Debanjana Kundu
Curriculum Vitae

PERSONAL DETAILS

Birth	January 6, 1993
Address	CRM, 2940-2950 Polytechnique Rd, Montreal, Quebec H3T 1J4
Phone	(+1) 437-344-2592
Mail	dkundu@math.toronto.edu

EDUCATION

Class X — 2008
CBSE (India)
  98.6% (Mathematics 99, Science 99, English 93)

Class XII — 2010
CBSE (India)
  93.2% (Mathematics 98, Chemistry 95, Physics 91, English 94)
(Top 1% in both class X and class XII.)

BS-MS Dual Degree — 2010-2015
Indian Institute of Science Education and Research, Mohali, India
  CGPA 9.7

MA PhD — 2015-2020
University of Toronto, Toronto, Canada

EMPLOYMENT

Université de Montréal — Fall 2020
CRM-ISM PostDoc, Thematic Program: Cohomology in Arithmetic

University of British Columbia, Vancouver — starting January 2021
PIMS PostDoc Fellow

PUBLICATIONS/ PREPRINTS

1. Growth of Fine Selmer Groups in Infinite Towers
   Canadian Mathematics Bulletin (2020) Volume 63 / Issue 4 pp. 921-936.

2. Growth of p-Fine Selmer Groups and p-Fine Shafarevich-Tate Group in $\mathbb{Z}/p\mathbb{Z}$-Extensions
   Accepted for publication (Journal of the Ramanujan Math Society)

3. Growth of Fine Selmer Groups in Uniform pro-p Extensions
   Accepted for publication (Annales Mathématiques du Québec)

4. Perfect Powers that are Sums of Squares of an AP (with V. Patel)
   Accepted for publication (Rocky Mountain Journal of Mathematics)

5. On an Analogue of Kida's Formula for Fine Selmer Groups
   pre-print available upon request, submitted

6. Control Theorems of Fine Selmer Groups (with M. F. Lim)
   pre-print available upon request, submitted

7. Characteristic ideals of fine Selmer groups of modular forms and Duality (with A. Lei and J. Ray)
   pre-print available upon request

8. Structure of Fine Selmer Groups in p-adic Lie Extensions (with R. Sujatha)
   pre-print available upon request

FELLOWSHIPS

INSPIRE Fellowship   2010-2015
Department of Science and Technology, Government of India

JNCASR Summer Fellowship   2012
JNCASR, India

DAAD WISE Scholarship   2013
Germany

IAS Summer Fellowship (not availed)   2013
Indian Academy of Sciences, India

MITACS Globalink Research Internship   2014
Canada

Rhodes Scholarship finalist (top 18)   class of 2015
Oxford University, UK

TIFR VSRP Fellowship   2015
TIFR, India

BIGS Scholarship for Graduate Studies (not availed)   2015-2018
Hausdorff Center for Mathematics, Bonn, Germany

MITACS Graduate Fellowship   2015 - 2018
Canada

Vivekananda Graduate Award for International Students   2018 - 2019
University of Toronto

General Motors Women in Mathematics and Science Award   2019 - 2020
University of Toronto

CRM-ISM Postdoctoral Fellowship `Fall 2020`

Université de Montréal

PIMS Postdoctoral Fellowship `Jan 2021-Dec 2022`

University of British Columbia, Vancouver

SEMINARS

Introduction to Game Theory `Aug 2012`
Mathematics Club, IISER Mohali
27 Lines on a Cubic `Nov 2013`
Department Colloquium, IISER Mohali
Proofs of Quadratic Reciprocity `April 2014`
Department Colloquium, IISER Mohali
Linear Groups- Malcev's Theorem and Selberg's Lemma `April 2014`
IISER Mohali
Principal L-Functions of the Linear Group `August 2016`
Department of Math, University of Toronto
Understanding the Rank Distribution Conjecture `Nov 2016`
Graduate Seminar, Department of Math, University of Toronto
What is an Elliptic Curve? `April 2017`
Graduate Seminar, Department of Math, University of Toronto
Fun with Tilings `Fall 2018`
Graduate Seminar, Department of Math, University of Toronto
Möbius Functions and Number Theory `Summer 2019`
Math Camp, Department of Math, University of Toronto
Pigeonhole Principle and its Applications `January 2020`
Graduate Seminar, Department of Math, University of Toronto
Iwasawa Theory and Pseudo-nullity Conjectures `January 2020`
Invited talk, Algebra & Number Theory Seminar, University of Laval
Iwasawa Theory of Fine Selmer Groups `January 2020`
Invited talk, QVNTS, Montreal
Overview of Iwasawa Theory `October 2020`
Invited talk, Junior Number Theory Seminar, University of Toronto
Iwasawa Theory of Fine Selmer Groups `November '20`
Invited talk, Fields Number Theory Seminar video
TBA `Winter 2021`
Invited talk, PIMS Online Colloquium

CONFERENCES, WORKSHOPS AND SUMMER SCHOOLS

GANITA Conference, The Fields Institute `June 2016`
participant
Summer Graduate School, MSRI `July 2016`
Summer school on Introduction to Character Theory and the McKay Conjecture.
PIMS Summer School, UBC Vancouver `July 2016`
Summer School on Representation Theory of Finite Groups
Fields Medal Symposium, The Fields Institute `Nov 2016`
participant

Montreal-Toronto Workshop in Number Theory, CRM   Dec 2016
Workshop on Mock Modular Forms
5 Day Workshops at BIRS, Banff   July 2017
Workshop on Diophantine Approximation and Algebraic Curves
Summer Graduate School, MSRI   July 2017
Summer school on Automorphic Forms and Langlands Program
AIM Workshop, San Jose   Dec 2017
Workshop on Functoriality and the Trace Formula
Montreal-Toronto Workshop in Number Theory, CRM   January 2018
Workshop on Unitary Shimura Varieties
Arizona Winter School, Tucson   March 2018
Winter school on Iwasawa Theory
PIMS Focus Period, UBC Vancouver   March 2018
Focus Period on Representations in Arithmetic
Upstate Number Theory Conference, SUNY Buffalo   April 2018
Young Researchers Conference
Strength in Numbers, Queen's University   May 2018
Graduate Student Conference, Contributed talk
CTNT Summer School, University of Connecticut   May 2018
Summer School and Conference
CNTA Conference, Universite Laval   July 2018
Contributed talk
Montreal-Toronto Workshop in Number Theory, CRM   March 2019
Workshop on p-adic Hodge Theory
John H. Barrett Memorial Lectures, University of Tennessee May 2019
participant
Analytic & Combinatorial Number Theory, UIUC   June 2019
Contributed talk
SOGMSC, University of Guelph   June 2019
Contributed talk
Boston University-Keio University Workshop   June 2019
Contributed talk
PAlmetto Number Theory Seminar (PANTS) XXXII   Sep 2019
Invited talk
Maine-Quebec Number Theory Conference   October 2019
Contributed talk
MAAIM, Emory University   Nov 2019
Contributed talk
CMS Mini-Course on Iwasawa Theory   Dec 2019
Co-organizer with R. Sujatha
CTNT Conference, University of Connecticut   June 2020
Contributed talk slides
Maine-Quebec Number Theory Conference   Fall 2020
Contributed talk slides video
John's Hopkins Junior Number Theory Days   Dec 2020
Invited Talk
AIM Workshop, Online   Jan 2021
Workshop on Arithmetic Intersection Theory on Shimura Varieties
CMS Summer Meeting   June 2021
Invited talk, Session: Algebraic Number Theory

LEARNING SEMINARS ORGANIZED/ PARTICIPATED

Summer Learning Seminar on Modular Forms — Summer 2017
Graduate Seminar, Department of Math, University of Toronto

Summer Learning Seminar on Galois Cohomology — Summer 2017
Graduate Seminar, Department of Math, University of Toronto

Introduction to Automorphic Forms and Langlands Program — Fall 2017
Graduate Seminar, Department of Math, University of Toronto

Learning Seminar on Classical Iwasawa Theory — Fall 2017
Graduate Seminar, Department of Math, University of Toronto

Learning Seminar on Beyond Endoscopy — 2017-18
Graduate Seminar, Department of Math, University of Toronto

Learning Seminar on Etale Cohomology — Winter 2018
Graduate Seminar, Department of Math, University of Toronto

Learning Seminar on Complex Multiplication — Fall 2018
Graduate Seminar, Department of Math, University of Toronto

Learning Seminar on p-adic Lie Groups — Summer 2019
Graduate Seminar, Department of Math, University of Toronto

Learning Seminar on Tate Conjectures — Fall 2019
Graduate Seminar, Department of Math, University of Toronto

Learning Seminar on Abelian ℓ-Adic Representations — Summer 2020
Graduate Seminar, Department of Math, University of Toronto

Learning Seminar on Euler system and Eisenstein congruences — Fall 2020
Iwasawa Seminar, Department of Math, UBC Vancouver

CRM Women's Seminar — Fall 2020
Part of the thematic program at CRM

Learning Seminar on Coleman Families of Modular Forms — Fall 2020
Part of the thematic program at CRM webpage

TEACHING ASSISTANCE EXPERIENCE (UNIVERSITY OF TORONTO)

MAT223 (Linear Algebra) — Fall/Winter $2015-16$
Instructor: Mr. Sean Uppal

MAT235 (Multivariable Calculus) — Fall/Winter $2018-19$
Instructor: Dr. Nara Jung

MAT237 (Multivariable Calculus) — Summer 2016, Fall/ Winter $2018-19$
Instructor: Dr. Tyler Holden, Prof. Robert Gerrard

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
MAT237 (Multivariable Calculus) `Summer 2020`
Course Coordinator along with Travis Ens, Armanpreet Pannu, and Ren Zhu

University of British Columbia (Vancouver):
MAT105 (Integral Calculus) `Winter 2021`
Course Coordinator: Keqin Liu

SERVICE

Refereed for   Annales Mathématiques du Québec

EXTRA-CURRICULAR ACTIVITIES

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. We also organized the Annual Science Day for school students in the tri-city area (Chandigarh-Panchkula-Mohali).
MGSA, UofT `2016 - 2020`
I was an active member of the Mathematics Graduate Students' Association. For several years, I was a Graduate Planning Committee representative. In addition, for the academic year 2018-19, I was appointed the treasurer.
Math Outreach, UofT `2018-2020`
I was a mentor for the high school 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. In 2020, my student, Jennifer Wang explored questions from number theory.
Women in Math, Toronto Chapter `2019-2020`
Female graduate students from schools in and around the Greater Toronto Area came together for WiM, Toronto Chapter in 2019. I was a part of the core team and a mentor for incoming graduate students.

SKILLS

Languages	Bengali (mother tongue)
	English (fluent)
	Hindi (fluent)
Software	LaTeX

REFERENCES

Available upon request