

Inyoung Ryu

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RESEARCH INTERESTS

- Surface group representations, Character variety
- Mapping Class Groups and Teichmüller space
- Low-dimensional Topology, Geometric Group Theory

EDUCATION

Texas A&M University

Ph.D. in Mathematics

Aug.2021 – Present

Texas, US

Ulsan National Institute of Science and Technology(UNIST)

Bachelor of Science in Mathematical Science

Mar.2017 – Jul.2021

Ulsan, Korea

- Minor in Computer Science and Engineering

Sabanci University

Erasmus Program

Feb. 2020 – Jun. 2020

Istanbul, Turkey

PUBLICATION/PREPRINTS

On totally hyperbolic non-Fuchsian type-preserving representations

arXiv:2511.13989

Nov. 2025

Connected components of spaces of type-preserving representations

with T. Yang, arXiv: 2502.05078

Jul. 2025

TALKS

Can a non-Fuchsian representation be totally hyperbolic?

ICM satellite - Vanderbilt colloquium series: Groups, geometry, and dynamics (Lightning talk)

Jul. 2026

Tennessee, US

Non-Fuchsian Totally hyperbolic Representations

Young Geometric Group Theory XIV (Poster presentation)

Jun. 2026

Seoul, Korea

Two invariants of type-preserving representations and applications

Topology Seminar, University of Tennessee

Apr. 2026

Tennessee, US

Two invariants of type-preserving representations and applications

Topology & Geometry Seminar, Rutgers University

Apr. 2026

New Jersey, US

Two invariants of type-preserving representations and applications

Algebra & Combinatorics Seminar, Texas A&M University

Mar. 2026

Texas, US

Two invariants of type-preserving representations and applications

Groups & Dynamics Seminar, University of Texas Austin

Mar. 2026

Texas, US

Two invariants of type-preserving representations and applications

Groups & Dynamics Seminar, Texas A&M University

Feb. 2026

Texas, US

Connected components of the space of type-preserving representations

SHSU Junior Colloquium

Nov. 2025

Texas, US

Connected components of the space of type-preserving representations

Ventotene Workshop on Higher dimensional hyperbolic geometry (Lightning talk)

Sep. 2025

Ventotene, Italy

Connected components of the space of type-preserving representations

2K-GATE Workshop, Korea Institute for Advanced Study (Lightning talk)

Jun. 2025

Seoul, Korea

Connected components of the space of type-preserving representations

GTA: Philadelphia 2025, Temple University

May. 2025

Pennsylvania, US

Connected components of the space of type-preserving representations

53rd Barrett Lectures: Recent Development in Geometric Group Theory (Lightning talk)

May. 2025

Tennessee, US

Connected components of the space of type-preserving representations

CIRM School on Geometric structures and discrete group actions

Apr. 2025

Marseille, France

Connected components of the space of type-preserving representations <i>Graduate Student Conference in Topology and Geometry, Indiana University Bloomington</i>	Apr. 2025 <i>Indiana, US</i>
Connected components of the space of type-preserving representations <i>KIAS HCMC Topology Seminar, Korea Institute for Advanced Study (Online)</i>	Feb. 2025 <i>Seoul, Korea</i>
Connected components of the space of type-preserving representations <i>Conference on Geometry and Dynamics in Low Dimensions, IMVAST (Lightning talk)</i>	Jan. 2025 <i>Hanoi, Vietnam</i>
Geometric approach to surface Group Representations <i>Graduate Student Organization Seminar, Texas A&M University</i>	Sep. 2024 <i>Texas, US</i>
Topological components of spaces of Representations <i>Low-dimensional Topology Seminar, Seoul National University</i>	Aug. 2024 <i>Seoul, Korea</i>
Nielsen-Thurston classification <i>GIGEM Conference, Texas A&M University</i>	Apr. 2024 <i>Texas, US</i>
Mapping class group action on Teichmüller Space <i>Graduate Student Organization Seminar, Texas A&M University</i>	Apr. 2024 <i>Texas, US</i>

STUDY ON OTHER INTERESTS

End-periodic maps Group study seminar <i>Texas A&M University</i>	Aug. 2025 – Dec. 2025 <i>Texas, US</i>
Reading Course <i>Texas A&M University, with Tian Yang</i>	Feb. 2022 – Oct. 2023 <i>Texas, US</i>
• Teichmüller Theory and Nielsen-Thurston Classification • Mapping Class Group and Teichmüller Space, Moduli Space • Knot Theory. Jones Polynomial and Alexander Polynomial	
Reading Course <i>Texas A&M University, with Guoliang Yu</i>	Feb. 2022 – May. 2022 <i>Texas, US</i>
• Fredholm Operator and Higher index Theory	
Reading Course <i>Texas A&M University, with Irina Bobkova</i>	Sep. 2022 – May. 2023 <i>Texas, US</i>
• Algebraic Topology, Stable Homotopy Theory	
Low dimensional Topology Seminar <i>Texas A&M University</i>	Feb. 2022 – May. 2023 <i>Texas, US</i>
• Smooth 4-Manifolds and Intersection Forms • Teichmüller theory, Nielson-Thurston Classification	
Interdisciplinary Project <i>UNIST</i>	Sep. 2020 – Feb. 2021 <i>Ulsan, Korea</i>
Undergraduate Research Assistant <i>UNIST</i>	Jul. 2019 – Aug. 2019 <i>Ulsan, Korea</i>

SCHOLARSHIPS/AWARDS

Houston A&M Mothers' Club Outstanding TA Award <i>Texas A&M University</i>	Jul. 2024 <i>Texas, US</i>
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TEACHING/MENTORING

Instructor of record, Math 142 (Business Calculus) <i>Texas A&M University</i>	Jan. 2026 - May. 2026 <i>Texas, US</i>
Direct Reading Program - A first course in Algebraic Topology <i>Texas A&M University</i>	Sep. 2025 - Dec.2025 <i>Texas, US</i>
Grader, MATH 636 (Topology I) <i>Texas A&M University</i>	Sep. 2025 - Dec.2025 <i>Texas, US</i>
Python Lab Assignment, MATH 150 (Functions, Trigonometry and Linear Systems) <i>Texas A&M University</i>	Jul.2025 <i>Texas, US</i>
MATH 467 (Modern Geometry) Grader <i>Texas A&M University</i>	Jan. 2025 - May.2025 <i>Texas, US</i>
No Teaching Assistant Duties, supported by NSF Grant, P.I. - Tian Yang <i>Texas A&M University</i>	Sep. 2024 - Dec.2024 <i>Texas, US</i>
No Teaching Assistant Duties, supported by NSF Grant, P.I. - Tian Yang <i>Texas A&M University</i>	Jul. 2024 – Dec. 2024 <i>Texas, US</i>
Help Session Tutor, Math 142 (Business Calculus) <i>Texas A&M University</i>	Jun. 2024 <i>Texas, US</i>
No Teaching Assistant Duties, supported by NSF Grant, P.I. - Tian Yang <i>Texas A&M University</i>	Jan. 2024 – May. 2024 <i>Texas, US</i>
Grader, Math 636 (Topology I) <i>Texas A&M University</i>	Aug. 2023 – Dec. 2023 <i>Texas, US</i>
Grader, Math 142 (Business Calculus) <i>Texas A&M University</i>	Jul. 2023 <i>Texas, US</i>
Python Labs, Math 151(Engineering Math I) <i>Texas A&M University</i>	Jun. 2023 <i>Texas, US</i>
Teaching Assistant, Math 152(Engineering Math II) <i>Texas A&M University</i>	Jan. 2023 – May. 2023 <i>Texas, US</i>
Teaching Assistant, Math 151(Engineering Math I) <i>Texas A&M University</i>	Aug. 2022 – Dec. 2022 <i>Texas, US</i>
Grader, Math 304 (Linear Algebra) <i>Texas A&M University</i>	Jun. 2022 <i>Texas, US</i>
Grader, Math 423 (Linear Algebra II) <i>Texas A&M University</i>	Jan. 2022 – May. 2022 <i>Texas, US</i>
Grader, Math 467 (Modern Geometry) <i>Texas A&M University</i>	Aug. 2021 – Dec. 2021 <i>Texas, US</i>
Teaching Assistant(Calculus I, Calculus II) <i>Ulsan National Institute of Science and Technology</i>	Mar. 2018 – Dec. 2019 <i>Ulsan, Korea</i>
Calculus I Open Lecture <i>Ulsan National Institute of Science and Technology</i>	Jun.2018 <i>Ulsan, Korea</i>

LEADERSHIP/VOLUNTEER ACTIVITIES

Treasurer <i>Association for Women in Mathematics, Texas A&M University</i> * Women in Math Mentoring Lunch * AWM peer mentoring program	Aug.2022 - May.2023 <i>Texas, US</i>
Teaching Assistant for Math Circle <i>Texas A&M Math Circle</i>	Nov. 2023 <i>Texas, US</i>
Grader for High School Math Contest <i>Texas A&M High School Mathematics Contest</i>	Nov. 2023 <i>Texas, US</i>
Grader for High School Math Contest <i>Texas A&M High School Mathematics Contest</i>	Nov. 2022 <i>Texas, US</i>