

Seunghyun Lee

Curriculum Vitae

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Research Interests

Number Theory, Harmonic Analysis

Education

MSci in Mathematics, Imperial College London

Sep 2023-Jun 2027

- Grade: 1st Class Honours (Expected)
- Year 4 Modules: Elliptic Curves, Algebra 4 (Homological Algebra), Commutative Algebra, Algebraic Geometry, Lie Algebras, Complex Manifolds
- Year 3 Modules: Number Theory, Group Representation Theory, Fourier Analysis and Distributions, Functional Analysis, Algebraic Topology
- Audited Modules: Galois Theory, Algebraic Number Theory

Publications & Preprints

1. *Classification of λ -translators in the Lorentz-Minkowski space* with Marie-Amélie Lawn, Miguel Ortega, in preparation.

Research Experience

- Final Year Dissertation, Imperial College London Oct 2026-Present
On the disproof of the Erdős unit distance conjecture, supervised by Prof. Toby Gee
- Summer Research Programme (UROP), Imperial College London Jul 2025-Sep 2025
 λ -translators in the Lorentz-Minkowski space, supervised by Dr. Marie-Amélie Lawn
- 2nd Year Research Project, Imperial College London May 2025-Jun 2025
The endpoint case of the multilinear Kakeya estimate, supervised by Dr. Zhiyuan Zhang
- 1st Year Research Project, Imperial College London May 2024-Jun 2024
Finding eigenvalues and eigenfunctions of integral operators, supervised by Prof. Ari Laptev

Talks

4. DRP Symposium, Imperial College London Jan 2026
Hausdorff dimension and Kakeya sets
3. 3-minute Thesis Competition, Imperial College London Oct 2025
Finding λ -translators in the Lorentz-Minkowski plane
2. 2nd Year Research Symposium, Imperial College London Jun 2025
Polynomial methods and the endpoint case of the multilinear Kakeya estimate
1. 1st Year Research Symposium, Imperial College London Jun 2024
Finding eigenvalues and eigenfunctions of integral operators

Honours

- Dean's List (Years 1 & 3), Imperial College London Oct 2024, Oct 2026
- Best Presentation Award, Imperial 3-minute Thesis Competition Oct 2025
- UROP Prize, Imperial College London Oct 2025
- UROP Departmental Bursary, Imperial College London May 2025

Teaching

Imperial College London

- Research Mentor, Directed Reading Programme (DRP) Autumn 2026-Present
Fourier analysis on finite groups and applications to additive combinatorics
- Peer Tutor for 1st Year Students Autumn 2025-Present
Analysis I, Linear Algebra and Groups, Calculus and Applications, Probability and Statistics
- Research Mentor, Directed Reading Programme (DRP) Autumn 2025
Hausdorff dimension and Kakeya sets

Conferences & Workshops Attended

- Undergraduate Summer School, London Mathematical Society Jul 2025
Knot theory, additive number theory, topological solitons, sub-Riemannian geometry

Skills

Programming: Python, LaTeX (Proficient); C++, R (Familiar)

Languages: Korean (Native), English (Fluent).