

Seonghyuk Im

Graduate student at KAIST

<https://seonghyukim.github.io/>

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Current Position

- **KAIST** Daejeon, South Korea
Integrated master's/doctoral program 2021-Current
 - Advised by Jaehoon Kim and Hong Liu.

Education

- **KAIST** Daejeon, South Korea
B.S., Mathematics 2016-2020
 - Advised by Yong Jung Kim.

Publications

- On rainbow Turán Densities of Trees (with Jaehoon Kim, Hyunwoo Lee, and Haesong Seo), arXiv:2312.15956
- A bandwidth theorem for graph transversals (with Debsoumya Chakraborti, Jaehoon Kim, and Hong Liu), arXiv:2302.09637
- A proof of the Elliott-Rödl conjecture on hypertrees in Steiner triple systems (with Jaehoon Kim, Joonkyong Lee, and Abhishek Methuku), arXiv:2208.10370
- The proper conflict-free k -coloring problem and the odd k -coloring problem are NP-complete on bipartite graphs (with Jungho Ahn and Sang-il Oum), arXiv:2208.08330
- Crux, space constraints and subdivisions (with Jaehoon Kim, Younjin Kim, and Hong Liu), arXiv:2207.06653
- Complexity of Partitioning Hypergraphs, arXiv:1812.09206 (decided not to publish)
- On the mean square displacement of a random walk on a graph (with Hwidong Kim, Jiho Maeng, Jihwan Yu, Yongwook Cha, and Seong-Hun Paeng) *European Journal of Combinatorics* 51 (2016): 227-235, [link](#)

Talks

- 2023 European Conference on Combinatorics, Graph Theory and Applications (EUROCOMB'23) August 31, 2023
Crux, space constraints and subdivisions (Extended abstract)

- 2023 KMS Spring Meeting - Special Section: Extremal Combinatorics: Methods and Applications
April 29, 2023
A bandwidth theorem for graph transversals
- Shandong University
March 30, 2023
A bandwidth theorem for graph transversals (Bilibili)
- IBS Discrete Math Seminar
November 29, 2022
A proof of the Elliott-Rödl conjecture on hypertrees in Steiner triple systems (Youtube)
- KAIST Math Graduate student Seminar (KMGS)
November 3, 2022
Large clique subdivisions in graphs without small dense subgraphs
- 2021 Combinatorics Workshop
December 21, 2021
Large clique subdivisions in graphs without small dense subgraphs (Youtube)
- IBS DIMAG Seminar
November 30, 2021
Large clique subdivisions in graphs without small dense subgraphs (Youtube)

Competitive Programming

2018 Kakao Code Festival 5th prize(30th place) 2018
 2017 ACM-ICPC Daejeon Regional 17th place 2017

TA works

2023

- (fall) MAS 102 Calculus 2 and MAS 480 Topological methods in combinatorics at KAIST
- (spring) MAS 101 Calculus 1 and MAS 275 Discrete mathematics at KAIST

2022

- (fall) MAS 102 Calculus 2 and MAS 477 Introduction to Graph Theory at KAIST
- (spring) MAS 102 Calculus 2 and MAS 275 Discrete mathematics at KAIST

2021

- (fall) MAS 102 Calculus 2 and CC511 Probability and Statistics at KAIST
- (spring) MAS 101 Calculus 1 at KAIST (Won the Outstanding Teaching Assistant Award).