

MENGWEI HU

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EDUCATION

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| Ph.D. in Mathematics , Yale University | 2020–2026 |
| Advisor: Prof. Ivan Losev | |
| B.Sc. (Honor) in Mathematics , Sichuan University | 2016–2020 |

RESEARCH INTERESTS

Geometric representation theory and its connections to algebraic and symplectic geometry. In particular, geometric tools for unitary representations of Lie groups and involutions of quiver varieties.

PUBLICATIONS

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- Hu, M. On certain Lagrangian subvarieties in minimal resolutions of Kleinian singularities. *Submitted to Transform. Groups*. DOI: 10.48550/arXiv.2504.08717.
 - Hu, M. Presentations of diagram categories. *PUMP J. Undergrad. Res.* 2019, 3, 1–25. DOI: 10.46787/pump.v3i0.2256.

FELLOWSHIPS, AWARDS & GRANTS

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| • Fan Family Fellowship , Yale University | 2020–2021 |
| • Conference Travel Fellowship , Yale University | 2025 |
| • Symposium Travel Grant , Association for Women in Mathematics | 2025 |
| • China National Scholarship , China Scholarship Council | 2017, 2019 |
| • Gold Medal , The 10th Chinese Mathematical Contest for College Students | 2019 |

INVITED TALKS

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| • Seattle Noncommutative Algebra Conference, University of Washington | Dec 2025 |
| • AMS Central Sectional (Geometry, Representation Theory & Noncommutative Algebra), SLU | Oct 2025 |
| • Representation Theory Seminar, UMass Amherst | Nov 2025 |
| • Algebra Seminar, University of Georgia | Oct 2025 |
| • Topology Seminar, Johns Hopkins University | Sep 2025 |
| • Algebra Seminar, University at Buffalo | Sep 2025 |
| • Algebra Seminar, Syracuse University | Sep 2025 |
| • AWM Research Symposium (Mathematical Physics & Representation Theory), UW-Madison | May 2025 |
| • Algebra Seminar, University of Oregon | Mar 2025 |
| • Algebra Seminar, UCLA | Mar 2025 |
| • Geometry, Symmetry and Physics Seminar, Yale | Jan 2025 |
| • AMS Western Sectional (Geometric & Categorical Representation Theory), UC Riverside | Oct 2024 |
| • AMS Eastern Sectional (Singularities in Commutative Algebra), UAlbany | Oct 2024 |

Contributed Presentations

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| • International Congress of Mathematicians (ICM) 2026, Philadelphia (short communication) | Jul 2026 |
| • Categorification and Symplectic Duality Workshop, Northeastern University (poster) | Jun 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*
- **Certificate of College Mathematics Teaching Preparation** *2025*
- Teaching Assistant: Linear Algebra, Calculus *Spring, Summer, Fall 2021, Summer 2023*

MENTORING

- **REU Mentor**, Superalgebras and Polynomial Spaces *Summer 2025*
- Mentor, American Women in Mathematics Mentor Network *2025–present*
- Mentor, Yale Math Buddies Program for First-Year Graduate Students *Fall 2022*
- Mentor, Yale Take an Undergraduate to School *Spring 2022*

SERVICE AND OUTREACH

Professional Service

- Reviewer, zbMATH Open *2025–present*
- Graduate School Panelist, Women in Mathematics in New England *Sep 2024*
- Graduate Instructor Panelist, Lang Teaching Seminar at Yale *Mar 2024*

Organizational Service

- Organizer, Joint Yale-Columbia Representation Seminar *Fall 2022*
- Organizer, Yale Graduate Student Seminar *Spring 2022*

Community Service

- Sports Chair, Yale Research Experience for Undergraduate Students *Summer 2025*
- Committee Member, Yale Graduate Student Advisory Committee *2023–2026*
- Network Member, American Women in Mathematics Research Networks: WINART, WICA *2025–present*