

MAITREYO BHATTACHARJEE

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[Google Scholar](#) ◊ [LinkedIn](#)

EDUCATION

University of Florida, Gainesville

Fall 2025-

Incoming Graduate student, Department of Mathematics

Indian Association for the Cultivation of Science (IACS)

2020- 2025 (*expected*)

Semester 10, Integrated B.S.-M.S. (Major - Mathematics)

CGPA - 7.64/10

MS Thesis - Some topics on Hypergeometric functions (under Prof. Koushik Ray)

RESEARCH INTERESTS

Analytic Number Theory, Combinatorics, Q-Series, Partitions, Special Functions, Basic hypergeometric Series and Modular Forms.

RESEARCH EXPERIENCE

Master's Thesis

August 2023 -

Supervisor: Prof. Koushik Ray

IACS, Kolkata

- Working on hypergeometric functions, its analytic properties, monodromy and generalization to more than one variables via Lauricella function.
- Studying the role of hypergeometric functions in evaluating conformal integrals in various dimensions, and its connection to generating function of Clebsch-Gordon Coefficients.

Undergraduate Research Assistant

June 2024 - July 2024

Supervisor: Prof. Carsten Schneider

RISC, JKU

- Worked on implementing the linear recurrence algorithm of Petkovsek and Jimenez-Pastor (arXiv:2202.05550) in a Wolfram Mathematica package.
- Learned to use the mathematical package Sigma as a part of the work.

Undergraduate Research Assistant

Dec 2023 - Jan 2024

Supervisor: Dr. Ben Kane

HKU

- Work in progress on improving the bounds of coefficients of cuspidal decomposition of modular forms arising in the work of Bringmann and Kane (arXiv:2109.14793) using data obtained from the LMFDB database.
- Learned the mathematical software SAGE as a part of the work.

Polymath REU 2023

June - July 2023

Supervisor: Prof. Victor Moll

Tulane University

- Participated in Prof. Moll's POLYMATH REU team and worked on the method of brackets to evaluate definite integrals, with a specific focus on Bessel functions. The project resulted in a publication.
- A representative of the group presented the work at the Joint Mathematics Meeting 2024.

Research Internship

June - July 2021

Supervisor: Dr. Bibekananda Maji

IIT Indore

- Studied the proof of the irrationality of $\zeta(3)$ by Apéry and the exposition by van der Poorten.
- Proved a new integral representation for $\zeta(2n + 1)$.
- Presented the work virtually at the Gulf Coast Undergraduate Research Symposium hosted by Rice University.

READING COURSE

Independent Study

Supervisors: Dr. Sweta Tiwari

July - August 2021

IIT Guwahati

- Followed the book "Differential Equations, Dynamical Systems, and an Introduction to Chaos" to learn about the mathematics of non-linear systems.
- Used MATLAB to simulate Lotka-Volterra equations, Rossler Equation and Lorentz Pendulum.

PUBLICATIONS

1. **Polymath REU et al**, The integrals in Gradshteyn and Ryzhik. Part 34: Bessel functions, SCIENTIA Series A: Mathematical Sciences, Vol. **34** (2024), 109–129.

2. **M. Bhattacharjee**, The Life and Works of K.G. Ramanathan, Mathematics Newsletter , Ramanujan Mathematical Society.

HONOURS AND AWARDS

Dean's Excellence Award, awarded by Tulane University	<i>March 2025</i>
Heidelberg Laureate Forum Young Researcher, awarded by HLFF	<i>April 2024</i>
Member of Finalists Team in Abhiprajna, organized by IISER Tirupati	<i>October 2023</i>
MS Institutional Fellowship, awarded by IACS, Kolkata	<i>August 2023</i>
Overall Winner of Essay Competition, awarded by University of Mumbai	<i>August 2022</i>
Indian Academy of Sciences Summer Research Fellowship, awarded by IAS-NASI-INSIA	<i>April 2022</i>
S.N Bhatt Memorial Fellowship, awarded by ICTS-TIFR, Bangalore	<i>April 2022</i>
Madhava Mathematics Competition Winner, awarded by Bhaskaracharya Pratisthana	<i>September 2021</i>
National Initiative for Undergraduate Sciences Physics Scholar, awarded by HBCSE	<i>April 2021</i>
Jagadish Chandra Bose National Talent Search Senior Scholar, awarded by JBNSTS	<i>February 2021</i>

ACADEMIC MEMBERSHIPS

Life Member, Indian Mathematical Society.
Student Member, Mathematical Association of America.
Student Member, Royal Statistical Society

TECHNICAL SKILLS

Programming Languages Python, C, MATHEMATICA, MATLAB, Java, SageMath