

Zengrui Han

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Department of Mathematics
University of Maryland, College Park
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APPOINTMENTS

- 2025–2028 University of Maryland, College Park
Brin Postdoctoral Fellow
- 2020–2021 University of Science and Technology of China
Research Assistant

EDUCATION

- Ph.D. Rutgers, the State University of New Jersey, 2020–2025
Advisor: Lev Borisov
Dissertation: GKZ hypergeometric systems and toric mirror symmetry
- B.S. University of Science and Technology of China, 2016–2020

RESEARCH AREAS

Algebraic Geometry, especially mirror symmetry and related areas.

PUBLICATIONS AND PREPRINTS

- 2025 Hanlon-Hicks-Lazarev resolution revisited, with Lev Borisov. arXiv:2509.11077. Submitted.
GKZ hypergeometric systems and toric mirror symmetry. Ph.D. Thesis.
- 2024 Stringy Hodge numbers of Pfaffian double mirrors and Homological Projective Duality. arXiv:2409.17449. Submitted.
Central charges in local mirror symmetry via hypergeometric duality. **Advances in Mathematics**, Volume 480, Part B (2025): 110502. arXiv:2404.16258.
- 2023 Analytic continuation of better-behaved GKZ systems and Fourier-Mukai transforms, **Épjournal de Géométrie Algébrique**, Volume 9 (2025), Article no. ii. arXiv:2305.12241
On hypergeometric duality conjecture, with Lev Borisov, **Advances in Mathematics**, Volume 442 (2024): 109582. arXiv:2301.01374
- 2019 On duality of certain GKZ hypergeometric systems, with Lev Borisov and Chengxi Wang, **Asian Journal of Mathematics**, Volume 25 (2021), No.1, 65–88. arXiv:1910.04039

TALKS AND PRESENTATIONS

- 2026 AMS Spring Eastern Meeting 2026, Special Session on Group Actions and Combinatorics in Algebraic Geometry and Commutative Algebra, Boston College, Mar 2026.

- 2025 JHU-UMD Algebra and Number Theory Day, University of Maryland, Nov 2025.
 Georgia Algebraic Geometry Symposium, mini-talk, Mar 2025
 Syzygies and Mirror Symmetry Virtual Seminar, Feb 2025.
- 2024 Western Algebraic Geometry Symposium, poster, University of Arizona, Nov 2024.
 Algebraic Geometry Northeastern Series, 5-min talk, Dartmouth College, Nov 2024.
 Algebraic Geometry Northeastern Series, poster, Dartmouth College, Nov 2024.
 Rutgers Algebra Seminar, Rutgers University, Oct 2024
 Columbia Enumerative Geometry Seminar, Columbia University, Sept 2024
 Richmond Geometry Meeting, poster, Virginia Commonwealth University, Aug 2024.
 Rutgers Algebra Seminar, Rutgers University, April 2024
- 2023 Algebraic Geometry Northeastern Series, 5 minutes talk, University of Pennsylvania, Oct 2023
 Rutgers Algebra Seminar, Rutgers University, Feb 2023

TEACHING

University of Maryland

- Math 301: Introduction to Mathematical Proof, Spring 2026
 Math 402: Algebraic Structures, Fall 2025

Rutgers University

- Math 551: Abstract Algebra I, TA, Fall 2024
 Math 311: Precalculus, TA, Spring 2024
 Math 552: Abstract Algebra II, TA, Spring 2024
 Math 551: Abstract Algebra I, TA, Fall 2023
 Math 477: Mathematical Theory of Probability, TA, Fall 2023
 Math 244: Differential Equations for Engineering and Physics, TA, Spring 2023
 Math 354: Linear Optimization, TA, Fall 2022
 Math 251: Multivariable Calculus, TA, Spring 2022
 Math 251H: Multivariable Calculus, TA, Fall 2021

AWARDS AND HONORS

- 2025 Rutgers SAS Fellowship, Rutgers University, 2025
 2024 Summer PhD student Research Fellowship, Rutgers University, 2024
 2019 Huang Yu Memorial Scholarship, University of Science and Technology of China, 2019
 2018 Outstanding Student Scholarship, Silver Award, University of Science and Technology of China
 2017 Outstanding Student Scholarship, Silver Award, University of Science and Technology of China
 2015 Chinese Mathematical Olympiad (CMO), Bronze Medal, 2015

Updated January 2026