Bilal Aytekin

Ph.D. Student in Mathematics, University of Maryland

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SUMMARY

Mathematics Ph.D. student at the University of Maryland with B.Sc. degrees in both Mathematics and Computer Engineering. Research in number theory and arithmetic geometry, and co-author of MathAdv, a diagnostic benchmark for formal theorem provers. Instructor and teaching assistant for university courses in calculus, differential equations, linear algebra, and probability.

EDUCATION

University of Maryland, College Park 2023 – present
Ph.D. in Mathematics College Park, MD

- Advisor: Dori Bejleri.
- Research: Higher-genus motivic height zeta functions for weighted projective stacks.

Boğaziçi University 2018 – 2023
B.Sc. in Mathematics and B.Sc. in Computer Engineering (double major) Istanbul, Turkey

- Thesis (Computer Engineering): *Entropy Hierarchy*. Advisor: Cem Say.

SKILLS

Programming: Python, C++, Java
Formal verification: Lean 4
Computer algebra: SageMath, Magma
Languages: Turkish (native), English (fluent), French (intermediate)

PUBLICATIONS AND PREPRINTS

1. **Higher-genus motivic height zeta functions for weighted projective stacks**.
   In preparation.
2. **MathAdv: What Theorem Provers Know, Reason, Formalize, and Generalize**.
   With J. Yuan, C. Martinez Lockhart, X. Liu, J. Wang, C. Deng, X. Han, V. Mastrantonis, D. Gudin, S. Zhu, A. Mohamed, J. Lang, Z. Song, and F. Huang. Submitted, 2026. arXiv:2608.25449.
3. **An Alexandrov Topology for Maximal Cohen–Macaulay Modules**.
   With M. Akdenizli, B. Çetin, and Ö. Esentepe. *Journal of Pure and Applied Algebra* 228 (2024), no. 1. arXiv:2210.03532.

TEACHING EXPERIENCE

University of Maryland, Department of Mathematics 2023 – present
Instructor; Teaching Assistant College Park, MD

- Instructor for Introduction to Math Modeling and Probability (Fall 2025).
- Teaching assistant for Abstract Algebra I (graduate), Introduction to Abstract Algebra, Cryptography, Linear Algebra for Scientists and Engineers, Differential Equations, and Calculus II and III.

Boğaziçi University Fall 2022
Undergraduate Assistant; Grader Istanbul, Turkey

- Assistant for Graduate Algebra II; grader for Probability and Statistics for Engineers.

AWARDS AND HONORS

Hauptman Fellowship, Department of Mathematics, University of Maryland 2025 – 2026
Dean's Fellowship, The Graduate School, University of Maryland 2023