

# Elif Uskuplu

Los Angeles, CA

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## Education

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- **University of Southern California** Sep 2019 --  
Ph.D. in Mathematics  
3.70/4.00
- **Koç University** Sep 2017 - Aug 2019  
M.S. in Mathematics  
3.99/4.00
- **Istanbul Bilgi University** Sep 2013 - July 2017  
B.Sc. in Mathematics  
3.65/4.00
- **Istanbul Technical University** Sep 2011 - June 2013  
Mathematical Engineering  
Left due to undergraduate transfer

## Publications

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- **QC-LDPC Codes from Difference Matrices and Difference Covering Arrays**  
Diane Donovan, Asha Rao, Elif Uskuplu, Emine S. Yazıcı, in IEEE Access, vol. 11, pp. 52141-52157, 2023, doi: 10.1109/ACCESS.2023.3279327
- **High-rate LDPC codes from partially balanced incomplete block designs**  
Diane Donovan, Aiden Price, Asha Rao, Elif Uskuplu, Emine S. Yazıcı, Journal of Algebraic Combinatorics, Jan 2022

## Achievements & Awards

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- Summer 2022 support by NSF grant DMS-1902092, the Army Research Office W911NF-20-1-0075, and Simons Foundation
- Research Support by the Air Force Office of Scientific Research under award number FA9550-21-1-0009
- The Scientific and Technological Research Council of Turkey (TUBITAK), ARDEB 1001 Research Project Scholarship, Grant Number: 116F166
- Outstanding Teaching Award, Koç University
- Turkish Math Society, Cahit Arf Scholarship
- Higher Education Student Student Loans and Dormitories Institution State Scholarship, Turkey
- İstanbul Bilgi University the Board of Trustee Scholarship

## Talks

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- **Cofibrancy of The Exo-type of Natural Numbers**  
2nd International Conference on Homotopy Type Theory, May 2023
- **Homotopy Type Theory vs Set Theory**  
GSU Research Seminars, Dec 2022
- **Proof Assistants: Agda for Beginners**  
SageDays Istanbul, August 2022
- **An Experiment with 2LTT Features in Agda**  
Workshop on Homotopy Type Theory/Univalent Foundation, July 31 - August 1, 2022
- **Formalization of 2LTT in Agda**  
MURI Meeting at CMU, July 2022
- **A Brief Introduction to Homotopy Type Theory**  
USC Math Grad Colloquium, Feb 2022

## Projects

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- **Formalization of 2LTT & Univalence Principle in Agda**  
github.com/ElifUskuplu/2LTT-Agda
- **Univalent Mathematics in Agda (contributor)**  
github.com/UniMath/agda-unimath

## Experiences

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- **University of Southern California** Sep 2019 - ---  
Teaching Assistant  
Courses: Fundamental Principles of Calculus, Calculus I, Theory of Numbers, Fundamental Concepts of Modern Algebra, Graduate Algebra, Fundamental Concepts of Analysis, Graduate Topology
- **Koc University** Sep 2017 - Aug 2019  
Teaching Assistant  
Courses: Intro to Symbolic Logic, Mathematics of Everyday Life, Finite Mathematics
- **Istanbul Bilgi University** Sep 2018 - Aug 2019  
Teaching Assistant  
Courses: Intuitive Set Theory, Analytic Geometry and Linear Algebra I, Advanced Calculus I, Topology, Linear Algebra, Probability and Statistics for Engineers and Scientists

## Participations

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- **Formalization of Mathematics (SLMATH)**  
June 05 - June 16, 2023
- **HoTT '23 and MURI '23 (joint event)**  
Carnegie Mellon University, 22-27 May, 2023
- **HoTTEST Summer School 2022**  
July - August, 2022 (online participation)
- **MURI Meeting '22**  
Carnegie Mellon University, June 2022
- **Logic and Higher Structures**  
Centre International De Rencontres Mathematiques, Feb 2022 (online participation)
- **MURI Meeting**  
Carnegie Mellon University, October 2021 (online participation)
- **Istanbul Design Theory Workshop**  
Koc University, Sep 2018
- **Workshop on Graph Theory and its Applications**  
Gebze Technical University, November 2017
- **Undergraduate and Graduate Summer School**  
Nesin Mathematical Village, June 2017
- **TMD Analysis Summer School**  
Feza Gursey Institute, July 2016
- **Logic Summer School**  
Feza Gursey Institute, August 2015
- **Philosophy and Mathematics Symposium**  
Yeditepe University, February 2014