Joon-Hyeok Yim

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Education

2016 – 2025 **Yale University**, New Haven, CT, United States
Doctoral Student, Advisor: *Prof. Anna C. Gilbert*
Research Interests: algorithms on metric embedding in particular on tree metrics, geometric characteristics on random graph models, and problems with application to graph datasets
Personal Leave (2018 – 2021): for mandatory military service (Technical Research Personnel)

2012 – 2016 **Seoul National University**, Seoul, Republic of Korea
Bachelor, *Summa Cum Laude*

Work Experience

2017 – **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: visual tracking algorithms, graph algorithms, and natural language processing

Papers

with Anna C. Gilbert, 2023, Fitting trees to ℓ_1-hyperbolic distances. NeurIPS 2023
with Anna C. Gilbert, 2024, Hyperbolicity, slimness, and minsize, on average. preprint

Working Projects

Local and global geometric structures on random graph models.
Approximation algorithms on metric embedding and repair problems.
Applications on real-world and massive dataset
Geometric characterizations of graphs for machine learning.

Talks

Jan 2025 **TBA (Scheduled)**, *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

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, Julia

Language Korean (native), English (fluent)