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.

TALKS

- Algebra Seminar, University at Buffalo   *Sep 2025*
- Algebra Seminar, Syracuse University   *Sep 2025*
- GPRT Seminar, Northeastern University   *Fall 2025**
- Topology Seminar, Johns Hopkins University   *Fall 2025**
- Algebra Seminar, University of Georgia   *Fall 2025**
- AWM Research Symposium Special Session, UW-Madison   *May 2025*
- Southeastern Lie Theory Workshop XV, College of Charleston   *May 2025*
- Algebra Seminar, University of Oregon   *Mar 2025*
- Algebra Seminar, UCLA   *Mar 2025*
- Geometry, Symmetry and Physics Seminar, Yale   *Jan 2025*
- AMS Fall Western Sectional Meeting Special Session, UCR   *Oct 2024*
- AMS Fall Eastern Sectional Meeting Special Session, UAlbany   *Oct 2024*

AWARDS

Fan Family Fellowship Endowment, Yale University   *2020 - 2021*

TEACHING

Instructor, 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 Take an Undergraduate to School	*Spring 2022*

SERVICE AND OUTREACH

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

CONFERENCES ATTENDED

· 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*