Rahul Rajkumar

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Education

Ph.D. Candidate in Mathematics Expected Graduation: Spring 2025
University of California, Riverside
Concentrations: Probability Theory, Stochastic Processes, Non-Archimedean Analysis
Thesis Title: TBD
Advisor: David Weisbart
M.S. in Applied Mathematics Spring 2023
University of California, Riverside
B.A. in Mathematics Spring 2020
New York University

Publications

Rajkumar, Rahul, and David Weisbart. "Components and Scaling Limits of Brownian Motion in $\mathbf{Q}_p^d$ with Multiplicative Structures." *In Progress.*

Pierce, Tyler, Rahul Rajkumar, Andrea Stine, David Weisbart, and Adam M. Yassine. "Brownian Motion in a Vector Space over a Local Field Is a Scaling Limit." Expositiones Mathematicae 42, no. 6 (December 1, 2024): 125607. https://doi.org/10.1016/j.exmath.2024.125607.

Rajkumar, Rahul, and David Weisbart. "Components and Exit Times of Brownian Motion in Two or More P-Adic Dimensions." Journal of Fourier Analysis and Applications 29, no. 6 (November 20, 2023): 75. https://doi.org/10.1007/s00041-023-10053-z.

Presentations

Invited

"Diffusion Experiments in a p-adic Universe," Virtual Research Seminar on Non-Archimedean Analysis and Mathematical Physics, University of Texas Rio Grande Valley, September 21, 2022.

Contributed

"Elements and Applications of p-adic Analysis," 48th Annual New York State Regional Graduate Mathematics Conference, Syracuse University, April 1, 2023.

"Components and Exit Times of Brownian Motion in Multiple p-Adic Dimensions (Extended)," AMS Joint Mathematics Meeting Special Session on Advances in Markov Models, Boston, January 7, 2023.

"Components and Exit Times of Brownian Motion in Multiple p-Adic Dimensions," AMS Joint Mathematics Meeting Contributed Paper Session on Probability Theory and Stochastic Processes, Boston, January 6, 2023.

Awards and Honors

M.M. Rao Award for Probability Theory or Functional Analysis ($10,000) 2023 – 2024

UC Riverside Jones Fellowship ($3,500) 2022 – 2023

UC Riverside Chancellor's Distinguished Fellowship 2020 – 2025

Service, Outreach, & Miscellany

Undergraduate Research Experience Mentor Spring 2024

Led an Undergraduate Research Experience (Math 197) on the topic of Brownian motion on manifolds and Varadhan's Formula in the context of Varadhan's 1967 paper "On the Behavior of the Fundamental Solution of the Heat Equation with Variable Coefficients"

UC Riverside AMS Student Chapter Treasurer 2023 – 2025

UC Riverside Pacific Math Alliance Graduate Mentor 2022 – 2023

CLL-New Math Gateway Supplementary Instruction Developer Summer 2022

Citizenship: USA

Musical Instruments: Saxophone, Bassoon, Clarinet

UC Riverside Wind Ensemble Bassoonist

Teaching Experience

Instructor (UC Riverside)

Math 9B	First-Year Calculus	Summer 2024
Math 5A	The Principles of Calculus I	Fall 2022

Teaching Assistant (UC Riverside)

Math 5A	The Principles of Calculus I	Fall 2024
Math 5C	The Principles of Calculus III	Spring 2024
Math 7A	Calculus for Life Sciences	Spring 2024
Math 6B	Precalculus II	Winter 2024
Math 6A	Precalculus I	Winter 2024
Math 5A	The Principles of Calculus I	Fall 2023
Math 7A	Calculus for Life Sciences	Spring 2023
Math 45/EE 20A	Introduction to Ordinary Differential Equations	Spring 2023
Math 9A	First-Year Calculus	Winter 2023
Math 46	Introduction to Ordinary Differential Equations	Winter 2023
Math 149B	Probability and Mathematical Statistics	Winter 2023
Math 11	Introduction to Discrete Mathematics	Summer 2022
Math 149A	Probability and Mathematical Statistics	Summer 2022
Math 9A	First-Year Calculus	Spring 2022
Math 46	Introduction to Ordinary Differential Equations	Spring 2022

Math 153	History of Mathematics	Spring 2022
Math 11	Introduction to Discrete Mathematics	Winter 2022
Math 31	Applied Linear Algebra	Fall 2021
Math 132	Linear Algebra II	Spring 2021
Math 149B	Probability and Mathematical Statistics	Spring 2021
Math 121	Game Theory	Winter 2021
Math 6A	Introduction to College Mathematics for the Sciences	Winter 2021
Math 5	Precalculus	Fall 2020
Math 151A	Advanced Calculus (Real Analysis)	Fall 2020