

MENGWEI HU

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EDUCATION

Ph.D. in Mathematics, Yale University 2020 - 2026

Advisor: Prof. Ivan Losev

B.Sc. (Honor) in Mathematics, Sichuan University 2016 - 2020

INTERESTS

Geometric representation theory, specifically on symmetric pairs and nilpotent orbits, Nakajima quiver varieties, deformation quantizations and Harish-Chandra (\mathfrak{g}, K) -modules.

RESEARCH

- *On certain Lagrangian subvarieties in minimal resolutions of Kleinian singularities.* Submitted. [arXiv:2504.08717](#).
- *Presentations of diagram categories.* PUMP J. Undergrad. Res., 3:1-25, 2020.

AWARDS

Fan Family Fellowship Endowment, Yale University 2020 - 2021

CONFERENCE TALKS

- Seattle Noncommutative Algebra Conference, University of Washington Dec 2025
- AMS Fall Central Sectional Meeting, St. Louis University Oct 2025
- AWM Research Symposium, UW-Madison May 2025
- Southeastern Lie Theory Workshop XV, College of Charleston May 2025
- AMS Fall Western Sectional Meeting, UCR Oct 2024
- AMS Fall Eastern Sectional Meeting, UAlbany Oct 2024

SEMINAR TALKS

- Geometry, Physics, and Representation Theory Seminar, Northeastern University Oct 2025
- Algebra Seminar, University of Georgia Oct 2025
- Research Visit, UT Austin Oct 2025
- Topology Seminar, Johns Hopkins University Sep 2025
- Algebra Seminar, University at Buffalo Sep 2025
- Algebra Seminar, Syracuse University Sep 2025
- Algebra Seminar, UO Mar 2025
- Algebra Seminar, UCLA Mar 2025
- Geometry, Symmetry and Physics Seminar, Yale Jan 2025

TEACHING

Instructor of Record, Yale University

- MATH 115: Calculus of Functions of One Variable II *Fall 2024, Spring 2026*
- MATH 112: Calculus of Functions of One Variable I *Fall 2022, Fall 2023*
- MATH S118E: Introduction to Functions of Several Variables, **Syllabus** *Summer 2024*
- Teaching Assistant: Linear Algebra, Calculus *Spring, Summer, Fall 2021, Summer 2023*
- Certificate of College Mathematics Teaching Preparation *2023 - 2026**

MENTORING

- REU Co-mentor: Superalgebras and Polynomial Spaces *Summer 2025*
- Mentor, Yale Math Buddies Program for First-Year Graduate Students *Fall 2022*
- Mentor, Yale Take an Undergraduate to School *Spring 2022*

SERVICE AND OUTREACH

- Graduate School Panelist, Women in Mathematics in New England *Sep 2024*
- Graduate Instructor Panelist, Lang Teaching Seminar at Yale *Mar 2024*
- Co-organizer, Joint Yale-Columbia Representation Seminar *Fall 2022*
- Co-organizer, Yale Graduate Student Seminar *Spring 2022*
- Cohort Representative, Yale Graduate Student Advisory Committee *2023 - 2026*
- Sports Chair, Summer Undergraduate Math Research at Yale *Summer 2025*

CONFERENCES ATTENDED

- Workshop on Cluster Algebras and Braid Varieties, UO *Aug 2025*
- Categorification and Symplectic Duality Workshop, NEU (presented a poster) *Jun 2025*
- Women in Mathematics in New England, Smith College (15-min student talk) *Sep 2024*
- Representation Theory and Related Geometry: Progress and Prospects, UGA (12-min talk) *May 2024*
- MSRI New Directions in Representation Theory, Hawaii (3-min participant talk) *Jun 2022*
- Summer School on Coulomb Branches and Knot Homology, MIT *Jun 2023*
- Summer School on Quantized Symplectic Singularities and Applications to Lie Theory, MIT *Jun 2022*