

# Sarasij Maitra

## Curriculum Vitae

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### Education

- 2016–present **PhD in Mathematics**, *University of Virginia*.  
2014–2016 **M.Math**, *Indian Statistical Institute*, Kolkata.  
2011–2014 **B.Math**, *Indian Statistical Institute*, Bangalore.

### Papers and Preprints

- **Torsion in Differentials and Berger's Conjecture** with C. Huneke and V. Mukundan; to appear in *Research in the Mathematical Sciences*
- **Traceable PRFs: Full Collusion Resistance and Active Security** with D. J. Wu (Submitted)
- **RandomPoints package for Macaulay2** with S. Bisui, T. T. Nguyễn, Z. Jiang and K. Schwede (Submitted)
- **On Reflexive and  $I$ -Ulrich Modules over Curve Singularities**, with H. Dao and P. Sridhar; to appear in *Transactions of the American Mathematical Society*
- **Partial Trace Ideals and Berger's Conjecture** (Submitted)

### Awards and Achievements

- **Jefferson Scholars Foundation Research Prize, 2021.**
- **All-University Graduate Teaching Award, University of Virginia, 2019-2020.**
- (2019) Travel Grant for Mathematical Sciences Research Institute 883 Commutative Algebra and its Interaction with Algebraic Geometry.
- 1<sup>st</sup> Division with Distinction in M. Math.
- 1<sup>st</sup> Division with Distinction in B. Math.

### Software

- *RandomPoints*, (Macaulay 2), with S. Bisui, T. T. Nguyễn, Z. Jiang, K. Schwede.
- *SwitchingFields*, (Macaulay 2), with Z. Jiang.

### Invited Talks and Poster Presentations

- March 2022 **TBD (Upcoming)**, *Special Session on Recent Developments in Commutative Algebra*.  
AMS Spring Central Sectional Meeting at Purdue University, West Lafayette, IN

- January 2022 **On Reflexive and  $I$ -Ulrich Modules**, *AMS Special Session on Commutative Algebra*, Seattle, WA, Joint Mathematics Meetings.
- April 2021 **Discussions on  $I$ -Ulrich Modules**.  
Virtual Commutative Algebra Seminar, Purdue University
- April 2021 **An Introduction To Gröbner Bases**, (*Joint Talk with Stephanie Shand*).  
Graduate Seminar, University of Virginia
- February 2021 **Discussions on  $I$ -Ulrich Modules**.  
Algebra Seminar, West Virginia University
- January 2021 **Discussions on Berger's Conjecture**.  
Joint Mathematics Meetings
- October 2020 **A Study of Colength in Dimension One**.  
Commutative and Homological Algebra Market Presentations (CHAMP)
- June 2020 **Poster: An Approach to Berger's Conjecture**.  
Early Commutative Algebra Researchers (eCARs)
- June 2020 **A Simple Study of Colength**.  
Graduate Student Seminar, New Mexico State University
- March 2020 **"Berger's Conjecture from the Viewpoint of an Invariant of the Module of Differentials"—An Approach to Berger's Conjecture**.  
A Zoom Session on Commutative Algebra

## Teaching

- Fall 2021 **Graduate Teaching Instructor**, *University of Virginia*.  
MATH 1410-001 Financial Mathematics (Ongoing)
- Fall 2020 **Graduate Teaching Instructor**, *University of Virginia*.  
MATH 1320-200 Calculus II (Online Flipped Model)
- Fall 2019 **Graduate Teaching Instructor**, *University of Virginia*.  
MATH 1310-001 Calculus I (Flipped Model)
- Spring 2019 **Graduate Teaching Instructor**, *University of Virginia*.  
MATH 1220-009 A Survey of Calculus II
- Spring 2018 **Graduate Teaching Instructor**, *University of Virginia*.  
MATH 1210-008 A Survey of Calculus I
- Fall 2017 **Graduate Teaching Instructor**, *University of Virginia*.  
MATH 1210-007 A Survey of Calculus I
- Spring 2017 **Graduate Teaching Assistant**, *University of Virginia*.  
MATH 1310-100 Calculus I, MATH 3250-300 Ordinary Differential Equations
- Fall 2016 **Graduate Teaching Assistant**, *University of Virginia*.  
MATH 1310-500, MATH 1310-700 Calculus I

## Conferences Attended

- January, 2021 **Joint Mathematics Meetings**.
- June, 2020 **eCARs**, Early Commutative Algebra Researchers.

- April, 2020 **CAZoom - Virtually bringing together commutative algebra and related fields.**
- March, 2020 **A Zoom Special Session On Commutative Algebra.**
- June, 2019 **Conference on Commutative Algebra and its Interaction with Algebraic Geometry In Honor of Bernd Ulrich.**  
University of Notre Dame, Indiana
- Apr, 2019 **Morgantown Algebra Days.**  
West Virginia University, Morgantown, West Virginia
- Oct, 2018 **Fall Central Sectional Meeting.**  
University of Michigan, Ann Arbor, Ann Arbor, MI
- Mar, 2018 **Mini Workshop.**  
University of Virginia
- Nov, 2017 **Workshop on Topics in Algebraic Geometry.**  
University of North Carolina, Chapel Hill

## Other Projects

- Ongoing since Spring 2021 Reading and research projects on Traceable PRFs, Fingerprinting Codes, Attribute and Identity Based Encryptions under Prof. David J. Wu (Computer Science, University of Texas, Austin)
- Jan - May, 2016 Project on *Bargaining Games with Time-Independent and Time-Dependent Preferences* under Prof. Souvik Roy of Indian Statistical Institute, Kolkata. [\[Project Report\]](#)
- Dec, 2014 Reading Project on *Hopf Algebra* under Prof. Jyotishman Bhowmick of Indian Statistical Institute, Kolkata.
- May - July, 2013 Indian Academy of Sciences Summer Project on *Algebraic Geometry* under Prof. Kapil Hari Paranjape at Indian Institute of Science Education and Research, Mohali. [\[Project Report\]](#)

## Skills

- Language Skills English, Bengali, Hindi
- Technologies Working knowledge of Macaulay 2,  $\text{\LaTeX}$ , Python, R, HTML, MATLAB