

# SHILPI MANDAL

10<sup>th</sup> December 2022

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## Education

Graduate Program in Mathematics (PhD) Emory University, USA	[August 2020-present] [GPA 3.95/4.00]
Integrated M.Sc. Mathematical Sciences (5 years) University of Hyderabad, India	[July 2015- June 2020] [CGPA 9.1/10]
All India Senior School Certificate Examination Army Public School Bolarum, India	[2015] [Percentage Marks: 95.2]
All India Secondary School Examination Army Public School Bolarum, India	[2013] [CGPA 10/10]

## Research Experience

Working with my PhD thesis advisor Prof. Suresh Venapally and my co-advisor Prof. Parimala Raman at Emory University to understand the basics of Galois cohomology and Quadratic forms. [January 2021 – present]

Worked with Dr. David Zureick-Brown, Emory University to explore the chapters in the book *The Arithmetic of Elliptic Curves*, by *J H Silverman*. [August 2020 – December 2020]

Worked in the subject of Commutative Algebra to understand the basic structure concerning rings and modules to ultimately understand the Hilbert's Nullstellensatz, under the supervision of Prof. Nagaraj D S, Prof "H" Scientist, The Institute of Mathematical Sciences, Chennai. [May 2018 – July 2018]

Masters' Thesis Project in Algebraic Number Theory to understand the ongoing research in Gauss' Class Number Problem, under the supervision of Dr. Biswajyoti Saha, Assistant Professor, University of Hyderabad. [July 2019 – July 2020]

## **Teaching**

1. In Fall 2022, I am teaching Calculus I (MATH 111) at Emory University.
2. Graduate Teaching Associate, Emory University for Linear Algebra in Fall 2021 and Spring 2022.
3. Grader, Emory University for Mathematical Statistics I in Fall 2020 and Mathematical Statistics II in Spring 2021.

## **Mentoring Experience**

1. Harper Wang (Fall 2022). Introduction to Modern Set Theory.
2. Meg Ruder (Spring 2022). Elementary Number Theory.
3. Sasha Ustilovsky (Fall 2021). Introduction to Algebraic Number Theory.

## **Achievements**

- Women in Natural Sciences Fellow at Emory University, USA for a duration of five years starting August 2020.
- Innovation in Science Pursuit for Inspired Research (INSPIRE) scholar, under Department of Science and Technology (DST), Government of India.
- Gold medalist from Mathematical Sciences for the batch of 2020 at the University of Hyderabad, India.
- Center toppers for MIMAMSA- 2016 [conducted by IISER Pune, India]
- Gold medalist of National level Science Talent Search Examination [NTSE 2012]

## **Key Roles**

Vice President/Secretary, AWM Emory Chapter [March 2022 – present]

Steering Committee, Emory Math Directed Reading Program (DRP) [January 2022 – present]

Julia Robinson Math Festival (volunteer) at Emory University [27<sup>th</sup> August 2022]

Instructor, Math Circle [January 2021 – present]

(Outreach Program by Emory University, USA)

- Design lessons for High school and Middle school students around Atlanta.
- Help other instructors with their lesson preparation.
- Build a sense of familiarity and community among students.

Coordinator, Junior Science Club [July 2016 – June 2020]

(At University of Hyderabad, India)

- Coordinated and organised talks on interdisciplinary sciences and research.

- Organised public outreach programs for school students.
- Designed and demonstrated science experiments using day to day objects.
- Designed puzzles to evoke an interest in mathematics.

Coordinator, Math Club [July 2018 – June 2020]  
(At University of Hyderabad, India)

- Conducted various discussions on concepts fractals, geometry, etc.

Member, The Nation's Rock Beat  
(a youth organisation in Hyderabad, India) [2016 - 2020]

- Organise open mics, street art galleries, live music on streets, conducting quizzes.

## **Schools/Conferences attended**

Graduate Workshop on *Birational Complexity of Algebraic Varieties* at the Simons Center for Geometry and Physics, Stony Brook. [5<sup>th</sup> – 9<sup>th</sup> December 2022]

*Arithmetic and Topology over Global Fields* at the University of Wisconsin-Madison. [7<sup>th</sup> – 9<sup>th</sup> October 2022]

Summer school on *ALGAR 2022: Constructive Methods for Quadratic Form Theory* (online) at the University of Antwerp, Belgium. [5<sup>th</sup> – 9<sup>th</sup> September 2022]

Organized a *summer reading course* in *Abelian Varieties* at Emory University [June 7<sup>th</sup> – August 17<sup>th</sup>, 2022]

*Connecticut Summer School in Number Theory* (CTNT 2022) [June 6<sup>th</sup> – June 12<sup>th</sup>, 2022]

*Algebraic Geometry Northeastern Series (AGNES) 2022* at Rutgers University, New Brunswick, USA [May 20<sup>th</sup> – May 21<sup>st</sup>, 2022]

*Georgia Algebraic Geometry Symposium (GAGS) 2022* at Emory University, Atlanta, USA [April 1<sup>st</sup> – April 3<sup>rd</sup>, 2022]

*Young Researchers in Algebraic Number Theory* (Online) 2021 [August 18<sup>th</sup> – August 20<sup>th</sup>, 2021]

*Arizona Winter Semester 2021: Virtual School in Number Theory*

Session 1: January 25 — March 6, 2021

Session 2: March 22 — May 1, 2021 [January 2021 – May 2021]

*Rational Points and Galois Representations* online workshop [May 10 – May 12, 2021]

*Mid-Atlantic Seminar on Numbers V* – MASON V(irtual) [March 27<sup>th</sup> – 28<sup>th</sup> 2021]

Webinar on Number Theory and Its Related Topics at the Department of Mathematics, Sambalpur University, India [July 6<sup>th</sup> – 15<sup>th</sup> 2020]

Connecticut Summer School in Number Theory (CTNT 2020) [June 8<sup>th</sup> – June 14<sup>th</sup>, 2020]

Attended the *CIMPA School on Group Actions in Arithmetic and Geometry* at the Gadjah Mada University, Yogyakarta, Indonesia. [February 2020]

The Advanced Instructional School (AIS) in Lie Algebra at the Harishchandra Research Institute (HRI), Allahabad, India. [December 2018]

Summer Research Student at the Institute of Mathematical Sciences, Chennai, India. [May 2018 - July 2018]

Enrichment Workshop in “ $p$ -adic Integers and the analysis of  $p$ -adic numbers” at the Institute of Mathematical Sciences, India. [May, 2018]

National Workshop in Number Theory and its Applications, School of Mathematics and Statistics, University of Hyderabad, India. [March, 2018]

Learning Strategies for Postgraduates to the memory of S. Chandrashekar at the Central University of Tamil Nadu, India. [December 2017]

Workshop on Current Issues and Applications of Statistical Methods, University of Hyderabad, India. [October 2017]

Mathematics Training and Talent Search Program (MTTS) at Indian Institute of Technology, Indore, India. [June 2017]

Winter School in Mathematics to the Memory of Dr. S. Minakshi Sundaram at Central University of Tamil Nadu, India. [December 2016]

Third Annual TIFR Center for Interdisciplinary Sciences (TCIS) Summer Research Symposium, Hyderabad, India. [July 2016]

National Science Camp (Vijyoshi) at Indian Institute of Science (IISc) Bengaluru, India. [December 2015]

## **Skills**

Programming Languages: C, Python, R

Operating Systems: Microsoft Windows, Linux – Ubuntu

Typesetting Software:  $\text{\LaTeX}$