# Yandi Wu

Rice University
Department of Mathematics
Houston, TX 77005

yandi.wu@rice.edu
https://yandiwu.github.io/


**Employment**

**Lovett Instructor** — 2024 -
Rice University — Houston, TX

**Education**

**University of Wisconsin, Madison** — 2018 - 2024
PhD Mathematics, Advisors: Tullia Dymarz, Caglar Uyanik — Madison, WI
Minor in Computer Science

**University of California, Berkeley** — 2014 - 2018
BA Mathematics (High Honors) — Berkeley, CA

**Budapest Semesters in Mathematics** — Fall 2017
Semester Abroad — Budapest, Hungary

**Research Interests**

Low-dimensional topology, geometric group theory, hyperbolic geometry, and geometric rigidity theory, including applications to orbifolds, manifolds, and generalizations.

**Publications & Preprints**

1. Filling Links and Essential Systole.
   **arXiv Prepring 2025.** (w/ C. Leininger). Submitted.
2. Subactions for Locally CAT(-1) Spaces.
   **arXiv Preprint, 2024.** (w/ D. Constantine, E. Shrestha). Under Revision.
3. Isospectral Hyperbolic Surface Amalgams.
   **arXiv Preprint, 2024.** Under revision.
4. Marked Length Spectrum Rigidity for Surface Amalgams.
   Accepted: to appear in **Trans. Amer. Math. Soc.**
5. A Topologically Rigid Set of Quotients of the Davis Complex.
   **Geom. Dedicata**, 217 (2023), 1-20.

**Honors & Awards**

**Excellence in Research Graduate Student Award** — 2023
"For significant and substantial contributions to research" — Madison, WI

**Elizabeth S. Hirschfelder Award** — 2022
"For exceptional research done by a female graduate student" — Madison, WI

**Outstanding Service Award** — 2022
"For special service to the department" — Madison, WI

**Outstanding TA Award** — 2021
"For excellence in the classroom across multiple semesters" — Madison, WI

**Invited Talks (Conferences)**

Midwest Summer School in Geometry, Topology, and Dynamics — Jun 2025
(Madison, WI)

Spring Topology and Dynamics Conference (Newport News, VA) — March 2025
Session on Geometric Topology

| | | |
|---|---|---|
| | Joint Math Meetings (Seattle, WA)<br>Women in Groups, Geometry, and Dynamics Special Session | Jan 2025 |
| | KIAS-Rice Workshop on Geometric Topology (Seoul, Korea) | Sept 2024 |
| | AMS Central Fall Sectional Meeting (San Antonio, TX)<br>Geometric group theory and low dimensional topology | Sept 2024 |
| | AMS Central Spring Sectional Meeting (Milwaukee, Wisconsin)<br>Special session in developments in hyperbolic-like geometry and dynamics | April 2024 |
| | Joint Math Meetings (San Francisco, CA)<br>Session on Geometric Group Theory | Jan 2024<br>Jan 2024 |
| | World of GroupCraft III (online) | Sept 2023 |
| | Spring Topology and Dynamics Seminar (online)<br>Special Session in Geometric Group Theory | Mar 2023 |
| **Invited Talks (Seminars)** | University of Virginia Geometry Seminar | November 2025 |
| | Boston University Geometry, Topology, and Dynamics Seminar | October 2025 |
| | Fribourg Seminars on Analysis & Geometry on Metric Spaces | May 2025 |
| | Yale University Geometry & Topology Seminar | Dec 2024 |
| | Wake Forest Dynamics Seminar | Nov 2024 |
| | Wesleyan University Topology, Geometry, & Dynamics Seminar | Dec 2023 |
| | University of Minnesota, Twin Cities Geometry Seminar | Nov 2023 |
| | Vanderbilt University Topology & Group Theory Seminar | Nov 2023 |
| | Brandeis University Topology Seminar | Nov 2023 |
| | University of Illinois, Chicago Geometry, Topology, & Dynamics Seminar | Nov 2023 |
| | University of Wisconsin, Madison Dynamics Seminar | Oct 2023 |
| | Rice University Topology Seminar | Aug 2023 |
| | University of Wisconsin, Milwaukee Topology Seminar | April 2023 |
| | The Ohio State University Topology and GGT Seminar | Nov 2022 |
| | BSU-Toledo Joint Geometry and Topology Seminar | Sept 2022 |
| **Contributed Talks** | Underrepresented Students in Topology and Algebra Research Symposium | Mar 2023 |
| **Service & Outreach** | **Member, Rice Math Department Colloquium Committee** (Fall 2024): Invite and host external speakers for weekly departmental colloquium. | |

**Co-organizer, UW Madison AMS Student Chapter Seminar** (Spring 2021 - Spring 2023): Plan and organize weekly department-wide graduate student seminar.

**Co-organizer, Gender Minorities in Mathematics At Wisconsin** (Fall 2020 - Spring 2022): Organize professional development and social events for gender minorities in the department, coordinate GMMaW colloquiums.

**Member, UW Madison Committee on TA Policies and Procedures** (Spring 2022): Evaluate TAs in the math department, determine policies for TA responsibilities.

**Referee Work** (2024 - present): *Groups, Geom., Dyn.*

## Mentoring

**Madison Experimental Mathematics Lab** — Spring 2023
Project: *Hyperbolic Geometry and Crochet* — Madison, WI
Graduate mentor for four undergraduate students

**Big Ideas in Dynamics** — Fall 2022
Topic: *Length functions on currents and applications to dynamics & counting* — Online
Graduate Mentor for graduate reading group

**Madison Experimental Mathematics Lab** — 2022 - 2023
Project: *Random Symmetrics of Hyperbolic Space* — Madison, WI
Graduate mentor for four undergraduate students

**Girls' Night Out** — Spring 2020
Project: Mathematics of Epidemics — Madison, WI
Graduate Mentor for three high school students

**Directed Reading Program** — Fall 2018
Topic: *Office Hours with a Geometric Group Theorist* — Madison, WI
Graduate mentor for three undergraduate students

## Outreach Talks

SIAM Student Chapter Seminar — Mar 31, 2023
*How I landed my summer internship* — Madison, WI

UW Madison Math Circle — Feb 2019, Sept 2021
*Cut and Paste Topology* — Madison, WI

## Teaching Experience

**Instructor, Rice University** — Houston, TX
Math 355 (Linear Algebra) — Spring 2025
Math 290 (Introduction to Proof Writing) — Spring 2025, Fall 2025
Math 102 (Calculus II) — Fall 2024

**Instructor, UW Madison** — Madison, WI
Math 131 (Problem solving in Algebra, Geometry, and Statistics) — Summer 2021

**Teaching Assistant Coordinator** — Madison, WI
Math 234 (Calculus III) — Fall 2021*, Spring 2021*, Fall 2020, Spring 2020*
Math 222 (Calculus II) — Fall 2022*, Spring 2023*
Math 221 (Calculus I) — Fall 2019

**Teaching Assistant** — Madison, WI
Math 222 (Calculus and Analytic Geometry II) — Fall 2018, Spring 2019*

* Received "superior" rating awarded to top 30% of TAs every semester

**Industry Experience**

**Reddit, Ads Prediction Team** — New York, NY
Data Science Intern — Summer 2023

- **Machine Learning**: Implement model calibration techniques to decrease calibration error of decision tree model in production by up to 30 percent.
- **Data Science**: Build Mode dashboards to visualize how different sectors, such as geographic location, ad industry, and user frequency, affect model calibration.
- Present on state-of-the-art model calibration techniques for modern Deep Neural Networks at company-wide Ads Journal Club.

**US Army Corps of Engineers, Geospatial Research Lab** — Alexandria, VA
NSF Mathematical Sciences Graduate Internship Program — Summer 2022

- **Computer vision**: Implement automated building damage assessment by GPU-powered neural networks on satellite images of natural disaster sites.
- **Transfer Learning**: Implement domain adaptation techniques that increased model accuracy by up to 6 percent.
- White paper, *Transfer Learning Techniques for Building Damage Assessment*, and NSF MSGI Research Symposium slides available on website.