

## Employment

- 2021- **Assistant Professor**, *Indian Institute of Science*, Bangalore, India.  
2019-2021 **Postdoctoral Fellow**, *National Center for Theoretical Sciences*, Taipei, Taiwan.  
2016-2019 **Hans Rademacher Instructor (postdoc)**, *University of Pennsylvania*, Philadelphia, USA.

## Education

- 2010-2016 **PhD in Mathematics**, *University of Washington*, Seattle, USA.  
Advisor: Ralph Greenberg  
2006-2010 **B.Tech in Engineering Physics**, *Indian Institute of Technology Bombay*, India.

## Papers and Preprints

- On computing the Newton polygons of plus and minus  $p$ -adic  $L$ -functions.**  
with Sai Sanjeev Balakrishnan and Antonio Lei, *Involvement* (2024)
- An ergodic approach towards an equidistribution result of Ferrero–Washington.**  
with Jungwon Lee, *Journal de Théorie des Nombres de Bordeaux* (2024)
- Codimension two cycles in Iwasawa theory and tensor product of Hida families.**  
with Antonio Lei, *Mathematische Annalen* (2022)
- Codimension two cycles in Iwasawa theory and elliptic curves with supersingular reduction.**  
with Antonio Lei, *Forum of Mathematics, Sigma* (2019)
- On free resolutions of Iwasawa modules.**  
with Alexandra Nichifor, *Documenta Mathematica* (2019)
- Height one specializations of Selmer groups.**  
*Annales de l'Institut Fourier* (2019)
- On Selmer groups and factoring  $p$ -adic  $L$ -functions.**  
*International Mathematics Research Notices* (2018)

## Conference organization

- April 2024 **Number Theory Day in Bangalore**, *IISc*,  
with Shaunak Deo.
- Nov 2022 **An in-house postdoc+student symposium**, *IISc*,  
with Gautam Bharali and Purvi Gupta.
- Nov 2020  **$L$ -values and Iwasawa theory**, *online*,  
with Ashay Burungale, Ming-Lun Hsieh and Sujatha Ramdorai.

## Student supervision

- Jan-Apr 2024 **Sakjit Das**, *Indian Institute of Science*,  
Undergraduate thesis on *Modular curves and modular forms*.
- Jan-Apr 2023 **Suryansh Shrivastava**, *Indian Institute of Science*,  
Undergraduate thesis on *Formalizing the proof of Stickelberger's theorem on Lean*.
- Summer 2022 **Niranjan Kumar from Chennai Mathematical Institute**, *Indian Institute of Science*,  
Reading project on Caroline Series' paper *The modular surface and continued fractions*.
- March 2018 **Arizona Winter School on Iwasawa Theory**, *University of Arizona*,  
Study group guide for John Coates's study group on the *Weak Leopoldt conjecture*.
- Spring 2018 **Weichen Zhou**, *University of Pennsylvania*,  
Masters thesis on *Elliptic curves over  $\mathbb{C}$  with complex multiplication*.
- Summer 2017 **Andrea Thevis**, *University of Pennsylvania*,  
Masters thesis on *Elliptic curves and cryptography*.
- Fall 2017 **Yao-Rui Yeo**, *University of Pennsylvania*,  
Ind. Study on *Galois representations*.

## Short term visits

- Dec 2024 **Research in Teams at CIRM Luminy**, *France*,  
with Chi-Yun Hsu

July 2024	<b>Santa Clara University</b> , visiting Chi-Yun Hsu	USA.
May 2024	<b>Research in Pairs at MFO Oberwolfach</b> , with Jungwon Lee	Germany.
Dec 2023	<b>Research in Teams at NCTS</b> , with Chi-Yun Hsu	Taiwan.
July 2023	<b>National Center for Theoretical Sciences</b> , visiting Ming-Lun Hsieh.	UK,
May 2022	<b>University of Warwick</b> , visiting Jungwon Lee.	UK,
Oct 2019	<b>Oberwolfach Leibniz Fellowship at MFO Oberwolfach</b> ,	Germany.
Aug 2018	<b>Research in Pairs at MFO Oberwolfach</b> , with Marc Masdeu and Chris Williams	Germany.
June 2018	<b>Universität Duisburg-Essen</b> , visiting Andreas Nickel	Germany.
Mar 2018	<b>Université Laval</b> , visiting Antonio Lei	Canada.

### Teaching at the Indian Institute of Science

<b>UM 101: Analysis and Linear Algebra I</b> ,	Aug-Dec 2024.
<b>Math 358: Topics in Number theory 2: <math>p</math>-adic <math>L</math>-functions</b> ,	Jan-Apr 2024.
<b>Math 212: Algebra I</b> ,	Aug-Dec 2023.
<b>Math 224: Complex Analysis</b> ,	Jan-Apr 2023.
<b>Math 313: Algebraic Number Theory</b> ,	Aug-Dec 2022.

### Teaching at the University of Pennsylvania

<b>Math 104: Calculus I</b> , ( <i>Volumes of revolution, Integration techniques, Taylor series</i> )	Fall 2018, Fall 2016.
<b>Math 240: Calculus III</b> , ( <i>Introduction to Linear algebra and ODEs</i> )	Fall 2018, Spring 2017.
<b>Math 312: Linear Algebra</b> ,	Spring 2018.
<b>Math 350: Undergraduate Number Theory</b> ,	Spring 2019.
<b>Math 420: Ordinary differential equations</b> ,	Fall 2016.
(graduate) <b>Math 620: Algebraic Number Theory</b> ,	Fall 2017.
(graduate) <b>Math 621: Algebraic Number Theory (Good Teaching Award)</b> ,	Spring 2018.

### Teaching at the University of Washington

<b>Math 307: Ordinary differential equations (Instructor)</b> ,	Spring 2016.
<b>Math 308: Matrix Algebra with applications (Instructor)</b> ,	Summer 2015, Winter 2015, Spring 2014, Winter 2014.
<b>Math 300: Introduction to mathematical reasoning (Instructor)</b> ,	Summer 2013.
<b>Teaching assistant for various undergraduate calculus courses.</b>	

### Invited Talks

Jan 2024	<b>Enumeration at Pravega</b> ,	Indian Institute of Science, India.
Dec 2023	<b>NCMW workshop on Hida theory and Iwasawa Main conjecture over <math>\mathbb{Q}</math></b> , four lectures on <i>Hida theory for <math>GL(2)</math> over <math>\mathbb{Q}</math></i> .	CMI, India,
Apr 2023	<b>NCMW workshop on Elliptic Curves</b> , four lectures on <i><math>p</math>-adic <math>L</math>-functions of elliptic curves</i> .	IISER Thiruvanthapuram, India,
Mar 2023	<b>Ottawa/Carleton Number Theory Seminar</b> ,	University of Ottawa (Canada).
Mar 2023	<b>G20 Lecture Series</b> ,	Gujarat University, India.
Nov 2022	<b>Random Geometry colloquium</b> ,	Tata Institute of Fundamental Research (Mumbai), India.
Aug 2022	<b>Conference: <u>Elliptic curves and special values of <math>L</math>-functions</u></b> ,	ICTS, India.
April 2022	<b>Science Seminar</b> ,	Azim Premji University, India.
January 2022	<b>Number Theory Seminar</b> ,	Indian Institute of Science, India.
Sept 2021	<b>Philadelphia Area Number Theory Seminar</b> ,	Bryn Mawr, USA.
Dec 2020	<b>Seminar on Geometry and Arithmetic</b> ,	UC Santa Barbara, USA.

August 2020	<b>Algebra and Combinatorics Seminar,</b>	<i>Indian Institute of Science, India.</i>
July 2020	<b>Colloquium,</b>	<i>Tata Institute of Fundamental Research (Mumbai) India.</i>
Feb 2020	<b>Number Theory seminar,</b>	<i>Seoul National University, South Korea.</i>
Jan 2020	<b>Galois seminar,</b>	<i>University of Pennsylvania, USA.</i>
Nov 2019	<b>Taipei Postdoc seminar,</b>	<i>Academia Sinica / NCTS, Taiwan.</i>
July 2019	<b>Algebra and Number Theory seminar,</b>	<i>Universität des Saarlandes, Germany.</i>
Apr 2019	<b>Pizza seminar for graduate students,</b>	<i>University of Pennsylvania, USA.</i>
Apr 2019	<b>AMS Sectional Meeting,</b> Special session on <u>Special values of <math>L</math>-functions and arithmetic invariants in families.</u>	<i>University of Connecticut (Hartford), USA,</i>
Mar 2019	<b>Algebra-Number Theory seminar,</b>	<i>University of Maryland, USA.</i>
Mar 2019	<b>Columbia-CUNY-NYU Joint Number Theory Seminar,</b>	<i>Courant Institute, USA.</i>
Oct 2018	<b>Number theory seminar,</b>	<i>Université Laval, Canada.</i>
June 2018	<b>Oberseminar,</b>	<i>Universität Duisburg-Essen (Essen), Germany.</i>
May 2018	<b>The Bielefeld Arithmetic Geometry Seminar,</b>	<i>Universität Bielefeld, Germany.</i>
May 2018	<b><u>Workshop: Iwasawa Theory and Related Topics,</u></b>	<i>University of Heidelberg, Germany.</i>
May 2018	<b>Number theory seminar,</b>	<i>University of Illinois (Chicago), USA.</i>
Nov 2017	<b>Quebec Vermont Number theory seminar,</b>	<i>Concordia University, Canada.</i>
Sept 2017	<b>Number theory seminar,</b>	<i>Univeristy of British Columbia, Canada.</i>
Sept 2017	<b>Algebra seminar,</b>	<i>University of Pennsylvania, USA.</i>
Mar 2017	<b>Number theory seminar,</b>	<i>Université Laval, Canada.</i>
Jan 2017	<b>Philadelphia Area Number Theory Seminar,</b>	<i>Bryn Mawr, USA.</i>
Jun 2016	<b><u>Workshop: New Directions in Iwasawa theory,</u></b> Video link: <a href="https://goo.gl/EksZ2s">https://goo.gl/EksZ2s</a> .	<i>Banff Research Center, Canada,</i>
Apr 2016	<b>Galois seminar,</b>	<i>University of Pennsylvania, USA.</i>
Jan 2016	<b>Number theory seminar,</b>	<i>University of California Los Angeles, USA.</i>
Nov 2015	<b>Number theory seminar,</b>	<i>University of Arizona, USA.</i>
Oct 2014	<b>Number theory seminar,</b>	<i>University of Washington USA.</i>
Sept 2014	<b>Number theory seminar,</b>	<i>IIT Bombay, India.</i>

## Shorter Talks

Feb 2024	<b>Number Theory Workshop,</b>	<i>Coorg, India.</i>
Feb 2023	<b>Symposium on Algebraic geometry and its applications,</b>	<i>CIRM, France.</i>
Mar 2021	<b>Spring Day 2021,</b>	<i>NCTS, Taiwan.</i>
Sept 2020	<b>CRM Members seminar,</b>	<i>CRM, Canada.</i>
June 2020	<b>Spring Day 2020,</b>	<i>NCTS, Taiwan.</i>
Oct 2018	<b>Maine/Québec Number theory conference,</b>	<i>Université Laval, Canada.</i>
Oct 2016	<b>Maine/Québec Number theory conference,</b>	<i>Université Laval, Canada.</i>
Mar 2016	<b>30th Automorphic forms workshop,</b>	<i>Wake Forest University, USA.</i>
Oct 2015	<b>Midwest Number theory conference,</b>	<i>University of Illinois Chicago, USA.</i>
Sept 2015	<b>Boston-Keio workshop,</b>	<i>Boston University USA.</i>

## Awards and Fellowships

2024	<b>IISc Infosys Young Investigator,</b>	<i>India.</i>
2022	<b>SERB Matrics grant,</b>	<i>India.</i>
declined due to covid	<b>Simons CRM Scholar,</b>	<i>CRM, Canada.</i>
Oct 2019	<b>Oberwolfach Leibniz Fellow,</b>	<i>MFO Oberwolfach, Germany.</i>
Summer 2018	<b>US Junior Oberwolfach Fellow,</b>	<i>MFO Oberwolfach, Germany.</i>
Spring 2018	<b>Good Teaching Award,</b> Math 621 Algebraic Number Theory	<i>University of Pennsylvania.</i>
Spring 2013	<b>Robert and Elaine Phelps fellowship,</b>	<i>University of Washington.</i>
2003	<b>International Math. Olympiad (IMO) Training camp,</b>	<i>HBCSE, India.</i>