

# Asvin G.

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Last updated: August 29, 2022

## Education

- 2018- **PhD**, *University of Wisconsin-Madison*, Advisor: Jordan Ellenberg.
- 2015–2017 **MMath**, *University of Michigan, Ann Arbor*.
- 2011-2015 **BS with Distinction**, *Indian Institute of Technology Kanpur*.

## Interests

Algebraic geometry, algebraic topology, number theory, combinatorics.

## Papers

1. On the variation of the Frobenius in a non abelian Iwasawa tower. [\[arxiv\]](#).
2. Unlikely and just likely intersections for high dimensional families of elliptic curves. [\[arxiv\]](#)
3. Configuration spaces, graded spaces, and polysymmetric functions; joint with [Andrew O'Desky](#). [\[arxiv\]](#)
4. Supersingularity of Motives with Complex Multiplication and a Twisted Polarization. [\[arxiv\]](#)

## Awards

1. *Excellence in Research Graduate Student Award*, 2022.

## Research Talks

1. (Oct 14, 2021) *UW-Madison Number Theory seminar*. The variation of the characteristic polynomial in  $\ell$ -adic towers.
2. (Oct 22, 2021) *UW-Madison Algebraic Geometry seminar*. A generalization of the ring of Symmetric functions and an application to computing topological invariants of graded monoid spaces.
3. (Nov 22, 2021) *UW Madison Singularities seminar*. On topological invariants of the space of irreducible polynomials in many variables.
4. (April 30, 2022) *ADDING seminar, Georgia*. The variation of Frobenius eigenvalues in  $\ell$ -adic towers of curves over a finite field.
5. (May 19, 2022) *IISC Number Theory seminar, Bangalore*. On the space of irreducible polynomials in many variables.

## Expository Talks and Reading Groups

1. (July 28, 2017) *Invited talk at TIFR*. On mod- $p$  and  $p$ -adic modular forms following Swinnerton-Dyer and Serre.
2. (Summer 2018 - Summer 2019) *Math-Physics reading group, UW Madison*. Covered various

topics such as Quantum cryptography, electromagnetism, statistical physics etc.

3. (Feb 7, 2021) *U-Washington reading seminar*. On Mori's paper "Projective manifolds with ample tangent bundle."
4. (Winter 2020-21) *Reading group on Weil I*.
5. (Summer 2021) *Reading group on Absolute Hodge Cycles*.
6. (Summer 2021) *Reading group on  $p$ -adic Hodge Theory*.
7. Various talks in the Graduate Number Theory and Algebraic Geometry seminars at UW-Madison.

## Teaching

1. (Fall Semester, 2018-19) *Teaching Assistant; Math 221, UW-Madison*: Calculus I.
2. (Spring Semester, 2018-19) *Teaching Assistant; Math 222, UW-Madison*: Calculus II.
3. (Fall Semester, 2019-20) *Teaching Assistant; Math 234, UW-Madison*: Calculus III.
4. (Spring Semester, 2019-20) *Teaching Assistant; Math 240, UW-Madison*: Discrete Math.
5. (Summer Semester, 2019-20) *Instructor; Math 234, UW Madison*: Calculus III.
6. (Fall Semester, 2020-21) *Teaching Assistant; Math 340, UW-Madison*: Linear Algebra
7. (Spring Semester, 2020-21) *Instructor; Math 96, UW Madison*: Preparatory Algebra.
8. (Spring Semester, 2020-21) *Grader; Math 764, UW Madison*: Lie Algebras.
9. (Summer Semester, 2020-21) *Grader; Math 435, UW Madison*: Cryptography.
10. (Fall Semester, 2021-22) *Teaching Assistant; Math 321, UW-Madison*: Applied Mathematical Analysis.
11. (Spring Semester, 2021-22) *Teaching Assistant; Math 321, UW-Madison*: Applied Mathematical Analysis.
12. (Summer Semester, 2021-22) *Research Assistant, Jordan Ellenberg*.