Joon-Hyeok Yim

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Position

2025 – 2026 **Yale University**, New Haven, CT, United States
Postdoctoral Associate, Department of Electrical & Computer Engineering

Education

2016 – 2025 **Yale University**, New Haven, CT, United States
Doctor of Philosophy in Mathematics, Advisor: *Prof. Anna C. Gilbert*
Dissertation Title: On the Analysis of Average Hyperbolicity and Its Applications
Personal Leave (2018 – 2021): for mandatory military service (Technical Research Personnel)

2012 – 2016 **Seoul National University**, Seoul, Republic of Korea
Bachelor of Science in Mathematical Sciences, *Summa Cum Laude* (3.97/4.3)

Work Experience

2017 – 2025 **Teaching Fellow**, *Yale University*, New Haven, CT, United States.
Instructor: Calculus of Functions of Several Variables (Fall 2022)
Teaching Assistant: Discrete Mathematics (Fall 2024, Spring 2025), Analysis I (Spring 2024), Linear Algebra with Applications (Spring 2022), Linear Algebra and Matrix Theory (Spring 2018)
Coach: Calculus of Functions of One Variable II (Spring 2023)

2018 – 2021 **Technical Research Personnel**, *Researcher (in companies)*, Republic of Korea.
Work: implementing and engineering visual tracking algorithms in an embedded platform, hierarchical graph algorithms and its applications on natural language processing

Publications

with Anna C. Gilbert, 2023, Fitting trees to ℓ_1-hyperbolic distances. Advances in Neural Information Processing Systems 36 (NeurIPS 2023)

with Anna C. Gilbert, 2024, Hyperbolicity, slimness, and minsize, on average. preprint arXiv:2412.05746

Working Projects

Local and global geometric structures on random graph models.
Applications on real-world dataset.
Geometric characterizations of graphs for machine learning.

Talks

Jan 2025 **Slim and fat triangles in random graphs**, *Seoul National University*, Probability Seminar
Mar 2024 **Tree fitting problem and hyperbolic distances**, *Yonsei University*, Discrete Analysis Seminar
Dec 2023 **Fitting trees to ℓ_1-hyperbolic distances**, *NeurIPS 2023*, Poster Session
Oct 2023 **Fitting trees to ℓ_1-hyperbolic distances**, *Yale FDS/Google Workshop: Theory and Practice of Foundation Models*, Poster Session

Conferences and Workshops

Feb 2025 **Fusing Theory and Practice of Graph Algorithms**, *ICERM*, Providence, RI

Dec 2023 **NeurIPS 2023**, New Orleans, LA

Oct 2023 **Yale FDS/Google Workshop: Theory and Practice of Foundation Models**, *Yale University*, New Haven, CT

Jun 2023 **Modern Applied and Computational Analysis**, *ICERM*, Providence, RI

Dec 2021 **Geometric and Topological Methods in Data Science**, *ICERM*, Providence, RI

Honors & Awards

2012 – 2016 **Presidential Science Scholarship**, *Korea Student Aid Foundation*, Republic of Korea.

2013 – 2015 **Undergraduate Mathematical Competition in Korea**, *Gold Prize*.
Republic of Korea

2010, 2011 **International Mathematical Olympiad**, *Silver Medal*.

Skills

Programming Python

Language Korean (native), English (fluent)