Rahul Rajkumar

rahulrajkumar.github.io

EDUCATION

University of California Riverside   Riverside, CA
Ph.D. in Mathematics   Expected May 2025
- Research Areas: Probability Theory and Stochastic Processes, p-adic Analysis

M.S. in Applied Mathematics   June 2023

New York University   New York City, NY
B.A. in Mathematics   May 2020

RESEARCH EXPERIENCE

University of California Riverside, Department of Mathematics   Riverside, CA
Graduate Student Researcher   January 2022 – Present
- Currently investigating p-adic diffusion processes and their decompositions
- Contrasted diffusion processes in finite-dimensional p-adic vector spaces respecting various symmetries

University of California Riverside, Department of Mathematics   Riverside, CA
Graduate Research Assistant   May 2020 - June 2023
- Designed, implemented, and supported a robust Python pipeline for single cell RNA sequencing data processing
- Initialized a MATLAB codebase to simulate diffusion of cell genotypes based on sequencing data

New York University, Courant Institute of Mathematical Sciences   New York, NY
Summer Undergraduate Research Experience Participant
- Investigated branching process models

SELECT PUBLICATIONS AND PRESENTATIONS

- **Rajkumar, Rahul**, and David Weisbart. "Components and Exit Times of Brownian Motion in Two or More p-Adic Dimensions." arXiv, October 28, 2022. http://arxiv.org/abs/2210.16429.
- "Components and Exit Times of Brownian Motion in Multiple p-Adic Dimensions," Joint Mathematics Meeting 2023 AMS Contributed Paper Session on Probability Theory and Stochastic Processes, January 6, 2023
- "Components and Exit Times of Brownian Motion in Multiple p-Adic Dimensions (Extended)," Joint Mathematics Meeting 2023 AMS Special Session on Advances in Markov Models: Gambler's Ruin, Duality and Queueing Applications, January 7, 2023
- "Diffusion Experiments in a p-adic Universe," Virtual Research Seminar on Non-Archimedean Analysis and Mathematical Physics (UT RGV), September 21, 2022

TEACHING

University of California Riverside, Department of Mathematics   Riverside, CA
Graduate Teaching Assistant   September 2020 - Present
- Taught discussion sections for various undergraduate mathematics courses
- Tutored students individually during office hours.

University of California Riverside, Department of Mathematics   Riverside, CA
Graduate Primary Instructor (Associate-In)   September 2022 - December 2022
- Taught Math 5A, a new course in precalculus supported by the California Learning Lab

AWARDS

Jones Fellowship (2023 – 2024)   University of California, Riverside
Chancellor's Distinguished Fellowship   University of California, Riverside