

Ravi Donepudi

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Ph.D Student
University of Illinois at Urbana-Champaign

Education

- Fall 2014– **Ph.D in Mathematics**, *University of Illinois*, Urbana-Champaign.
Adviser: Prof. Patrick Allen
- 2010–2014 **Bachelor of Arts in Mathematics**, *Colorado College*.
Adviser: Prof. Stefan Erickson
- Spring 2010 **Budapest Semester in Mathematics**, *Budapest University*, Hungary.

Interests

My field of research is arithmetic geometry. I examine which abelian varieties arise as Jacobians of smooth curves in positive characteristic. I am also interested in counting points on curves over finite fields, computing their Newton polygons and the vanishing of their L-functions at points of arithmetic interest.

Publications and Presentations

Publications

- [1] On the second moments of some families of curves over a finite field, with J. Li and A. Zaharescu. *Finite Fields and Their Applications* (2017), vol. 48, 331-355 .
- [2] Restrictions on Weil polynomials of Jacobians of hyperelliptic curves, with E. Costa, R. Fernando, V. Karemaker, C. Springer and M. West. *To appear in the Simons Symposia proceedings volume for the Simons Collaboration "Arithmetic Geometry, Number Theory and Computation*.
- [3] Vanishing of Dirichlet L -functions at the central point over function fields, with Wanlin Li. *Submitted*.

Presentations

- [1] Abelian varieties not isogenous to a hyperelliptic jacobian, In *AMS Special Session on Explicit Methods in Arithmetic Geometry, JMM, Denver*, January 2020.
- [2] Combinatorial Approaches To Geometry Over Finite Fields, In *Special Session on Experimental Mathematics in Number Theory and Combinatorics, Fall Southeastern Sectional Meeting, University of Illinois at Urbana-Champaign*, November 2019.
- [4] p -adic Families of Modular Forms In *Graduate Student Number Theory Seminar, University of Illinois at Urbana-Champaign*, February 2018.
- [3] Moduli of Abelian Varieties in Positive Characteristic, In *Graduate Algebraic Geometry Seminar, University of Illinois at Urbana-Champaign*, November 2017.

- [5] Deformation theory of Galois representations, In *Graduate Algebraic Geometry Seminar, University of Illinois at Urbana-Champaign*, March 2017.
- [7] The Functional Equation of the Dedekind Zeta Function of a Number Field. In *Graduate Student Number Theory Seminar, University of Illinois at Urbana-Champaign*, October 2016.
- [8] Analogues of Cyclotomic Extensions in Function Fields. In *Algebraic Geometry Seminar, University of Illinois at Urbana-Champaign*, October 2014.
- [9] Counting Cubic Extensions of Function Fields with given Quadratic Resolvent. In *Pikes Peak Regional Undergraduate Mathematics Conference, University of Colorado*, February 2014.
- [10] Stark Conjectures in Rational Function Fields. At *Colorado College*, April 2013.

--- Awards and Honors

- [1] The Sophie Germain award, awarded to a graduating senior "for exemplary passion and extraordinary performance", *Colorado College*, May 2014
- [2] The IGL Susan Morisato Scholarship, awarded to a graduate mentor for their contributions to the Illinois Geometry Lab, May 2018
- [3] The Departmental TA instructional Award, awarded to a graduate student for excellence in teaching, *University of Illinois*, May 2019

--- Conferences and Workshops attended

- [1] SIAM Conference on Applied Algebraic Geometry, *Colorado State University, Fort Collins*, August 2013
- [2] Illinois Number Theory Conference , *University of Illinois, Urbana-Champaign* August 2015
- [3] Summer School in Explicit Methods for Abelian Varieties, *University of Calgary, Calgary*, June 2016
- [4] Arizona Winter School in Arithmetic Geometry (Perfectoid Spaces), *University of Arizona, Tucson*, March 2017
- [5] Midwest Algebraic Geometry Graduate Conference, *University of Illinois, Chicago*, April 2017
- [6] Arizona Winter School in Arithmetic Geometry (Iwasawa Theory), *University of Arizona, Tucson*, March 2018
- [7] Arithmetic of Algebraic Curves, *University of Wisconsin-Madison*, April 2018
- [8] School in Arithmetic Geometry, *University of Duisburg-Essen, Germany*, September 2018
- [9] Popup conference in Number Theory, *University of Illinois, Chicago*, November 2018
- [10] Arithmetic and Geometry of Surfaces, *University of Wisconsin-Madison*, February 2019
- [11] Arithmetic of Low-Dimensional Abelian Varieties, *ICERM*, June 2019

- [12] Explicit Methods in Arithmetic Geometry in Characteristic p , *AMS Mathematical Research Community*, June 2019