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   Aug.2021 – Present
Ph.D. in Mathematics   *Texas, US*

Ulsan National Institute of Science and Technology(UNIST)   Mar.2017 – Jul.2021
Bachelor of Science in Mathematical Science   *Ulsan, Korea*

- Minor in Computer Science and Engineering
- Total GPA of 3.99 / 4.3 (95.9 / 100)

Sabanci University   Feb. 2020 – Jun. 2020
Erasmus Program   *Istanbul, Turkey*

RESEARCH

On totally hyperbolic non-Fuchsian type-preserving representations   Nov. 2025
arXiv:2511.13989

Connected components of spaces of type-preserving representations   Jul. 2025
with T.Yang, arXiv: 2502.05078

STUDY ON OTHER INTERESTS

End-periodic maps Group study seminar   Aug. 2025 – Present
Texas A&M University   *Texas, US*

Reading Course with Prof. Tian Yang   Feb. 2022 – Oct. 2023
Texas A&M University   *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   Feb. 2022 – May. 2022
Texas A&M University   *Texas, US*

- Fredholm Operator and Higher index Theory

Reading Course with Prof. Irina Bobkova   Sep. 2022 – May. 2023
Texas A&M University   *Texas, US*

- Algebraic Topology, Stable Homotopy Theory

Low dimensional Topology Seminar   Feb. 2022 – May. 2023
Texas A&M University   *Texas, US*

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

Interdisciplinary Project   Sep. 2020 – Feb. 2021
UNIST   *Ulsan, Korea*

Undergraduate Research Assistant   Jul. 2019 – Aug. 2019
UNIST   *Ulsan, Korea*

Talks

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

Participated Conferences/Workshops

Ventotene Workshop on Higher dimensional hyperbolic geometry	Sep.2025
	Ventotene, Italy
SLMath Summer School: Geometry and Dynamics in Higher Rank Lie Groups	Jul.2025
University of California, Berkeley	*California, US*
Workshop: Low-dimensional phenomena: geometry and dynamics	Jun.2025
Institut henri poincaré	*Paris, France*
2K-GATE Workshop	Jun.2025
Korea Institute for Advanced Study	*Seoul, Korea*
GTA: Philadelphia 2025	May.2025
Temple University	*Pennsylvania, US*
53rd Barrett Lectures: Recent Development in Geometric Group Theory	May.2025
University of Tennessee	*Tennessee, US*
CIRM School on Geometric structures and discrete group actions	Apr.2025
Centre International de Rencontres Mathématiques	*Marseille, France*
Graduate Student Conference in Topology and Geometry	Apr.2025
Indiana University Bloomington	*Indiana, US*
Workshop on Lorentzian, Affine, and Hyperbolic Differential Geometry	Apr.2025
Univsersity of Maryland	*Maryland, US*
Workshop on Motives and Mapping Class Groups	Jan. 2025
American Institute of Mathematics, Caltech	*California, US*
Winter School Côte d'Azur	Jan. 2025
Université Côte d'Azur	*Nice, France*

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

Teaching/Mentoring Experiences

Instructor of record	Jan. 2026 - May.2026
Texas A&M University	*Texas, US*
Direct Reading Program - A first course in Algebraic Topology	Sep. 2025 - Dec.2025
Texas A&M University	*Texas, US*
Grader, MATH 636 (Topology I)	Sep. 2025 - Dec.2025
Texas A&M University	*Texas, US*
Python Lab Assignment, MATH 150 (Functions, Trigonometry and Linear Systems)	Jul.2025
Texas A&M University	*Texas, US*
MATH 467 (Modern Geometry) Grader	Jan. 2025 - May.2025
Texas A&M University	*Texas, US*

No Teaching Assistant Duties, supported by NSF Grant, P.I. - Tian Yang	Sep. 2024 - Dec.2024
Texas A&M University	*Texas, US*
Houston A&M Mothers' Club Outstanding TA Award	Jul. 2024
Texas A&M University	*Texas, US*
No Teaching Assistant Duties, supported by NSF Grant, P.I. - Tian Yang	Jul. 2024 – Dec. 2024
Texas A&M University	*Texas, US*
Help Session Tutor, Math 142 (Business Calculus)	Jun. 2024
Texas A&M University	*Texas, US*
No Teaching Assistant Duties, supported by NSF Grant, P.I. - Tian Yang	Jan. 2024 – May. 2024
Texas A&M University	*Texas, US*
Grader, Math 636 (Topology I)	Aug. 2023 – Dec. 2023
Texas A&M University	*Texas, US*
Grader, Math 142 (Business Calculus)	Jul. 2023
Texas A&M University	*Texas, US*
Python Labs, Math 151(Engineering Math I)	Jun. 2023
Texas A&M University	*Texas, US*
Teaching Assistant, Math 152(Engineering Math II)	Jan. 2023 – May. 2023
Texas A&M University	*Texas, US*
Teaching Assistant, Math 151(Engineering Math I)	Aug. 2022 – Dec. 2022
Texas A&M University	*Texas, US*
Grader, Math 304 (Linear Algebra)	Jun. 2022
Texas A&M University	*Texas, US*
Grader, Math 423 (Linear Algebra II)	Jan. 2022 – May. 2022
Texas A&M University	*Texas, US*
Grader, Math 467 (Modern Geometry)	Aug. 2021 – Dec. 2021
Texas A&M University	*Texas, US*
Teaching Assistant(Calculus I, Calculus II)	Mar. 2018 – Dec. 2019
Ulsan National Institute of Science and Technology	*Ulsan, Korea*
Calculus I Open Lecture	Jun.2018
Ulsan National Institute of Science and Technology	*Ulsan, Korea*

LEADERSHIP/VOLUNTEER EXPERIENCES

Treasurer	Aug.2022 - May.2023
Association for Women in Mathematics (Texas A&M, 60 members)	*Texas, US*

- Women in Math Mentoring Lunch
- AWM peer mentoring program

Teaching Assistant for Math Circle	Nov. 2023
Texas A&M Math Circle	*Texas, US*
Grader for High School Math Contest	Nov. 2023
Texas A&M High School Mathematics Contest	*Texas, US*
Grader for High School Math Contest	Nov. 2022
Texas A&M High School Mathematics Contest	*Texas, US*