

# Umutcan Kaya

## Curriculum Vitae

### PERSONAL INFORMATION

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Name: Umutcan Kaya

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### EDUCATION

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- BS(Honours) - Mathematics, Faculty of Arts and Sciences, Mersin University  
2016-2020
- MS - Mathematics, School of Mathematics, University of Leeds  
**Advisor:** Dr. Andrew Brooke-Taylor  
**Thesis title:** On Cardinal Invariants of the Continuum: Invariants Arising from Arithmetic 2021-2022
- MS - Mathematics, Faculty of Arts and Sciences, Mersin University  
**Advisor:** Prof. Dr. Mehmet Küçükaslan  
**Thesis title:** Free Continuity 2020-2023
- PhD - Mathematics, University of Warsaw/IMPAN  
**Advisor:** Dr. Grigor Sargsyan 2024-

### Erasmus Program

I continued my bachelor studies at Universitat Paderborn under Erasmus exchange program in 2017-2018 fall semester.

### Advanced Courses

During the Fall semester of 2024-2025 and the Spring semester of 2025-2026, I participated in an extensive seminar series on large cardinals and forcing held at IMPAN Gdańsk. Additional details about the seminars are provided below.

- Large Cardinals and Iteration Trees - Dr. Hab. Grigor Sargsyan.
  - In this series of seminars, starting from the foundations of the theory of large cardinals, we explored the hierarchy of large cardinals, their relations with forcing and inner models and generic absoluteness results. We also developed one of the most important concepts in inner model theory: iteration trees.
- Forcing with Side Conditions - Dr. Rahman Mohammadpour.
  - In this seminar, the technique of forcing was under investigation. Besides the basic forcing constructions, Dr. Mohammadpour has illustrated the technique called "side conditions", which help to control the behavior of the forcing,

especially to preserve certain desirable properties like stationarity, cardinals, or properness.

## AWARDS

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2210-A Graduate Scholarship, Scientific and Technological Research Council of Turkey  
2020-2022

## RESEARCH INTERESTS

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My research explores the connections between inner model theory, large cardinals, and the philosophy of mathematics. I am especially interested in how generic absoluteness can help to build a strong and rich foundation for set theory.

## PUBLICATIONS

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- Altınok, M., Küçükaslan, M. & Kaya, U. (2021). Statistical extension of bounded sequence space. Communications Faculty of Sciences University of Ankara Series A1 Mathematics and Statistics,70 (1),82-99.DOI: 10.31801/cfsuasmas.736132
- Altınok, M., Kaya, U. & Küçükaslan, M. (2021).  $\lambda$ -Statistical supremum-infinum and  $\lambda$ -statistical convergence. Journal of Universal Mathematics ,4(1),34-41.DOI: 10.33773/jum.823084
- Altınok, M. , Küçükaslan, M. & Kaya, U. (2020).  $\lambda$ -Statistical extension of the bounded sequence space  $l_\infty$ . The Aligarh Bulletin of Mathematics Volume 39, Number 2, 119-142. ISSN: 0304-9787

## TALKS

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- Small Sets, 6-th Bahar Mathematics Meeting, Boğaziçi University      October 2019
- Statistical Extension of Bounded Sequence Space, 7-th Bahar Mathematics Meeting, Hacettepe University      March 2020
- Enlargement of bounded sequence space via natural density, 7-th IFSCOM Conference, Online      25-29 May 2021
- Gödel's Program and Generic Absoluteness, Logic Colloquium, Gdańsk      July 2025
- Generic Absoluteness and The Foundations of Set Theory, 1st Logic and Mathematics Workshop, Turkey      16-18 October 2025

## CONFERENCES AND WORKSHOPS

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- Mersin University Summer Workshop on Topology.      August 2021
- Mini workshop on Structural Reflection and HOD Conjecture by Joan Bagaria and Philipp Lücke. Gdańsk, Poland.      24-27 March 2025
- Roaming Logic Conference, Warsaw.      9-11 May 2025
- Gdańsk Logic Colloquium      2024-Present