

HYERAN CHO

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177 College Ave, Medford, MA 02155

RESEARCH AREAS

Geometric Group Theory, Topology, Differential Geometry, Knot Theory

EMPLOYMENT

Tufts University, USA
Norbert Wiener Assistant Professor

Sep 2025-

EDUCATION

The Ohio State University, USA

Jul 2018 - Aug 2025

Ph.D., Mathematics

Advisor: Jean-François Lafont

Thesis Title: Aspects of Hyperbolicity in Groups and Spaces

Pusan National University, South Korea

2015-2017

M.S., Mathematics

Advisor: Sang Youl Lee, Young Ho Im

Thesis Title: Classification of (1,1)-diagrams of 2-bridge knots

Pusan National University, South Korea

2011-2015

B.A., Mathematics Education

PAPERS

Small Cancellation for Random Branched Covers of Groups(Submitted)
with Jean-François Lafont, Rachel Skipper

2026

Codimension Two Complements in Hyperbolic Products(In preparation)
with Jean-François Lafont, Nicholas Miller, Barry Minemyer

2026

Derivation of Schubert normal forms of 2-bridge knots
with Sang Youl Lee, Hyun-Jong Song
Journal of Knot Theory and Its Ramifications(JKTR), 2019

2019

TEACHING

Tufts University

Instructor, MATH145, Abstract Algebra 1

Fall 2026

Instructor, MATH171, Point-set Topology

Spring 2026

Recitation, MATH32, Calculus 1

Fall 2025

The Ohio State University

Recitation, MATH1151, Calculus 1

Summer 2021-Fall 2022

Grader, MATH2568, Linear Algebra

Spring 2021

Grader, MATH2174, Linear algebra and differential equations

Fall 2020

Grader, MATH1181, Honors Calculus

Fall 2020

Grader, MATH3345, Foundation of Higher Mathematics

Spring 2020

Grader, MATH4568, Linear Algebra

Fall 2019

MSLC(Math and Stat Learning Center) Tutoring

Ohio State University

*Aug 2019-Dec 2022***Pusan National University**

Teaching assistant, MA24416, Topics in Topology

Spring 2017

Teaching assistant, MA16095, Set Theory

Fall 2016

Teaching assistant, MA22330, Topology(II)

*Spring 2016***Teacher's Certificate(Secondary School) of Mathematics**Ministry of Education & Human Resources Development, Republic of Korea.
(government-recognized qualifications of level 2)*Feb 2015***Teaching Practice**

Choongryul Middle School, South Korea

*May 2014-June 2014***Volunteer Tutoring for the Blind**

Busan School for the Blind, South Korea

*2012-2015***RESEARCH ASSISTANT**

Development of invariants for surface-links based on MGD and applications

Prof. Sang Youl Lee, Pusan National University

*June 2016-May 2017***Development of invariants for virtual knots via parity functions and applications on knots in 3 dimensional manifolds**

Prof. Young Ho Im, Pusan National University

*May 2016-Apr 2017***Development of invariants via Gauss diagrams for virtual knots and knotoids, and their applications**

Prof. Young Ho Im, Pusan National University

*Aug 2015-Apr 2016***SCHOLARSHIP**

Special Graduate Assignment (SGA)Ohio State University Department of Mathematics
(exception from teaching duty)*Spring 2023***Tibor Rado Graduate Fellowship**Ohio State University Department of Mathematics
(exception from teaching duty)*Fall 2018-Spring 2019***BK Scholarship**

National Research Foundation of Korea

*2015-2017***National Scholarship for Natural Sciences and Engineering**Korea Student Aid Foundation(KOSAF)
(4 years undergraduate full scholarship)*2011-2015***AWARDS**

Award for Presentation Excellence

The 9th KOOK-TAPU Joint Seminar on Knots and Related Topics & The 11th Graduate Student Workshop on Mathematics, Osaka City University, JAPAN,

*July 26, 2017***PRESENTATIONS**

- 2K-GATE Workshop, Jeju island, Korea (invited)

Jul 26, 2026

- 40th Summer Conference on Topology and Its Applications, University of Split, Croatia (invited) *Jul 13-17, 2026*
- Topology Seminar, Brandeis University, USA (invited) *Apr 16, 2026*
- Mathematics Seminar, Bridgewater State University, USA (invited) *Nov 10, 2025*
- Wesleyan Topology et al Seminar, Wesleyan University, USA (invited) *Oct 29, 2025*
- GGTT(Geometric Group Theory and Topology) Seminar, Tufts University, USA (invited) *Oct 21, 2025*
- AMS Fall Southeastern Sectional Meeting, Tulane University, USA (invited) *Oct 5, 2025*
- OGSM(Organization of Graduate Students in Mathematics) Seminar, Tufts University, USA (invited) *Oct 1, 2025*
- Colloquium in Department of Mathematics, Inha University, KOREA (invited) *July 31, 2025*
- AWM Research Symposium, University of Wisconsin-Madison, USA (invited) *May 16, 2025*
- (Poster) YGGT XIII(Young Geometric Group Theory), University of Copenhagen, Denmark (contributed) *Apr 9, 2025*
- Grad Seminar, University of Tennessee, USA (invited) *Feb 24, 2025*
- GGT(Geometric Group Theory) Seminar, Ohio State University, USA (invited) *Jan 21, 2025*
- JMM joint Mathematical Meetings(AWM), Seattle, USA (invited) *Jan 11, 2025*
- (Poster) 68th meeting at Texas A&M University, College Station, USA (contributed) *Nov 9, 2024*
- (Lightning) YGGT XI(Young Geometric Group Theory), University of Münster, GERMANY (contributed) *Feb 13, 2023*
- Knots and Representation theory seminar, Bauman Moscow State Technical University, Moscow, RUSSIA (invited) *Mar 12, 2021*
- Claremont Mckenna College Topology Seminar, Claremont Mckenna College, USA (invited) *Nov 12, 2019*
- AMS Sectional Meeting, University of California Riverside, USA (invited) *Nov 9, 2019*
- TGAA(Topology, Geometry, and Applications) seminar, Ohio State University, USA (invited) *Nov 1, 2019*
- Quantum Algebra and Quantum Topology Seminar, Ohio State University, USA (invited) *Oct 31, 2019*
- 2018 KMS Spring Meeting, Kyung Hee University, Seoul, KOREA (contributed) *Apr 21, 2018*
- The 9th KOOK-TAPU Joint Seminar on Knots and Related Topics & The 11th Graduate Student Workshop on Mathematics, Osaka City University, Osaka, JAPAN (invited) *Jul 25, 2017*
- 2017 Youngnam Mathematical Society Annual Meeting, UNIST, Ulsan, KOREA (contributed) *Jul 01, 2017*
- (Poster) 2017 KWMS The 13th International Conference, POSTECH, KOREA *Jun 23, 2017*
- 2017 KMS Spring Meeting, Chosun University, Gwangju, KOREA (contributed) *Apr 29, 2017*
- PNU Math Forum, Pusan National University, Busan, KOREA (contributed) *Dec 01, 2016*
- KOOK-TAPU Workshop of Knots, Tsuchima Island, JAPAN (invited) *Sep 07, 2016*

- The 8th KOOK-TAPU Joint Seminar on Knots and Related Topics & The 10th Graduate Student Workshop on Mathematics, Pusan National University, Busan, KOREA (invited) *Jul 26, 2016*
- 2016 Winter TAPU Workshop on Knots and Related Topics, Kyungpook National University, Daegu, KOREA (invited) *Feb 15, 2016*

PROFESSIONAL ACTIVITIES

GGTT(Geometric Group Theory and Topology) Seminar

Organizer, Tufts University, USA

Sep 2025-

Colloquia and Special Lectures

Committee, Tufts University, USA

Sep 2025- Aug 2026

The 1st Midwest Graduate Student Conference: Geometry and Topology meet Data Analysis and Machine Learning

Volunteer, The Ohio State University, USA

June 1-2, 2019

PPICTA (The Pan Pacific International Conference on Topology and Applications)

Volunteer, Busan, KOREA

Nov 13-17, 2017

CONFERENCES, PROGRAMS ATTENDED

- Mini-Workshop Reflection Groups in Magdeburg, Teaming up with Paris, Institute des Hautes Etudes Scientifiques (IHES), France *Feb 9-9, 2023*
- Floer Homology and Homotopy Thoery Summer School and Conference, University of California at Los Angeles(UCLA), USA *July 7-19, 2017*
- International Conference for KMS 70th Anniversary, Seoul, KOREA *Oct 20-23, 2016*
- SEOUL ICM 2014 (International Congress of Mathematics), Seoul, KOREA *Aug 13-21, 2014*

ACTIVITIES

Zentrum

Computer Club related to SAGEMATH and PYTHON program
(with 'Project Euler: <https://projecteuler.net>')

2015-2017

Data Science Boot Camp (Certificate)

The Erdos Institute

Sep-Dec 2023

COMPUTER SKILLS

Wolfram Mathematica, Sagemath, PYTHON, Microsoft Office, TEX, Illustrator