

MATTHEW ESMAILI MALLORY

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EDUCATION

PhD in Statistics, Harvard University 2022–2027
Advised by Dr. Morgane Austern

B.S. in Mathematics, B.S. in Statistics, University of California, Los Angeles 2018–2022
Honors Collegium, Honors in Mathematics, 3.9 GPA

RELEVANT COURSEWORK

Mathematics Real & Complex Analysis, Measure Theory, Group Theory, Ring Theory, Galois Theory, Linear Algebra, Differential Geometry, Topology, Ordinary & Partial Differential Equations, Random Matrix Theory, Fourier Analysis, Multivariate Differential & Integral Calculus

Statistics Probability Theory, Mathematical Statistics, Linear Modeling, Data Analysis, Regression, Modeling, Data Mining, Experimental Design, Computational Statistics, Machine Learning, Monte Carlo Methods, Optimization, Statistical Consulting, R, Python

RESEARCH

High-Dimensional Poisson Limit Theory, Harvard University

- Currently researching Poisson Limit Theory in dependent & high-dimensional settings under Dr. Austern
- Utilizing proof techniques such as Stein’s Method for exchangeable pairs and size-bias couplings

Theoretical Aspects of Deep Learning, Cornell University [Article](#)

- Researched arbitrary-depth universal approximation theory under Dr. Alex Townsend
- Proved a constant-width quasi-universal approximation theorem for operator neural networks

Independent Research in Asymptotic Statistics, UCLA [Article](#)

- Studied large sample theory, approaching theoretical statistics through real analysis & measure theory
- Worked with Dr. Tsiang of the Statistics department, applying research toward real-life data analysis in R

Independent Research in TDA & Algebraic Statistics, UCLA

- Researched topological data analysis and persistent homology, applying techniques to real world data
- Explored the novel field of algebraic statistics, applying algebraic geometry to statistical models

LEADERSHIP & WORK HISTORY

Teaching Fellow, Harvard University Aug 2023 - present

President, UCLA Undergraduate Mathematics Students Association Mar 2019 - June 2022

Undergraduate Researcher, UCLA Mathematics & Statistics Departments Jan 2021 - June 2021

Mathematics Docent, Olga Radko Endowed Math Circles July 2020 - Feb 2022

Linear Algebra Teaching Assistant, UCLA Learning Assistant Program Nov 2020 - June 2021

Resident Technology Supervisor, UCLA Learning Centers Sep 2019 - Jan 2021

Math Instructor, Kumon Institute May 2017 - Jan 2018

Graphic Designer & Animator, Fiverr Dec 2017 - May 2021

SKILLS

English, Spanish, Persian | R, LaTeX, Python, Julia | Adobe PhotoShop, Illustrator, Premiere Pro, & After Effects