

Sayantika Mondal

PHD STUDENT · MATHEMATICS

Graduate Center, City University of New York

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Education

The Graduate Center, City University New York

New York, USA

2ND PHD IN MATHEMATICS

August 2020 - Present

Advisor: Prof. Ara Basmajian

Indian Institute of Science Education and Research, Pune

Pune, India

5 YEAR INTEGRATED BS-MS

August 2015 - June 2020

- CGPA - 9.3
- Graduated with Distinction
- Courses (Mathematics) - Single and Multi Variable Calculus, Introduction to Proofs, Linear Algebra, Basic Structures in Mathematics, Probability and Statistics, Analysis, Group Theory, Point Set Topology, Combinatorics, Complex Analysis, Calculus on Manifolds, Rings and Modules, Fourier Analysis, Graph Theory, Algebraic Topology, Measure Theory, Galois theory, ODE, Representation Theory, Differential Geometry, Algebraic Number Theory, Cryptography, Functional Analysis

DAV Model School, IIT, Kharagpur

West Bengal, India

2015

- 12 th Grade | Percentage- 95.2
- 10 th Grade | CGPA - 10

Projects

Contact Structures and foliations via open books

Australian National University

MATERS THESIS · DR. JOAN LICATA

May, 2019 - May 2020

- Aim: To understand relations between contact structures and foliations via open book decompositions.

Teichmüller Theory

IISER, Pune, India

SEMESTER PROJECT · DR. CHITRABHANU CHAUDHURI

Aug, 2018 - Apr, 2019

- Aim: To learn about Teichmüller Spaces via hyperbolic geometry.

Formalization of Quasi Isometries

Universität Regensburg, Germany

DAAD-WISE SUMMER INTERNSHIP · DR. CLARA LÖH

May, 2018 - Jul, 2018

- Read: Introduction to Geometric Group Theory by Clara Löh.
- Learnt to use Isabelle to check proofs and formalised theorems about quasi isometries using Isabelle.

Differential Topology

IISER, Pune, India

SEMESTER PROJECT · DR. VIVEK M. MALLICK

Jan, 2018 - Apr, 2018

- Read: Differential Topology by Alan Pollack and Victor Guillemin. (First 2 chapters).

Quantum Algorithms and their application in Cryptography

IISER, Pune, India

SEMESTER PROJECT · DR. AYAN MAHALANOBIS

Aug, 2017 - Nov, 2018

- Read : Quantum Computer Science by N David Mermin.

Application of Number Theory in Coding Theory and Cryptography

HRI, Allahabad, India

SRFP - INDIAN ACADEMY OF SCIENCES · PROF. B. RAMAKRISHNAN

May, 2017 - Jun, 2017

- Read: A First Course In Coding Theory by Raymond Hill.
- An Introduction To Mathematical Cryptography by Jeffrey Hoffstein, Jill Pipher and Joseph H Silverman.
- A Course In Number Theory And Cryptography by Neal Koblitz.

Diffusion in Ehrenfest Gas

BARC, Mumbai, India

NIUS PHYSICS PROJECT · DR. SUDHIR R. JAIN

May, 2016 - Dec, 2017

- The main objective is to determine diffusion coefficient of the Ehrenfest Model.
- Also analyzing relation between shape of reflectors and diffusion rates.

Introduction to Cryptography

SUMMER PROJECT · DR. SOUMEN MAITY

IISER, Pune, India

Jul, 2016

- Read : Introduction to Cryptography by Johannes Buchmann (few chapters).

Ecocriticism

SUMMER PROJECT · DR. POOJA SANCHETI

IISER, Pune, India

May, 2016 - Jun, 2016

- Ecocritical analysis of Amitava Ghosh's novel "The Hungry tide".
- Trying to understand the relationship between conservation and humanity.
- Read: Ecocriticism by Greg Garrad.

Achievements

2019	Future Research Talent Fellowship	<i>ANU, Australia</i>
2018	DAAD WISE Summer Research Fellowship	<i>UR, Germany</i>
2018	SN Bose Fellowship (Nominated)	
2017	Science Academies' Summer Research Fellowship	<i>HRI, Allahabad</i>
2016	National Initiative on Undergraduate Science(NIUS) Fellowship	<i>HBCSE(TIFR)</i>
2014	Kishore Vaigyanik Protsahan Yojna (KVPY) Fellowship-SX (Rank- 888)	
2014	Qualified National Standard Examination in Chemistry	
2014	Qualified National Standard Examination in Biology	
2012	Australian Mathematics Competition(Certificate of Credit)	
2012	National Standard Examination in Junior Science (Top 10%)	

Workshops and Camps Attended

2018	Workshop on Volume Conjecture and Related Topics in Knot Theory	<i>IISER, Pune</i>
2017	Summer Program In Mathematics	<i>HRI, Allahabad</i>
2015	National Science Camp (Vijyoshi)	<i>IISc, Bangalore</i>
2012	RMO Training Camp	<i>ISI, Kolkata</i>
2012	Pre RMO Training Camp	<i>IIT, Kharagpur</i>

Extracurricular Activity

- Current organizer of the Graduate student colloquium at Graduate Center.
- Part of the Geometry and topology seminar group at CUNY and an active speaker.
- Part of the Hyperbolic seminar group and Teichmüller theory reading group.
- I help mentor and guide undergraduates especially from India to navigate research and grad school applications abroad.
- I have pursued Fine Arts, Bharatnatyam and Recitation for around 15 years and have obtained Diploma in them from Pracheen Kala Kendra (National Board).
- Received first prize in Essay writing competition as a part of International Workshop on Biodiversity and Climate Change, 2010 at IIT Kharagpur.
- Received Honorable Mention in All India Essay Writing Competition organised by UNIC and SRCM in 2011, 2012 and 2013.
- I was the Coordinator of the Mathematics Club at IISER Pune (2017-2018).
- Served as the Mimamsa Publicity Coordinator (2017).
- I'm a part of the Math question making team for Mimamsa - A national level science quiz for undergraduates conducted by IISER Pune.
- Served as the Head Girl (2014-2015) and House captain (2013-2014) of my school.
- Won 1st prize in 800m (interschool) and ran marathons