Sachi Hashimoto

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Employment

Brown University, Tamarkin Assistant Professor . . . . July 2023 - present

Max Planck Institute for Mathematics in the Sciences, Postdoc . . . . June 2022 - June 2023

Education

Boston University . . . . May 2022
PhD in Mathematics
Advisor: Jennifer Balakrishnan

University of Chicago . . . . June 2014
BA in Mathematics with General and Departmental Honors

Preprints and publications

10. "Local heights on hyperelliptic curves and quadratic Chabauty" (with L. Alexander Betts, Juanita Duque-Rosero, and Pim Spelier), arXiv:2401.05228

9. "Towards a Classification of Isolated j-invariants" (with Abbey Bourdon, Timo Keller, Zev Klagsbrun, David Lowry-Duda, Travis Morrison, Filip Najman, and Himanshu Shukla, and an appendix by Maarten Derickx and Mark van Hoeij), arXiv:2311.07740.

8. "Self-dual matroids from canonical curves" (with Alheydis Geiger, Bernd Sturmfels, and Raluca Vlad), to appear in *Experimental Mathematics*.

7. "Geometric quadratic Chabauty and p-adic heights" (with Juanita Duque-Rosero and Pim Spelier), *Expositiones Mathematicae*, **41** (2023), no. 3, 631–674.

6. "Quadratic Chabauty and p-adic Gross–Zagier", *Transactions of the American Mathematical Society*, **376** (2023), no. 5, 3725-3760.

5. "A geometric linear Chabauty comparison theorem" (with Pim Spelier), *Acta Arithmetica*, **202** (2022), no. 1, 67–88.

4. "A transcendental Brauer–Manin obstruction to weak approximation on a Calabi–Yau threefold" (with Katrina Honigs, Alicia Lamarche, Isabel Vogt, and an appendix by Nicolas Addington), *Research in Number Theory*, **8** (2022), no. 1, Paper No. 12.

3. "38406501359372282063949 and all that: Monodromy of Fano Problems" (with Borys Kadets), *International Mathematics Research Notices IMRN 2022*, no. 5, 3349–3370.

2. "Chabauty–Coleman computations on rank 1 Picard curves" (with Travis Morrison), *Arithmetic Geometry, Number Theory, and Computation*, Simons Symposia, Springer, 2021, 485-506.

1. "Computing rational points on rank 0 genus 3 hyperelliptic curves" (with María de Frutos-Fernández), *Arithmetic Geometry, Number Theory, and Computation*, Simons Symposia, Springer, 2021, 449-460.

Fellowships and Grants

AMS-Simons Travel Grant, 2023 - 2025.

Directed Reading Program Seed Funding Grant (DRP Network), Fall 2018.

NSF Graduate Research Fellowship, 2018 - 2022.

Clare Boothe Luce Fellowship (Henry Luce Foundation), 2017 - 2019.

Invited talks

Conference and workshop talks

June 2024: Guest lecture, Connecticut Summer School in Number Theory, University of Connecticut, Storrs (planned).

January 2023: Special session on arithmetic geometry with a view toward computation, Joint Mathematics Meetings.

April 2022: Combinatorics & Nonlinear Algebra Day, Brown University.

September 2020: Monodromy and Galois groups in enumerative geometry and applications, ICERM.

April 2019: AMS Graduate Student Conference in Algebraic Geometry and Number Theory, Brown University.

February 2019: BU Data Science Day, poster and lightning talk, Boston University.

Seminar talks

March 2024: Number theory seminar, Dartmouth (planned).

February 2024: Algebra, Geometry, and Number Theory Seminar, Tufts, (planned).

February 2024: Number theory seminar, University of Wisconsin - Madison (planned).

October 2023: Algebra seminar, Brown University.

May 2023: International Seminar on Automorphic Forms, online.

May 2023: Number theory seminar, Universität Heidelberg.

March 2023: Séminaire de théorie des nombres, Institut Fourier.

February 2023: Oberseminar Algebra & Number Theory, Universität Ulm.

January 2023: Oberseminar Zahlentheorie und Arithmetische Geometrie, Leibniz Universität Hannover.

December 2022: Number theory seminar, University of Wisconsin - Madison.

November 2022: Algebra, Geometry, and Number Theory seminar, University of Leiden.

November 2022: Number theory seminar, University of Barcelona.

October 2022: Nonlinear algebra seminar, Max Planck Institute for Mathematics in the Sciences.

February 2022: AGNT Seminar, Rice.

February 2022: Algebra seminar, University of Groningen.

April 2021: AMS Invited Talk, graduate student chapter, University of Connecticut, Storrs.

February 2021: Number theory seminar, University of Georgia.

February 2021: Algebra seminar, Brown University.

November 2020: Algebraic geometry & number theory seminar, IST Austria.

September 2020: Algebra seminar, Virginia Tech.

August 2020: POINT, New Developments in Number Theory, online.

May 2020: Experimental Talks in Algebraic Geometry, online.

September 2019: Algebra/Number theory seminar, Wesleyan.

Teaching and outreach

Events and short programs

Canada/USA Mathcamp, visitor . . . . July 2019

PROMYS Math Circles Field Day, mentor . . . . November 2019, February 2022

Harvard GIIM Women in Mathematics and Statistics, panelist . . . . April 2018

PROMYS Math Circles Field Day, speaker . . . . February 2018, May 2019

Proof School Spring Math Festival, director . . . . April 2017

Proof School Love Math! A festival for girls, co-director . . . . Fall 2016, 2017, 2018, 2019

Canada/USA Mathcamp, instructor . . . . Summer 2015, 2016

Northwestern University Splash, teacher 2012, 2013

MIT Splash, teacher . . . . November 2009, 2010, 2011, 2012, 2013

Teaching and mentoring (long-term)

Brown University, Linear algebra (Math 0520 Section 07), Instructor . . . . Spring 2023

Brown University, Linear algebra (Math 0520 Section 05), Instructor . . . . Fall 2023

Brown University, Linear algebra (Math 0520 Section 04), Instructor . . . . Fall 2023

BU Directed Reading Program, co-director and mentor . . . . 2018 - 2022

BU Graduate Women in Science and Engineering, mentor . . . . 2017 - 2018

Proof School Mathematics Teacher (secondary school) . . . . 2015 - 2017

University of Chicago, Young Scholars Program, problem session leader . . . . Winter and Spring 2012

University of Chicago Splash Chicago, teacher and board member . . . . 2011 - 2014

Professional Service

Fall 2023 - Spring 2024: *Number Theory / Algebra Seminar*, Co-organizer, Brown University.

April 2023: *Number theory meets tropical geometry: Semistable Models of Curves*, Organizer, Max Planck Institute for Mathematics in the Sciences.

Summer 2022: *ICM preparatory seminar*, Co-organizer, Max Planck Institute for Mathematics in the Sciences.

Fall 2019: *Boston University Number Theory Expository Seminar*, Topic: Gross–Zagier, Organizer, Boston University.

June 2019: *Mathematics Research Community: Explicit Methods in Arithmetic Geometry in Characteristic p*, Assistant, Whispering Pines, Rhode Island.

May 2018: *Connecticut Number Theory School*, Graduate Assistant, University of Connecticut, Storrs.

February 2018: *Graduate Workshop in Algebraic Geometry for Women and Mathematicians of Minority Genders*, Teaching Assistant for the course on explicit Coleman integration, MIT.

Refereeing: ANTS XV, BIRS, Math. Comp.