

Subhasish Mukherjee

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EDUCATION

University of Chicago, Chicago, IL	Sep 2024 — May 2029
PhD in Mathematics	Advisor: Amie Wilkinson
Carnegie Mellon University, Pittsburgh, PA	Aug 2020 — Dec 2023
BS/MS in Mathematical Sciences	GPA: 3.96/4.00
Thesis Title: On a class of anisotropic Sobolev space, and an extension of an elementary integral	Advisor: Ian Tice

RESEARCH

Subhasish Mukherjee. *Exact Dimensionality of Stationary Measures for Random Diffeomorphisms with $\lambda_{\text{top}} = \lambda_{\text{bot}} < 0$* . Preprint, 2026.

Subhasish Mukherjee and Ian Tice. *On a Scale of Anisotropic Sobolev Spaces. Communications on Pure and Applied Analysis* 23 (2024), no. 9, 1240–1260. doi:10.3934/cpaa.2024055; arXiv:2312.06044.

AWARDS

Barry Goldwater Scholarship	2023
National scholarship of \$7500 given to 412 college students in America “for a strong commitment to a research career in the natural sciences, mathematics and engineering; an effective display of intellectual intensity in the sciences, mathematics and engineering; and potential for a significant future contribution to research in their chosen field.”	
Benjamin A. Blander Prize	2024
Scholarship “awarded to an outstanding incoming graduate student in the Department of Mathematics” at UChicago.	
Knaster Scholarship	2021 — 2024
Half tuition scholarship given to single sophomore in the CMU math department “in recognition of outstanding abilities in mathematics in addition to a fine record of academic and leadership achievements.”	
Andrew Carnegie Society Scholar	2024
CMU scholarship of given to 40 seniors for “high standards of academic excellence combined with volunteerism, leadership, and involvement in student organizations.”	
Richard A. Moore Award	2023
Roger N. Pedersen Memorial Award	2022
Eagle Scout, Troop 368	2020
Union County Magnet High School Excellence Awards, Mathematics and Physics	2020

OTHER RESEARCH AND READING

Relationships between Lyapunov exponents, dimension, and entropy	University of Chicago
<i>with Dr. Amie Wilkinson</i>	Sep 2024 — Present
Reading and research examining papers of Ledrappier-Young, and others along with relationships in geometric measure theory to examine relationships between metric entropy, dimension theory, and Lyapunov exponents.	
Hyperbolic geometry and dynamics of homogeneous spaces	University of Chicago
<i>with Dr. Alex Eskin</i>	Jan 2025 — Feb 2025
Reading on hyperbolic geometry and Fuchsian groups, following the last chapters of Einsiedler and Ward.	
Extending the Cauchy integral to locally convex vector spaces	Carnegie Mellon University
<i>with Dr. Ian Tice</i>	June 2023 — September 2023
Research in topology and function spaces. Using tools from uniform spaces and finitely additive measure spaces to define an integral for functions taking values in locally convex spaces.	
Background Modeling for double Higgs production	Carnegie Mellon University
<i>with Dr. John Alison and Tudor Manole</i>	June 2021 — September 2021
Interdisciplinary research in particle physics and statistics, using machine learning and optimal transport methods to analyze decay paths of the Higgs boson. I vectorized parts of the codebase.	

TEACHING

Calculus II Instructor , <i>University of Chicago</i>	Fall 2026
Functional Analysis College Fellow , <i>University of Chicago</i>	Spring 2026
Differential Equations College Fellow , <i>University of Chicago</i>	Winter 2026
Graduate Functional Analysis Grader , <i>University of Chicago</i>	Winter 2026

Complex Analysis College Fellow , <i>University of Chicago</i>	Fall 2025
Abstract Harmonic Analysis Lecturer/Course Organizer , <i>Carnegie Mellon University</i>	Spring 2024
Organized by myself and gave 2 hours per week lectures and wrote biweekly homeworks for a graduate level harmonic analysis course, under the supervision of Dr. Ian Tice.	
Math Studies Analysis I and II Teaching Assistant , <i>Carnegie Mellon University</i>	Fall 2023 & Spring 2024
Vector Analysis Teaching Assistant , <i>Carnegie Mellon University</i>	Spring 2023
Matrix Theory Teaching Assistant , <i>Carnegie Mellon University</i>	Fall 2021 & Fall 2022

MENTORSHIP

UChicago REU

- Summer 2026; Zerlina Yau; On the convergence of Fourier series
- Summer 2026; Eamonn Keane; Hausdorff measure, Hausdorff dimension, and the area formula
- Summer 2026; Kevin Yu; Probability theory and the martingale convergence theorem
- Summer 2025; Mel Xiao; Extending the Cauchy Integral
- Summer 2025; Peter Jiang; Relationships between measure and Baire category on the real line
- Summer 2025; Zach McCarthy; The Banach-Tarski paradox and amenable groups

UChicago DRP

- Spring 2026; Filippos Tsoukis; Interpolation theory of Lorentz spaces
- Winter 2026; Julian Hovanec; Descriptive set theory
- Winter 2026; Charles Hammack; Abstract harmonic analysis

SUMMER SCHOOLS/CONFERENCES

Dynamics in Machine Learning/AI 2026, SLMATH summer school at IBM Yorktown - Participant
Beyond Uniform Hyperbolicity 2025, ICTP - Participant
Dynamics of Higher Rank Lie Groups 2025, SLMATH summer school at Berkeley - Participant

EXPERIENCE

Course Design and Grading for Mathematics and CS of Machine Learning Courses August 2023 — Present
Carnegie Mellon University Pittsburgh, PA

Mathematics and computer science knowledge expert. Wrote practice questions, evaluated course design and gave key insights in improving course design, communicated with course staff to make course better.

Human Frontier Collective Generative AI Specialist - Mathematics April 2025 — Jan 2026
Human Frontier Collective Remote

Consulting on safety and reliability, and training generative AI for use to aid mathematics research.

Grassroots Referee Various locations
United States Soccer Federation 2016 — Present

Refereed 120+ youth and adult soccer games. Managed communication and safety with players, coaches, and referee team.

SELECTED COURSES

Graduate Courses

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| <ul style="list-style-type: none"> • Functional Analytic Methods in Dynamics • Optimal Transport and Applications • Arithmetic Statistics • Dynamics of Polish Groups • Advanced Real Analysis • Descriptive Set Theory • Analytic and Probabilistic Methods in Convex Geometry • Model Theory | <ul style="list-style-type: none"> • Probability • Functional Analysis • General Topology • Complex Analysis • Measure and Integration • Introduction to Differential Equations • Convex Optimization • Differential Topology • Algebraic Topology |
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