

# Yeonsu Chang

Integrated Ph.D Candidate

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Graph Theory

Structural Graph Theory

Parameterized Complexity

Reduced Parameter

## Research Statement

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My research focuses on structural aspects of graphs and related width parameters, with emphasis on characterizations and algorithmic consequences in parameterized complexity.

## Education

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### Integrated Ph.D in Mathematics

Mar 2022 – Present

Hanyang University, Seoul, South Korea

Advisor: O-joung Kwon

### B.S. in Mathematics

Mar 2015 – Feb 2022

Hanyang University, Seoul, South Korea (incl. two years of military service)

## Military Service

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Republic of Korea Army

Jan 2017 – Oct 2018

Completed mandatory military service (Sergeant)

## Journal Papers

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1. Yeonsu Chang, Sejin Ko, O-joung Kwon, and Myounghwan Lee. **A characterization of graphs of radius- $r$  flip-width at most 2**, *Discrete Mathematics* 348(4) (Apr, 2025), 114366 [arXiv:2306.15206](https://arxiv.org/abs/2306.15206)

## Refereed Conference Papers without Journal Version

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2. Yeonsu Chang, O-joung Kwon, and Myounghwan Lee. **A new width parameter of graphs based on edge cuts:  $\alpha$ -edge-crossing width**, *WG23 accepted*, [arXiv:2302.04624](https://arxiv.org/abs/2302.04624)
1. Shinwoo An, Yeonsu Chang, Kyungjin Cho, O-joung Kwon, Myounghwan Lee, Eunjin Oh, and Hyeonjun Shin. **Pre-assignment problem for unique minimum vertex cover on bounded clique-width graphs**, *AAAI2025 accepted*, [arXiv:2408.09591](https://arxiv.org/abs/2408.09591)

## Preprints

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## Talks

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### 2023 KMS Annual Meeting

Oct 26–28, 2023

*A characterization of graphs of radius- $r$  flip-width at most 2*

## Teaching Experiences

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Spring 2025

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Fall 2024

## Recent Directions

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- Reduced parameter
- Chiboundedness
- Characterization of graphs of width parameter
- Characterization of graph classes