Vidhu Adhihetty
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EDUCATION

Columbia University 2023 - Present
Ph.D. (Advisor: Aise Johan de Jong)
Research Interests: Algebraic Geometry, Number Theory, Arithmetic Geometry

University of Toronto 2019 - 2023
B.Sc. (High Distinction), Mathematics Specialization

GRADUATE COURSEWORK

- Commutative Algebra (Robert Friedman)
- Complex Analysis and Riemann Surfaces I (Duong Phong)
- Lie Groups and Representations I (Andrei Okounkov)
- Algebraic and Arithmetic Geometry (Robert Friedman)
- Algebraic Number Theory - Class Field Theory (Eric Urban)
- Lie Groups and Representations II (Andrei Okounkov)

SEMINARS

Deligne-Lusztig Theory (Fall 2024)

- Co-organized (with Wenqi Li) a graduate learning seminar on Deligne-Lusztig theory, exploring the theory first through the introductory lens of the special linear group over finite fields (using C. Bonnafé's *Representations of SL(2, F_q)*), and then more generally using P. Deligne and G. Lusztig's original paper, as well as M. Cabanes and M. Enguehard's *Representation Theory of Finite Reductive Groups*
- https://www.math.columbia.edu/~wenqili/DLsem.html

Prismatic Cohomology (Winter 2025)

- Co-organizing (with Sang Min Ko) a graduate learning seminar on prismatic cohomology
- Following B. Bhatt's Eilenberg lecture notes, with additional talks on THH, crystalline cohomology, and other relevant topics as needed
- https://smko77.github.io/seminars/2025-spring-prismatic-cohomology

Chabauty-Coleman-Kim Method (Fall 2025)

- Co-organizing (with Matthew Hase-Liu) a graduate learning seminar on the Chabauty-Coleman method, and its generalization by Minhyong Kim, and compared it with similar methods recently developed by Lawrence and Venkatesh
- Discussed applications of these methods to other problems in arithmetic geometry (e.g. Kamienny's criterion)
- https://www.math.columbia.edu/~mhaseliu/CC.html

CONFERENCES ATTENDED

EPIGA - Sorbonne Université, Paris (June 2024)

- The conference involved talks on a variety of topics in algebraic geometry, including Hodge theory, singularity theory, abelian varieties, and more

SRI in Algebraic Geometry - Colorado State University, Fort Collins (July 2025)

- Attended the final week of the conference which was focused, among other things, on o-minimality and p-adic Hodge theory

TEACHING

Teaching Assistant:

- Ordinary Differential Equations (Fall 2025)
- Calculus I (Summer 2025)
- Graduate Algebraic Number Theory (Spring 2025)
- Ordinary Differential Equations (Fall 2024)
- Calculus I-IV (Helproom, 2023 - 2024)

Instructor:

- Linear Algebra and Probability (Summer 2025)

RESEARCH

I am currently working on Noether-Lefschetz problems in Hodge theory using a mix of tools from o-minimality and infinitesimal methods in the study of variations of Hodge structures.