Saket Shah

saketmshah@gmail.com, sakets@umich.edu
+1 (732) 666-7534

Education

University of Michigan – Ann Arbor, Ann Arbor, MI — September 2021 – May 2027 (expected)
– **Degree**: PhD in Mathematics, advisor: Alex Perry
Princeton University, Princeton, NJ — September 2017 – May 2021
– **Degree:** Bachelor of Arts (AB) in Mathematics with Highest Honors, senior thesis advisor: János Kollár

Awards

Rackham Predoctoral Fellowship — University of Michigan, 2026
President's Challenge Award — University of Michigan, 2024

Research

Equivalences via twisted hyperholomorphic sheaves from transverse Lagrangian fibrations (with Moritz Harlieb), preprint. arXiv:2608.13403

Semiorthogonal decompositions and components of derived categories of orthogonal Grassmannian fibrations, submitted. arXiv:2604.12072

Twisted Arinkin transforms and derived categories of moduli spaces on Kuznetsov components, (with Moritz Hartlieb), submitted. arXiv:2603.11350

Flips for spaces of quadrics on del Pezzo varieties, submitted. arXiv:2602.07366

Failure of derived Torelli for supersingular elliptic curves, (with Riku Kurama), unpublished. Available at my personal webpage.

Stability conditions on crepant resolutions of quotients of product varieties, (with Alex Perry)
To appear in Algebr. Geom. arXiv:2404.09121

On decompositions for Fano schemes of intersections of two quadrics, (with P. Belmans, J. Bose, S. Frei, B. Gould, J. Hotchkiss, A. Lamarche, J. Petok, C. Rodriguez Avila)
Adv. Math. 480 (2025), Paper No. 110506.

Other writing

Senior thesis, *expository work* — Fall 2020 – Spring 2021
– (-1)*-divisors, Cremona transformations, and Mukai's counterexample to Hilbert's 14th problem*
Junior paper, *expository work* — Spring 2020
– *An introduction to the McKay correspondence and some worked examples*

Departmental service and mentorship

Ross business school calculus graduate student advisor (course design and course materials), University of Michigan — Summer 2025 – Fall 2025
Graduate student advisory committee member, University of Michigan — Fall 2024 – Fall 2025
UM algebraic geometry student seminar co-organizer, — Spring 2022 – current
UM deformation theory seminar co-organizer, — Spring 2023
Directed reading program mentor
– Supervised undergraduate student reading on elliptic curves, — Fall 2024
– Supervised undergraduate student reading on algebraic curves, — Spring 2022
UM algebraic geometry summer problem sessions, — Summer 2022, Summer 2023, Summer 2024, Summer 2025

Other service

Referee for International Mathematics Research Notices and Épijournal de Géométrie Algébrique

Teaching

Graduate Student Instructor, University of Michigan – Ann Arbor — September 2021 – Fall 2025

- (MAT115 ROSS) Calculus I, Fall 2025 (instructor of record)
- (MAT115) Calculus I, Fall 2021, Fall 2023 (instructor of record)
- (MAT116) Calculus II, Spring 2021 (instructor of record)
- (MAT105) Precalculus, Fall 2022 (instructor of record)
- (MAT592) Algebraic topology, Spring 2022 (grader)
- (MAT593) Abstract Algebra I, Fall 2024 (grader, TA)
- (MAT596) Complex Analysis, Fall 2024 (grader)
- Math Learning Center tutor, Spring 2022, Fall 2024

Undergraduate Course Assistant, Princeton University — September 2018 – May 2021

- (MAT215) Introduction to Real Analysis, Fall 2018, 2019, 2020
- (MAT217) Introduction to Linear Algebra, Spring 2019, 2020, 2021

Invited talks

Columbia Algebraic Geometry Seminar Columbia University, NY — December 2026

Princeton Algebraic Geometry Seminar Princeton University, NJ — December 2026

Yale Algebraic Geometry Seminar Yale University, CT — November 2026

AMS Sectional Meeting: Special Session on Derived Categories, Stability Conditions, and HMS Boston College, MA — March 2026

NYU Number Theory Seminar New York University, NY — February 2026

JMM: Special Session on Moduli of Surfaces Washington, DC — January 2026

Michigan Algebraic Geometry Symposium, University of Michigan, MI — April 2025

DOGS Seminar (remote) — March 2025

AMS Sectional Meeting: Special Session on K-trivial varieties Clemson, NC — March 2025

Academia Sinica Algebraic Geometry Seminar (remote) — June 2024

Poster presentations and lightning talks

Cubic Fourfolds, Gushel–Mukai Fourfolds, and Hyperkähler Manifolds, ICERM workshop, Brown University, RI — October 2026

Mirror Symmetry and Homological Methods in Algebraic Geometry, RGAS school, University of Zaragoza, Spain — June 2026

Hyperkähler varieties, derived categories, and moduli spaces, FRG workshop, Columbia University, NY — February 2025

New perspectives on hyperkähler manifolds and moduli of vector bundles, Grand Hotel San Michele, Cetraro, Italy — September 2024

Other conferences and workshops

Algebraic Geometry Summer Research Institute, Colorado State University, CO — July – August 2025

Algebraic Geometry Summer Research Institute Bootcamp, Colorado State University, CO — July 2025

Recent Developments in Noncommutative Algebraic Geometry, SLMath, CA — April 2024

Introductory Workshop: Noncommutative Algebraic Geometry, SLMath, CA — February 2024

Brauer groups and derived categories, FRG workshop, Northwestern University, IL — October 2023

Introduction to derived algebraic geometry, SLMath, CA — June-July 2023

Derived categories, arithmetic and geometry, Mathematical Research Communities, NY — June 2023

AGNES, UMass Amherst, MA — November 2022

Derived categories, noduli Spaces, and hyperkähler varieties minischool, FRG minischool, University of Michigan, MI — July 2022

Other talks

UM AG learning seminar

- *Albanese graphs and cographic matroids*, after Engel, de Gaay Fortman and Schreieder, April 2026
- *Irrationality of cubic fourfolds*, after Katzarkov, Kontsevich, Pantev and Yu, November 2025
- *Deformation theory: infinity-categories, simplicial commutative rings and the cotangent complex*, March 2024

UM preprint AG seminar

- *Derived categories of Fano varieties of lines*, after Bottini and Huybrechts, April 2025
- *Homological Bondal-Orlov localization conjecture for rational singularities*, after Mauri and Shinder, April 2023
- *Motivic invariants of birational maps*, after Lin and Shinder, October 2022

UM student AG seminar

- *Hyperkahler varieties and compactified Jacobian fibrations*, January 2026
- *Noncommutative algebraic geometry*, January 2025
- *Complete intersections of two quadrics in projective space*, September 2024
- *K3 surfaces*, February 2023
- *Derived categories for curves*, December 2022
- *27 lines on a cubic surface*, April 2022
- *Cox rings and Mukai's counterexample to Hilbert's 14th problem*, December 2021