

Inyoung Ryu

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INTERESTS

- Surface group representations, Character variety
- Mapping Class Groups and Teichmüller space, Teichmüller Theory
- 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
- Total GPA of 3.99 / 4.3 (95.9 / 100)

Sabanci University

Erasmus Program

Feb. 2020 – Jun. 2020

Istanbul, Turkey

RESEARCH

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

STUDY ON OTHER INTERESTS

End-periodic maps Group study seminar

Texas A&M University

Aug. 2025 – Dec. 2025

Texas, US

Reading Course with Prof. Tian Yang

Texas A&M University

Feb. 2022 – Oct. 2023

Texas, US

- Teichmüller Theory and Nielsen-Thurston Classification
- Mapping Class Group and Teichmüller Space, Moduli Space
- Knot Theory. Jones Polynomial and Alexander Polynomial

Reading Course with Prof. Guoliang Yu

Texas A&M University

Feb. 2022 – May. 2022

Texas, US

- Fredholm Operator and Higher index Theory

Reading Course with Prof. Irina Bobkova

Texas A&M University

Sep. 2022 – May. 2023

Texas, US

- Algebraic Topology, Stable Homotopy Theory

Low dimensional Topology Seminar

Texas A&M University

Feb. 2022 – May. 2023

Texas, US

- Smooth 4-Manifolds and Intersection Forms
- Teichmüller theory, Nielson-Thurston Classification

Interdisciplinary Project

UNIST

Sep. 2020 – Feb. 2021

Ulsan, Korea

Undergraduate Research Assistant

UNIST

Jul. 2019 – Aug. 2019

Ulsan, Korea

TALKS

Connected components of the space of type-preserving representations <i>SHSU Junior Colloquium</i>	Nov. 2025 Texas, US
Connected components of the space of type-preserving representations <i>Ventotene Workshop on Higher dimensional hyperbolic geometry</i>	Sep. 2025 Ventotene, Italy
Connected components of the space of type-preserving representations <i>2K-GATE Workshop, Korea Institute for Advanced Study</i>	Jun. 2025 Seoul, Korea
Connected components of the space of type-preserving representations <i>GTA: Philadelphia 2025, Temple University</i>	May. 2025 Pennsylvania, US
Connected components of the space of type-preserving representations <i>53rd Barrett Lectures: Recent Development in Geometric Group Theory, University of Tennessee</i>	May. 2025 Tennessee, US
Connected components of the space of type-preserving representations <i>CIRM School on Geometric structures and discrete group actions</i>	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 Indiana, US
Connected components of the space of type-preserving representations <i>KIAS HCMC Topology Seminar, Korea Institute for Advanced Study (Online)</i>	Feb. 2025 Seoul, Korea
Connected components of the space of type-preserving representations <i>Conference on Geometry and Dynamics in Low Dimensions, IMVAST</i>	Jan. 2025 Hanoi, Vietnam
Geometric Approach to Surface Group Representations <i>Graduate Student Organization Seminar, Texas A&M University</i>	Sep. 2024 Texas, US
Topological Components of Spaces of Representations <i>Low-dimensional Topology Seminar, Seoul National University</i>	Aug. 2024 Seoul, Korea
Nielsen-Thurston Classification <i>GIGEM Conference, Texas A&M University</i>	Apr. 2024 Texas, US
Mapping Class Group Action on Teichmüller Space <i>Graduate Student Organization Seminar, Texas A&M University</i>	Apr. 2024 Texas, US

PARTICIPATED CONFERENCES/WORKSHOPS

Joint Mathematics Meeting (JMM) <i>Walter E. Washington Convention Center</i>	Jan. 2026 Washington, D.C., US
Ventotene Workshop on Higher dimensional hyperbolic geometry	Sep. 2025 Ventotene, Italy
SLMath Summer School: Geometry and Dynamics in Higher Rank Lie Groups <i>University of California, Berkeley</i>	Jul. 2025 California, US
Workshop: Low-dimensional phenomena: geometry and dynamics <i>Institut henri poincaré</i>	Jun. 2025 Paris, France
2K-GATE Workshop <i>Korea Institute for Advanced Study</i>	Jun. 2025 Seoul, Korea
GTA: Philadelphia 2025 <i>Temple University</i>	May. 2025 Pennsylvania, US
53rd Barrett Lectures: Recent Development in Geometric Group Theory <i>University of Tennessee</i>	May. 2025 Tennessee, US
CIRM School on Geometric structures and discrete group actions <i>Centre International de Rencontres Mathématiques</i>	Apr. 2025 Marseille, France
Graduate Student Conference in Topology and Geometry <i>Indiana University Bloomington</i>	Apr. 2025 Indiana, US
Workshop on Lorentzian, Affine, and Hyperbolic Differential Geometry <i>University of Maryland</i>	Apr. 2025 Maryland, US
Workshop on Motives and Mapping Class Groups <i>American Institute of Mathematics, Caltech</i>	Jan. 2025 California, US

Winter School Côte d'Azur <i>Université Côte d'Azur</i>	Jan. 2025 Nice, France
Conference on Geometry and Dynamics in Low Dimensions <i>Institute of Mathematics, Vietnam Academy of Science and Technology</i>	Jan. 2025 Hanoi, Vietnam
Texas Geometry and Topology Conference <i>Texas A&M University</i>	Nov. 2024 Texas, US
AMS Central Sectional Meeting <i>University of Texas at San Antonio</i>	Sep. 2024 Texas, US
Canaryfest - Moving to higher rank: from hyperbolic to Anosov <i>Grand Hotel St. Michele</i>	July. 2024 Cetraro, Italy
AlMaRe Conference <i>Fourier Institute</i>	July. 2024 Grenoble, France
Conference on Quantum Topology and Connections to Mathematical Physics <i>Texas A&M University</i>	May. 2024 Texas, US
GIGEM Conference <i>Texas A&M University</i>	April. 2024 Texas, US
Joint Mathematics Meeting (JMM) <i>Moscone Center</i>	Jan. 2024 California, US
Winter School on Low-dimensional Topology and Related Topics <i>Institute for Basic Science</i>	Dec. 2023 Pohang, Korea
Texas Geometry and Topology Conference. <i>Rice University</i>	Nov. 2023 Texas, US
Conference on Characters and Moduli of Surfaces <i>Kyoto University</i>	Jul. 2023 Kyoto, Japan
Summer School on Scissors Congruence, Algebraic K-Theory, and Trace Methods <i>Indiana University</i>	Jun. 2023 Indiana, US
Workshop in Geometric Topology <i>Colorado College</i>	Jun. 2023 Colorado, US
AMS Southeastern Sectional Meeting <i>Georgia Institute of Technology</i>	Mar. 2023 Georgia, US
Winter school in singularities and low-dimensional topology <i>Rényi Institute</i>	Jan. 2023 Budapest, Hungary
Graduate Student Topology and Geometry Conference <i>Georgia Institute of Technology</i>	Apr. 2022 Georgia, US
Texas Geometry and Topology Conference <i>The University of Texas at Dallas</i>	Feb.2022 Texas, US
The South Central Topology Conference <i>Texas A&M University</i>	Sep. 2021 Texas, US
Arizona Winter School <i>University of Arizona</i>	Jan.2021-Feb.2021 Arizona, US
International Congress of Mathematicians(ICM)	Aug. 2014 Seoul, Korea

TEACHING/MENTORING EXPERIENCES

Instructor of record (Business Calculus) <i>Texas A&M University</i>	Jan. 2026 - May.2026 Texas, US
Direct Reading Program - A first course in Algebraic Topology <i>Texas A&M University</i>	Sep. 2025 - Dec.2025 Texas, US
Grader, MATH 636 (Topology I) <i>Texas A&M University</i>	Sep. 2025 - Dec.2025 Texas, US
Python Lab Assignment, MATH 150 (Functions, Trigonometry and Linear Systems) <i>Texas A&M University</i>	Jul.2025 Texas, US

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>
Houston A&M Mothers' Club Outstanding TA Award <i>Texas A&M University</i>	Jul. 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 EXPERIENCES

Treasurer <i>Association for Women in Mathematics (Texas A&M, 60 members)</i>	Aug.2022 - May.2023 <i>Texas, US</i>
<ul style="list-style-type: none"> • Women in Math Mentoring Lunch • AWM peer mentoring program 	
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>