Anthony Hojin Lee

anthonylee@kaist.ac.kr antleee7.github.io
Citizenship: U.S.A & Republic of Korea

Education

M.Sc. Mathematics, KAIST 2027 (Expected)
Advisor: Minju Lee

B.Sc. Mathematics, Seoul National University 2025

Research

A. Lee, *Maximal Fuchsian subgroups of the $d = 2$ Bianchi group*. Unpublished manuscript, 2025.
Classifies maximal Fuchsian subgroups of $\mathrm{PSL}_2(\mathbb{Z}[\sqrt{-2}])$ via quaternion algebras and derives asymptotics for their covolumes.

Awards

NSF Graduate Research Fellowship Program – Honorable Mention (2025)
Awarded for proposal on derived autoequivalence groups of K3 surfaces.

Dean's List (Spring & Fall 2024)

Academic visits

Massachusetts Institute of Technology (Academic Visit), Host: Ju-Lee Kim – Feb 2026

Teaching experience

Introduction to Linear Algebra (TA), KAIST – Fall 2025

Basic Calculus I (Tutor), Seoul National University – Spring 2022

Conferences & workshops (selected)

ICM 2026 (Upcoming)

Geometric Langlands Masterclasses, University of Copenhagen – 2025

International Undergraduate Mathematics Summer School, Seoul National University – 2023

Seminar talks (selected)

Undergraduate Algebra & Geometry Seminar, Seoul National University
Topics include advanced algebraic topology, Lie theory, classical theorems in enumerative geometry

Algebraic Geometry Seminar, Seoul National University
Topics include étale cohomology, Larsen-Lunts theorem, Batyrev's construction of Calabi-Yau hypersurfaces of toric varieties, Fourier-Mukai transforms, moduli spaces of sheaves, Harder-Narasimhan filtration

Nevanlinna Theory in Several Variables Seminar, KAIST
Topics include Nevanlinna's first main theorem for coherent ideal sheaves, some theorems in Diophantine approximation

Undergraduate projects

Moduli spaces of sheaves and their derived categories
Advised by Jeongseok Oh. Topics in modern enumerative geometry, especially moduli spaces of sheaves on Calabi-Yau varieties and their derived categories

Coxeter polytopes in Hyperbolic space
Advised by Gye-Seon Lee. The work of Vinberg *et al.* on the classification problem of Coxeter polytopes in n-dimensional hyperbolic space, for $n \geq 4$. Various models of Hyperbolic space, Coxeter groups, Schläfi matrices, and Coxeter-Dynkin diagrams

Organization

SEGL (SNU Experimental Geometry Lab)
Mentored by Gye-Seon Lee. Founded an undergraduate mathematics seminar focused on visual geometry projects, with 15+ active members. Directed projects such as seminars on Riemannian geometry, interactive Penrose tiling generator, visualization of limit points of reflections in hyperbolic space. Provided financial support and organized study groups for students participating in the Undergraduate Mathematics Competition of the KMS