# 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/STUDY EXPERIENCES

**In Progress - Topology on Representation Spaces**                      Nov. 2023 – Current
*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. Tian Yang**                                Feb. 2022 – May. 2022
*Texas A&M University*                                                               *Texas, US*

- Mapping Class Group and Teichmüller Theory
- 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

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| **Connected components of the space of type-preserving representations** | Feb. 2025 |
| *KIAS HCMC Topology Seminar* | *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

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| **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* |

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| **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 EXPERIENCES

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| **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** | 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** | June.2018 |
| *Ulsan National Institute of Science and Technology* | *Ulsan, Korea* |

## LEADERSHIP/VOLUNTEER EXPERIENCES

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| **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

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| **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* |