Ravi Fernando

CONTACT
INFORMATION

Ravi Fernando
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RESEARCH
INTERESTS

The de Rham-Witt complex, crystalline cohomology and other p-adic cohomology theories, and other topics in algebraic geometry in mixed and positive characteristic

EDUCATION

University of California, Berkeley

Ph.D. in Mathematics, May 2023

- Advisor: Martin Olsson
- Dissertation: *Saturated de Rham-Witt complexes with unit-root coefficients.*

Stanford University

B.S. in Mathematics, June 2014

- With university distinction
- Minor in computer science

EMPLOYMENT

2023–present: University of Illinois Urbana-Champaign, J. L. Doob Research Assistant Professor.

PAPERS

1. **Saturated de Rham-Witt complexes with unit-root coefficients** (PhD thesis).

2. **Restrictions on Weil polynomials of Jacobians of hyperelliptic curves** (joint with Edgar Costa, Ravi Donepudi, Valentijn Karemaker, Caleb Springer, and Mckenzie West). In *Arithmetic geometry, number theory, and computation* (Simons Symposia); also available at `https://arxiv.org/abs/2002.02067`.

3. **On an Inequality of Dimension-like Invariants for Finite Groups** (undergraduate research), available at `https://arxiv.org/abs/1502.00360`.

INVITED TALKS

Spring	2019	Stanford student algebraic geometry seminar
Spring	2018	Berkeley Undergraduate Number Theory Conference

TEACHING AT
ILLINOIS

Fall	2023	Fundamental Mathematics (introduction to proofs)
Spring	2024	Fundamental Mathematics (introduction to proofs)

TEACHING AT
BERKELEY

Summer	2015	Instructor, Calculus II
Fall	2017	Instructor, Putnam exam seminar
Fall	2021	Teaching assistant, Calculus I
(6×)		Teaching assistant, Calculus II
Spring	2023	Teaching assistant, Multivariable calculus
Fall	2015	Teaching assistant, Linear algebra and differential equations
(3×)		Teaching assistant, Discrete math

AWARDS AND HONORS	2015–16	UC Berkeley Outstanding Graduate Student Instructor award
	2017	Invited by a student to the TAAP scholars Professors Dinner
		• Scholarship program for low-income, first-generation, and underrepresented students

ACTIVITIES ORGANIZED	Spring	2023	Arithmetic geometry RTG workshop, UC Berkeley
	Spring	2021	Arithmetic geometry RTG workshop (Jennifer Balakrishnan working session), UC Berkeley (online)
	Fall	2020	Berkeley Undergraduate Number Theory Conference (online)
	Spring	2019	UC Berkeley student number theory seminar
	Spring	2018	Arithmetic geometry RTG workshop (Max Lieblich working session), UC Berkeley
	Spring	2016	UC Berkeley student arithmetic geometry seminar

CONFERENCES AND WORKSHOPS ATTENDED	Fall	2023	Western Algebraic Geometry Symposium, WUSTL
	Summer	2021	PCMI session on number theory informed by computation (online)
	Spring	2021	Arithmetic geometry RTG workshop, UC Berkeley (online)
	Spring	2020	Arizona Winter School, University of Arizona
	Summer	2019	Explicit methods in arithmetic geometry in characteristic p (AMS MRC), Rhode Island
	Spring	2019	Western Algebraic Geometry Symposium, UC Berkeley
	Spring	2019	Arizona Winter School, University of Arizona
	Summer	2018	Witt vectors, deformations, and absolute geometry, University of Vermont
	Spring	2018	Arithmetic geometry RTG workshop, UC Berkeley
	Spring	2018	Arizona Winter School, University of Arizona
	Spring	2017	Arizona Winter School, University of Arizona
	Summer	2016	Higher Dimensional Algebraic Geometry, University of Utah
	Spring	2015	Western Algebraic Geometry Symposium, UC Davis

OUTREACH	2019–	Mathematical advisor, PrimeGrid (distributed computing project)
	2018–	Volunteer, Julia Robinson Mathematics Festival
	2018	Presenter, Celebration of Mind (recreational math festival)
	2015–	Active user on Math StackExchange, > 7000 reputation

MISC SERVICE	Have served as a referee for publication

SUMMER WORK EXPERIENCE	2017	Graduate assistant, Cornell SPUR (undergraduate research)
		• Generating sequences of finite groups, assisting Keith Dennis
	2011-12, 2014	Counselor, Ross Mathematics Program
		• Summer number theory camp at the Ohio State University

INDEPENDENT STUDY ADVISED	Spring 2016	Finite group representations and permutation groups

PUTNAM EXAM	2011	N1 (8th place)
	2013	N2 (23rd place), part of Stanford's 3rd place team
	2017	Deputy organizer (under Olga Holtz) for Berkeley's 7th place team; wrote Berkeley's mock Putnam exam

LANGUAGES	English (native), Spanish (intermediate), French (can read mathematical writing)