

Debanjana Kundu

Curriculum Vitae

PERSONAL DETAILS

Birth January 6, 1993
Address Department of Mathematics, University of Toronto
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EDUCATION

Class X <i>CBSE (India)</i> 98.6% (Mathematics 99, Science 99, English 93)	2008
Class XII <i>CBSE (India)</i> 93.2% (Mathematics 98, Chemistry 95, Physics 91, English 94) (Top 1% in both class X and class XII.)	2010
BS-MS Dual Degree <i>Indian Institute of Science Education and Research, Mohali, India</i> CGPA 9.7	2010-2015
MA PhD <i>University of Toronto, Toronto, Canada</i> CGPA NA	2015-present

PUBLICATIONS/ PREPRINTS

1. Perfect Powers that are Sums of Squares of an AP (with V. Patel)
pre-print available on arXiv, submitted
2. Growth of Fine Selmer Groups in Infinite Towers
pre-print available upon request, submitted
3. Growth of p -Fine Selmer Groups and p -Fine Shafarevich-Tate Group in $\mathbb{Z}/p\mathbb{Z}$ -Extensions
pre-print available upon request, submitted
4. On the Relation between Classical Iwasawa $\mu = 0$ Conjecture and Coates-Sujatha Conjecture A
pre-print available upon request
5. On an Analogue of Kida's Formula for Fine Selmer Groups
pre-print available upon request, submitted
6. Structure of Fine Selmer Groups in p -adic Lie Extensions (with R. Sujatha)
in preparation
7. Beyond Endoscopy via Trace Formula for $GL(2, F)$ (with M. Emory, M. Espinosa-Lara, T.A. Wong) *in progress*

FELLOWSHIPS

INSPIRE Fellowship <i>Department of Science and Technology, Government of India</i>	2010-2015
JNCASR Summer Fellowship <i>JNCASR, India</i>	2012
DAAD WISE Scholarship <i>Germany</i>	2013
IAS Summer Fellowship (not availed) <i>Indian Academy of Sciences, India</i>	2013
MITACS Globalink Research Internship <i>Canada</i>	2014
Rhodes Scholarship finalist (top 18) <i>Oxford University, UK</i>	class of 2015
TIFR VSRP Fellowship <i>TIFR, India</i>	2015
BIGS Scholarship for Graduate Studies (not availed) <i>Hausdorff Center for Mathematics, Bonn, Germany</i>	2015-2018
MITACS Graduate Fellowship <i>Canada</i>	2015 - 2018
Vivekananda Graduate Award for International Students <i>University of Toronto</i>	2018 - 2019
General Motors Women in Mathematics and Science Award <i>University of Toronto</i>	2019 - 2020

SEMINARS/ PRESENTATIONS

Introduction to Game Theory <i>Mathematics Club, IISER Mohali</i>	Aug 2012
27 Lines on a Cubic <i>Department Colloquium, IISER Mohali</i>	Nov 2013
Proofs of Quadratic Reciprocity <i>Department Colloquium, IISER Mohali</i>	April 2014
Linear Groups- Malcev's Theorem and Selberg's Lemma <i>IISER Mohali</i>	April 2014
Principal L-Functions of the Linear Group <i>Department of Math, University of Toronto</i>	August 2016
Understanding the Rank Distribution Conjecture <i>Graduate Seminar, Department of Math, University of Toronto</i>	Nov 2016

What is an Elliptic Curve? <i>Graduate Seminar, Department of Math, University of Toronto</i>	April 2017
Summer Learning Seminar on Modular Forms <i>Graduate Seminar, Department of Math, University of Toronto</i>	Summer 2017
Summer Learning Seminar on Galois Cohomology <i>Graduate Seminar, Department of Math, University of Toronto</i>	Summer 2017
Introduction to Automorphic Forms and Langlands Program <i>Graduate Seminar, Department of Math, University of Toronto</i>	Sep 2017
Learning Seminar on Classical Iwasawa Theory <i>Graduate Seminar, Department of Math, University of Toronto</i>	Sep-Dec 2017
Learning Seminar on Beyond Endoscopy <i>Graduate Seminar, Department of Math, University of Toronto</i>	2017-18
Learning Seminar on Etale Cohomology <i>Graduate Seminar, Department of Math, University of Toronto</i>	Winter 2018
Learning Seminar on Complex Multiplication <i>Graduate Seminar, Department of Math, University of Toronto</i>	Fall 2018
Fun with Tilings <i>Graduate Seminar, Department of Math, University of Toronto</i>	Fall 2018
Learning Seminar on p-adic Lie Groups <i>Graduate Seminar, Department of Math, University of Toronto</i>	Summer 2019
Möbius Functions and Number Theory <i>Math Camp, Department of Math, University of Toronto</i>	Summer 2019

CONFERENCES, WORKSHOPS AND SUMMER SCHOOLS

GANITA Conference, The Fields Institute <i>participant</i>	June 13-16, 2016
Summer Graduate School, MSRI <i>Summer school on Introduction to Character Theory and the McKay Conjecture.</i>	July 11-22, 2016
PIMS Summer School, UBC Vancouver <i>Summer School on Representation Theory of Finite Groups</i>	July 27-30 2016
Fields Medal Symposium, The Fields Institute <i>participant</i>	November 1-4, 2016
Montreal-Toronto Workshop in Number Theory, CRM Montreal <i>Workshop on Mock Modular Forms</i>	December 8-9 2016
5 Day Workshops at BIRS, Banff <i>Workshop on Diophantine Approximation and Algebraic Curves</i>	July 2-7 2017
Summer Graduate School, MSRI <i>Summer school on Automorphic Forms and Langlands Program</i>	Jul 24-Aug 4, 2017
AIM Workshop, San Jose <i>Workshop on Functoriality and the Trace Formula</i>	December 4-8 2017
Montreal-Toronto Workshop in Number Theory, CRM Montreal <i>Workshop on Unitary Shimura Varieties</i>	January 13-14 2018

Arizona Winter School, Tucson <i>Winter school on Iwasawa Theory</i>	March 3-7 2018
PIMS Focus Period, UBC Vancouver <i>Focus Period on Representations in Arithmetic</i>	March 25-29 2018
Upstate Number Theory Conference, SUNY Buffalo <i>Young Researchers Conference</i>	April 28-29 2018
Strength in Numbers, Queen's University <i>Graduate Student Conference, Contributed talk</i>	May 11-12 2018
CTNT Summer School, University of Connecticut <i>Summer School and Conference</i>	May 28- June 3 2018
CNTA Conference, Universite Laval <i>Contributed talk</i>	July 9-13 2018
Montreal-Toronto Workshop in Number Theory, CRM Montreal <i>Workshop on p-adic Hodge Theory</i>	March 22-24 2019
John H. Barrett Memorial Lectures, University of Tennessee <i>participant</i>	May 28-30 2019
Analytic & Combinatorial Number Theory, UIUC <i>Contributed talk</i>	June 06-09 2019
SOGMSC, University of Guelph <i>Contributed talk</i>	June 17 2019
Boston University-Keio University Workshop <i>Contributed talk</i>	June 24-28 2019
Palmetto Number Theory Seminar (PANTS) XXXII <i>Invited talk</i>	September 21-22 2019
CMS Mini-Course on Iwasawa Theory <i>Co-organizer with R. Sujatha</i>	December 6-9 2019

TEACHING ASSISTANCE EXPERIENCE (UNIVERSITY OF TORONTO)

MAT223 (Linear Algebra) <i>Instructor: Mr. Sean Uppal</i>	Fall/Winter 2015 – 16
MAT235 (Multivariable Calculus) <i>Instructor: Dr. Nara Jung</i>	Fall/Winter 2018 – 19
MAT237 (Multivariable Calculus) <i>Instructor: Dr. Tyler Holden, Prof. Robert Gerrard</i>	Summer 2016, Fall/ Winter 2018 – 19

MAT240 (Linear Algebra for Math Specialists)Fall 2016;
Fall 2017*Instructor: Prof. Eckhard Meinrenken***MAT246 (Concepts in Abstract Math)**multiple
times*Instructor: Dr. J Korman, Dr. H Soheil, Prof. F Murnaghan, Dr. D. Burbulla***MAT247 (Linear Algebra II for Math Specialists)**

Winter 2018

*Instructor: Prof. Stephen Kudla***MAT315 (Elementary Number Theory)**

Winter 2020

*Instructor: Prof. Henry Kim***MAT336 (Elements of Analysis)**

Winter 2017

*Instructor: Dr. H Soheil***MAT401 (Polynomial Equations and Fields)**

Summer 2017

*Instructor: Dr. Jonathan Korman***TEACHING EXPERIENCE
(UNIVERSITY OF TORONTO)**

MAT188 (Linear Algebra)

Fall 2018

*Course Coordinator: Dr. Dietrich Burbulla***MAT136 (Calculus II)**

Winter 2019

*Course Coordinator: Dr. Sarah Mayes-Tang***MAT136 (Calculus II)**

Summer 2019

*Course Coordinator along with Daniel Le and Abhishek Oswal***EXTRA-CURRICULAR ACTIVITIES**

Manthan

2011 - 2012

*I was the editor-in-chief of Manthan, the IISER Mohali students' magazine.***Annual Science Day, IISER Mohali**

Feb 2012

*I was a part of the organizing committee of the Annual Science Day at IISER Mohali where we organized several quizzes, an elocution competition and displayed several scientific phenomena for school students in the tri-city (Chandigarh, Panchkula, Mohali).***Mathematics Club, IISER Mohali**

2012 - 2015

*I was an active member of the student-run Mathematics Club and over the years had given talks (to mathematical and general audience) on varied areas of mathematics. I was also an active member of the Annual Mathematics Weekend where we organized quizzes, mathematical treasure hunts, mathematical dumb charades and various other such activities.***Opportunity Cell, IISER Mohali**

2013 - 2015

*I was the student coordinator of the institute Opportunity Cell. Our main aim was to provide information and guidance related to summer/ winter internships, PhD positions and research oriented jobs.***Outreach Committee, IISER Mohali**

2013 - 2015

I was a student volunteer of the institute Outreach Committee and had made several presentations. Our main focus was to introduce topics of current scientific research to school teachers (of the Punjab Government school system) and bring out the connection between learning science and doing science.

MGSA, UofT**September
2016 - present**

I am a member of the Mathematics Graduate Students' Association, in particular I am a Graduate Planning Committee representative. For the academic year 2018-19, I was appointed the treasurer.

Math Outreach, UofT**Winter 2018/
Winter 2019**

I am a mentor for the outreach mentor-ship program. I mentored Anna Krokhine for her research project on graph theory and combinatorics in 2018. In 2019, I mentored Maya Bozzo-Rey on her project on Benford's Law.

Women in Math, Toronto Chapter**2019-Present**

Female graduate students from schools in and around the Greater Toronto Area have come together for WiM, Toronto Chapter. I am a part of the core team and a mentor for incoming graduate students.

SKILLS

<i>Languages</i>	Bengali (mother tongue) English (fluent) Hindi (fluent)
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<i>Software</i>	L ^A T _E X
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REFERENCES

Available upon request