and Z. Wan, arXiv:2311.06870
- A Generalization of the Persistent Laplacian to Simplicial Maps. With F. Mémoli, Z. Wan, and Y. Wang. In 39th International Symposium on Computational Geometry (SoCG) 2023
- Galois Connections in Persistent Homology. With A. McCleary, arXiv:2201.06650 (submitted)

Teaching Experience

DUKE UNIVERSITY

- Linear Algebra & Applications, MATH 221, two sections Autumn 2024

THE OHIO STATE UNIVERSITY

- TA Training Instructor Summer 2023
- Calculus III, MATH2153, TA for three sections Autumn 2022

- TA Training Instructor Summer 2022
- Calculus for Business, MATH1131, TA for two sections Spring 2022
- Engineering Mathematics B, MATH2173, TA for three sections Autumn 2021
- Combinatorics, MATH4575 & Linear Algebra, MATH2568, Grader Spring 2021
- Precalculus, MATH1150, TA for two sections Autumn 2020
- Engineering Mathematics A, MATH1172, TA for two sections Spring 2020
- Calculus II, MATH1152, TA for two sections Autumn 2019
- Calculus II, MATH1152, TA for two sections Spring 2019
- Calculus I, MATH1151, TA for two sections Autumn 2018

MIDDLE EAST TECHNICAL UNIVERSITY

- Calculus for Mathematics Students II, MATH154, Grader Spring 2017
- Calculus for Mathematics Students I, MATH153, Grader Autumn 2016
- Basic Algebraic Structures, MATH116, TA Spring 2016

Honors and Awards

- OSU Math. Department, Special Graduate Assignments (SGA) Spring 2023
- OSU Graduate Associate Teaching Award (GATA) March 2022
- OSU Student Research Assistantship Summer 2019, Summer 2020

Talks

- Orthogonal Möbius Inversion and Grassmannian Persistence Diagrams March 2024
MSU TDA Seminar
- Orthogonal Möbius Inversion and Grassmannian Persistence Diagrams Feb. 2024
UF TDA 2024
- Orthogonal Möbius Inversion and Grassmannian Persistence Diagrams Feb. 2024
FSU Topology Seminar
- Orthogonal Möbius Inversion January 2024
JMM 2024
- Orthogonal Möbius Inversion and Grassmannian Persistence Diagrams Dec. 2023
CSU Topology Seminar
- A Generalization of the Persistent Laplacian to Simplicial Map June 2023
SoCG 2023
- Using Galois Connections to Prove Bottleneck Stability June 2023
Workshop on Möbius Inversions and Reeb Spaces
- A Tutorial on Spectral Clustering April 2023
OSU (Topology Geometry and Applications - Graduate Student Seminar)
- Computing Topological Persistence for Simplicial Maps February 2023
OSU NDA Group meeting
- Persistence Laplacian July 2022
OSU NDA Group meeting

- Saecular Persistence March 2022
OSU NDA Group meeting
- Diagrams of Persistence Modules Over Finite Posets February 2022
OSU TGDA Seminar
- Diagrams of Persistence Modules Over Finite Posets February 2022
OSU Topology, Geometry, and Applications - Graduate Student Seminar group
- Bottleneck Stability for Generalized Persistence Diagrams November 2021
OSU NDA Group meeting
- Generalized Persistence Diagrams October 2021
OSU NDA Group meeting
- Linear Systems on Metric Graphs October 2020
OSU Student Algebraic Geometry Seminar

Attended Conferences & Seminars & Summer Schools

- The 39th International Symposium on Computational Geometry Summer 2023
- Geometry and Topology meet Data Analysis and Summer 2023
Machine Learning
- Workshop on Algebraic Combinatorics and Category Spring 2022 (Online)
Theory in Topological Data Analysis
- Twelve Lectures on Tropical Geometry, Max-Planck-Institut für Summer 2020
Mathematik (Online)
- Algebraic and Tropical Meetings (ATOM) (Online) Summer 2020
- Facets of Algebraic Geometry, Michigan October 2019
- GSTGC, Illinois March 2019