

# Sayandeep Sarkar

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I am a 2nd year Graduate student (PhD) supervised by Prof. Andrei Tarfulea, Department of Mathematics, Louisiana State University.

## Interests

Boltzmann Equation, Kinetic theory, Elliptic and Parabolic Differential Equations, Mathematical Physics

## Education

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|---|-----------------------------|
| <b>Louisiana State University</b><br>Ph.D. in Mathematics                                 | <b>2024-</b><br>4.18        |
| <b>Indian Institute of Technology, Kanpur</b><br>Masters of Science (2-yr) in Mathematics | <b>2022-2024</b><br>8.8/10  |
| <b>Ramakrishna Mission Vidyamandira</b><br>Bachelor of Science in Mathematics             | <b>2019-2022</b><br>9.34/10 |

## Experience

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| <b>Teaching</b><br><i>Math 1020/21 (College Algebra)</i>  | <i>F 2025</i>                                    |
| <b>Grading/Tutoring</b><br><i>Math Lab</i><br><i>Math 1552 (Analytic Geometry and Calculus II)</i><br><i>Math 1550-5 (Differential and Integral Calculus)</i><br><i>Math 1552 (Analytic Geometry and Calculus II)</i> | <i>F 2025</i><br><i>Sp 2025</i><br><i>F 2024</i> |
| <i>Subject matter expert at Chegg Inc.</i>  | <i>2022-2024</i>                                 |

## Dissertations, Projects

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| <b>Indian Institute of Technology, Kanpur</b>              |                     |
| ✧ Integral solution for electromagnetic scattering problem | Prof. Akash Anand   |
| ✧ Schauder Estimate of Elliptic PDEs                       | Prof. Adi Adimurthi |
| <b>Ramakrishna Mission Vidyamandira</b>                    |                     |
| ✧ Wormhole solution on $f(R)$ gravity theory               | Prof. Saugata Mitra |

## Technical Skills

Familiar with the programming languages Matlab, Python, C++ (GSL).

## Talks

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|--|------------|
| ✧ Fractional Laplacian on water wave model and crystal dislocation model | IIT Kanpur |
| ✧ Density of $C_0^\infty(\mathbb{R}^n)$ in $W^{s,p}(\mathbb{R}^n)$       | IIT Kanpur |

## Conferences, Workshops, Seminars, Summer Schools

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- ✧ Attended workshop on “Kinetic Theory: Novel Statistical, Stochastic and Analytical Methods” held at SLmath University of California, Berkeley, from 20th Oct to 24th August, 2025
- ✧ Attended workshop on “Geometry, Analysis, Mathematical Physics” held at NISER Bhubaneswar, from 24th July to 2nd August, 2023
- ✧ Presented paper entitled “Tensor Calculus and its Application in Wormhole Geometry”, in Department of Mathematics, Ramakrishna Mission Vidyamandira, on 4th June, 2022.
- ✧ Participated in presentation competition in Ramakrishna Mission Vidyamandira, held in 2022 on applied mathematics (topic : wormhole), organized by department of mathematics, Ramakrishna Mission Vidyamandira.
- ✧ Participated in the Mathematical Training and Talent Search Program in 2021, held online.

## Awards, Achievements

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- ✧ INSPIRE scholar since 2019 to 2024.
  - ✧ Qualified GATE (2024) with AIR 418.
  - ✧ Qualified CSIR-NET JRF (June 2022) with AIR 159.
  - ✧ Awarded with Aryabhata silver medal from Ramakrishna Mission Vidyamandira for securing 2nd rank in B.Sc.
  - ✧ Qualified JAM 2022, with AIR 1164.
  - ✧ Qualified JEE mains, WBJEE in 2019.
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