

# Rohan Kapoor

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## EDUCATION

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### Dartmouth College

*PhD in Mathematics: advised by Dimitrios Giannakis*

Hanover, NH

Sep 2024-Present

### University of Chicago

*BA in Mathematics (Honors), Minor in Physics*

Dean's List 2021-22

Chicago, IL

Sep 2019-June 2023

### National Public School Indiranagar

*Science with Computer Science: 96.6% in Board Examinations*

Bangalore, India

April 2019

## EXPERIENCE

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### Exponent Fellow

*National Museum of Mathematics*

Aug 2023 - Apr 2024

New York City, NY

- Selected for a year-long fellowship as a museum docent and math education.
- Work with leading mathematicians on research and outreach.
- Visited and led math lessons at public schools, organized 200+ person ticketed public events, trained new employees and volunteers

### Quantitative Trading Intern

*IMC Trading*

Summer 2022

Chicago, IL

- Worked on project on equity options market making and wholesaling
- Used Pandas and SQL to analyze gigabytes of trading data to find profit-making improvements

### Research Associate

*Ferguson Lab, Pritzker School of Molecular Engineering*

Jan 2021-Sep 2021

UChicago

- Applied molecular dynamics and active learning ML frameworks to solve inverse design problems in computational drug design.
- Read previous literature, worked independently to gather data and present the findings.

### Summer Research Intern

*Strand Life Sciences*

Jun-Sep 2020

Bangalore, India

- Implemented a within-exome approach to detecting Copy Number Variations (CNVs) to more efficiently analyze large genetic data sets obtained from Next Gen Sequencing(NGS).

## ACTIVITIES AND LEADERSHIP

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### Organizer

*Graduate Student Seminar*

Sep 2024-Present

Dartmouth

- Organize weekly research talks by graduate students, arrange food for every talk
- Worked with faculty to introduce new programming for the graduate student open house

### President, Founding Member

*UChicago Applied Math Club*

Sep 2020-Present

UChicago

- Networked with leading faculty and grad students to revive and raise funding for a long-defunct applied math club
- Pursued an intensive marketing strategy to get turnout for virtual events: oversaw a 200% increase in turnout for talks and saw larger turnouts over Zoom compared to similar STEM RSOs.

### Varsity Debater, Chancellor

*Chicago Debate Society*

Sep 2019- Present

UChicago, IL

- Compete almost every weekend during the school year. Represented UChicago at the World Universities Debating Championships (WUDC) in 2021.
- Ranked 10th best speaker in North America at North American Debate Championships, and 13th best team at American Parliamentary Nationals
- Serve as Chancellor: in charge of alumni relations and recording team history, and a Training Leader for incoming freshmen debaters.

## TEACHING AND OUTREACH

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### Mentor, Directed Reading Program

*Dartmouth Math Department*

- Mentored Paul Waxman '27 on AI Safety and Alignment Research

Winter 2025

*Hanover, NH*

### Graduate Teaching Assistant

*Dartmouth Math Department*

- Held weekly tutorials for Linear Algebra With Applications (Math 22)

Fall 2024

*Hanover, NH*

### Physics Tutor

*UChicago Physics Department*

- Held office hours and problem sessions for first-year Honors Mechanics, E&M and Waves, Optics and Thermodynamics.

Sep 2021-June 2022

*Chicago, IL*

### Teaching Assistant

*UChicago Math Department*

- Teaching Assistant for first-year introductory calculus course
- Led three hours of problem sessions and tutorials every week.
- Graded proof-based problem sets for Real Analysis I and Abstract Linear Algebra

Sep 2021-Jun 2022

*Chicago, IL*

### Debate Coach

*Indian Schools Debating Society*

- Coached Team India White, a development squad for the Indian national team. Taught specific debate skills and broad-based politics, philosophy and economics knowledge on how the world works
- My students achieved success at international debate competitions such as Oxford-WSDC.

Apr-Aug 2021

*Chennai, India*

### Math Camp Counsellor

*Young Scholars Programme*

- Worked with the UChicago Math Department for their annual extracurricular mathematics summer camp. Used the features of Zoom to effectively teach mathematics in an online setting.
- Taught Number Theory to 9th and 10th graders, using an inquiry-based, discussion-driven approach to mathematics.

Jun-Aug 2020

*Chicago, IL*

## PUBLICATIONS

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1. Y. Ma, **R. Kapoor**, B. Sharma, A.P. Liu, and A.L. Ferguson "Computational design of self-assembling peptide chassis materials for synthetic cells" *Mol. Syst. Des. Eng.* (2022)

## CONFERENCES ATTENDED, SEMINAR TALKS

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An Introduction to Random Matrix Theory, *Dartmouth Graduate Student Seminar, Jan 2025*

A Computability-theoretic Approach to the Kakeya Conjecture, *Dartmouth Graduate Student Seminar, November 2024*

Funded attendee, NSF-CBMS Conference on Algorithmic Fractal Dimension, *May 2024*

## ACADEMIC HONORS

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**International Theoretical Physics Olympiad:**UChicago representative at 2022 edition

**Joint Entrance Exam(JEE Advanced):** All India Rank 2715 For admission to IITs, written by 1 million people

**KVPY:** All India Rank 203, awarded scholarship to pursue further studies in STEM up to PhD level

**National Talent Search Examination:** National Level Scholar, 1 of 700 chosen out of 1 million in a two-stage process.

**Indian National Mathematical Olympiad Training Camp:** by invitation after the Regional Math Olympiad. Top 40 in Karnataka state.

## SKILLS AND INTERESTS

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**Languages:** English, Hindi, some Sanskrit

**Computer Languages:** Python(scikit-learn, pandas, mdtraj), R, Unix Shell, SQL

**Skills:** Quantitative problem-solving, Teaching, Public speaking & Scientific explanation , Scientific literacy

**Interests:** Formula 1, Mountaineering, Rock climbing, Fantasy and Science Fiction novels