

# MENGWEI HU

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## EDUCATION

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| <b>Ph.D. in Mathematics</b> , Yale University            | 2020–2026 |
| Advisor: Prof. Ivan Losev                                |           |
| <b>B.Sc. (Honor) in Mathematics</b> , 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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| • <b>Fan Family Fellowship</b> , Yale University                                 | 2020–2021  |
| • <b>Conference Travel Fellowship</b> , Yale University                          | 2025       |
| • <b>Symposium Travel Grant</b> , Association for Women in Mathematics           | 2025       |
| • <b>China National Scholarship</b> , China Scholarship Council                  | 2017, 2019 |
| • <b>Gold Medal</b> , 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 and 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

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- **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

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- **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

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### Professional Service

- Reviewer, zbMATH Open *2025–*
- 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–*