Ella Hiesmayr

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Employment

2024-2026 **Postdoctoral researcher**, *CNRS* and *ENS Lyon*, France.
Supervisor: Prof. Alice Guionnet

Education

2018-2024 **PhD Studies in Statistics**, *University of California, Berkeley*, USA.
Advisors: Prof. Shirshendu Ganguly and Prof. Steven Evans
Thesis Title: Interactions in random structures

2017 **M.Sc. in Mathematics**, *Boğaziçi University*, Istanbul, Turkey.
Advisor: Prof. Ümit Işlak
Thesis Title: On asymptotics of two non-uniform recursive tree models

2013 **B.Sc. in Mathematics** , *University of Vienna*, Vienna, Austria.

Research Interests

Random graphs, random matrices, large deviations, spectral properties, mathematical biology, subsequence problems, random permutations

Publications/Preprints

2024 (with W. S. DeWitt, S. N. Evans and S. Hummel) *Mean-field interacting multi-type birth-death processes with a view to applications in phylodynamics*, Vol. 159, https://doi.org/10.1016/j.tpb.2024.07.002

2024 (with S. Ganguly and K. Nam) *Spectral large deviations of sparse random matrices*, Journal of the London Mathematical Society, Vol. 110, https://doi.org/10.1112/jlms.12954

2024 (with S. Ganguly and K. Nam) *Upper Tail Behavior of the Number of Triangles in Random Graphs with Constant Average Degree*, Combinatorica, Vol. 44, https://doi.org/10.1007/s00493-024-00086-3

2023 (with T. McKenzie) *The Spectral Edge of Constant Degree Erdős-Rényi Graphs*, https://arxiv.org/abs/2309.11007

2020 (with Ü. Işlak) *Asymptotic results on Hoppe trees and its variations*, Journal of Applied Probability, Vol. 57 (2), pp. 441 - 457, https://doi.org/10.1017/jpr.2020.12

2018 (with Ü. Işlak) *Some remarks on biased recursive trees*, https://arxiv.org/abs/1801.04617

Conference Publications

2015/2022 *Found in Translation, Multilingualism and Philosophy*, in *Critical Conversations in African Philosophy, Asixoxe - Let's talk*, edited by Alena Rettová, Benedetta Lanfranchi and Miriam Pahl, Routledge, New York

Popular Science Publications

2022 (with M. Arslan) *Rubik Küp*, Matematik Dünyası, Vol. 112, pp. 42-49, Türk Matematik Derneği, Istanbul

Fellowships, scholarships and awards

2022/2023 Citadel Securities Berkeley Fellowship, University of California, Berkeley

2021 Teaching Effectiveness Award, University of California, Berkeley

2020 Outstanding Graduate Student Instructor Award, University of California, Berkeley

2010, 2013 Performance Scholarship, University of Vienna

Talks and Posters

12/2024 *Spectral large deviations of sparse random matrices*, Probability Seminar, Aix Marseille Université

11/2024 *The spectral edge of Erdős-Rényi graphs with constant average degree*, Workshop - Random hyperbolic surfaces and random graphs, Centre international de rencontres mathématiques, Marseille

03/2024 *Mean-field interacting multi-type birth-death processes with a view to applications in phylodynamics*, Seminar on Stochastic Processes, Rice University, Houston, Texas

11/2023 *The spectral edge of Erdős-Rényi graphs with constant average degree*, Northeast Probability Seminar, New York University

09/2023 *Mean-field interacting multi-type birth-death processes with a view to applications in phylodynamics*, Probability Seminar, University of California, Berkeley

07/2023 *Edge eigenvalues and eigenvector localization in Erdős-Rényi graphs with constant average degree*, Conference on Stochastic Processes and Applications, University of Lisbon

09/2022 *Large deviations of the largest eigenvalue of sparse random graphs with non-Gaussian edge weights*, Graduate Student Probability Conference, University of Wisconsin, Madison

04/2022 *Tails of some non-linear observables in random graphs with constant average degree*, Probability Seminar, University of California, Berkeley

04/2022 *Tails of some non-linear observables in random graphs with constant average degree*, Probability Seminar, Purdue University, Indiana

03/2022 *The tail of the triangle count in Erdős-Rényi graphs with constant average degree*, Seminar on Stochastic Processes, Lehigh University, Pennsylvania

11/2021 *Large deviations of the largest eigenvalue of sparse graphs with non-Gaussian edge weights*, Northeast Probability Seminar, CUNY, New York

05/2018 *Stein's method and distributional approximations for hitting times*, Probability Days, IMBM, Istanbul

04/2018 *Spectral methods for mixing times of Markov chains*, Boğaziçi University, Istanbul

12/2017 *First moment problem for expected length of longest common subsequences in random permutations*, IMBM, Istanbul

05/2015 *Found in Translation, Multilingualism and Philosophy*, Asixoxe - Let's Talk!, SOAS, University of London

Summer Schools and Workshops

11/2024 Random hyperbolic surfaces and random graphs, Centre international de rencontres mathématiques, Marseille

10/2024 Algebraic Aspects of Random Matrices, Centre international de rencontres mathématiques, Marseille

06/2023 Probability meets Biology II, University of Bath, United Kingdom

08/2020 Graduate Remote Instruction Innovation Fellows Program, GSI Teaching & Resource Center, University of California, Berkeley, USA

07/2019 Data Science Workshop, GDSO, University of California, Berkeley, USA

01/2018 Random matrices and number theory, Nesin Mathematics Village, Izmir, Turkey

01/2018 Winter school on number theory and probability theory, Boğaziçi University, Istanbul, Turkey

08/2017 Mathematics summer school, Nesin Mathematics Village, Izmir, Turkey

Teaching Experience

2019-2024 **University of California, Berkeley**, *Statistics Department*, Graduate student instructor.
Stat 20 Introduction to Probability and Statistics
Stat 134 Concepts of Probability
Stat 150 Stochastic Processes
Stat 155 Game Theory
Stat 204 Probability for Applications (Graduate Level)
Stat 205B Probability Theory (Graduate level)
Stat 206 Advanced Topics in Probablity and Stochastic Processes (Graduate level)

2017-2018 **Koç University**, *Mathematics Department*, Teaching assistant.
Math 107 Introduction to Linear Algebra
Math 531 Real Analysis

07/2017 **Feza Gürsey Summer School**, Teaching assistant.
Analysis

2013/14 **University of Vienna**, *Philosophy Department*, Teaching assistant.
Introduction to Theoretical Philosophy

Other working experience

Summer 2022 **University of Illinois at Urbana-Champaign**, *School of Molecular and Cellular Biology*, Internship Program of the Institute for Mathematical and Statistical Innovation.
Project: Discovery of novel CNF1-like proteins
Supervisors: Dr. Wilson and Dr. Ho

Service

2021-2023 **Student Probability Seminar**, *University of California, Berkeley*.
Co-organizer with Adam Q. Jaffe

2018-2023 **Statistics Graduate Student Association**, *University of California, Berkeley*.
Co-president with Daniel Soriano 2020/21
Social Committee, Graduate Assembly Representative, Student Seminar, Website Committee

Languages

German, Fluent.
English, Fluent.
French, Advanced.
Turkish, Advanced.