

Curriculum Vitae
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EDUCATION

University of Wisconsin - Madison - Ph.D in Mathematics	Expected 2027
University of Chicago - B.A. in Mathematics with Honors, Minor in Computer Science	2022

RESEARCH INTERESTS

Harmonic analysis and geometric measure theory.

PAPERS

Failure of weak-type endpoint restriction estimates for quadratic manifolds.	2024
Submitted. Available at: https://arxiv.org/abs/2407.15034 .	

CONFERENCES ATTENDED

2024 Prairie analysis seminar.
2024 Hausdorff school “Uniformity and Stability of Oscillatory Integrals”.
2024 SLMath special geometric structures and analysis summer graduate school.
2024 Madison lectures in harmonic analysis.
2024 Pittsburg lectures in analysis and number theory.

TALKS

Keakeya-type problems in higher (co)dimensions.	<i>UW-Madison specialty exam. 2024.</i>
Failure of weak-type endpoint restriction estimates for quadratic manifolds.	<i>Prairie analysis seminar contributed talk. 2024.</i>
Fractal geometry and the problem of measuring coastlines.	<i>Madison math circles. 2024.</i>
Structural properties of sticky Keakeya sets	<i>UW-Madison graduate analysis seminar. 2024</i>
The bilinear Hilbert transform along curves, after Xiaochun Li.	<i>Madison lectures in harmonic analysis summer school. 2024.</i>
Failure of weak-type endpoint restriction estimates for quadratic manifolds.	<i>UW-Madison graduate analysis and PDEs seminar. 2024.</i>
A random graph “construction” for k-universal graphs.	<i>UW-Madison AMS Student Chapter seminar. 2024.</i>
The point-to-set principle.	<i>UW-Madison graduate analysis seminar. 2023.</i>
Pisot numbers and the singular sets of Bernoulli convolutions.	<i>UW-Madison graduate analysis seminar. 2022.</i>

RESEARCH EXPERIENCE

University of Wisconsin - Madison

2024-2023 Reading course in harmonic analysis focusing on restriction theory, focusing on restriction and Bochner-Riesz operators to manifolds of intermediate dimension and connections with geometric measure theory.
2023 Reading course in dynamics focusing on Fuchsian groups.
2023 Review of *Multi-linear forms, graphs, and L^p improving measures on \mathbb{F}_q^d* for topics in harmonic analysis course.

University of Chicago

2021 Expository paper on optimal constants in the Poincaré inequality over convex domains for topics in analysis course.
2020 University of Chicago REU on stochastic processes and geometry including expository paper on the Schramm-Loewner evolution.

TEACHING

University of Wisconsin - Madison

FA 2024 Head TA for MATH 320 - Linear Algebra and Differential Equations.

SU 2024 Instructor for analysis qualifying exam preparatory course.

FA 2023 Head TA for MATH 221 - Calculus and Analytical Geometry I

SP 2023 TA for MATH 211 - Calculus I

FA 2022 TA for MATH 221 - Calculus and Analytical Geometry I

University of Chicago

WI 2021 TA for MATH 16210 - Honors Calculus II (IBL)

FA 2020 TA for MATH 16110 - Honors Calculus I (IBL)

MENTORING

University of Wisconsin - Madison

FA 2024 Madison math circle organizer.

Organized weekly talks for Madison middle and high school students.

SP 2024 Qualifying exam review session instructor.

Lead biweekly review sessions for students preparing to take the analysis qualifying exam.

2023-2024 Directed reading project mentor

SP 2024 Mentor for two undergraduates for a reading project on stochastic processes.

FA 2023 Mentor for two undergraduates for a reading project on multivariable analysis.

SU 2023 Mentor for UW-Madison REU in analysis.

Mentored a group of six undergraduates in research related to polynomial approximation.

FA 2022 Undergraduate Mentorship Program.

Mentored a group of five undergraduates in career and educational decisions.