

HYEONAH KIM

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RESEARCH INTERESTS

- Generative Flow Networks (GFlowNets)
- Active Learning and Sample Efficient Training for Scientific Discovery
- Combinatorial Optimization with Deep Learning & GFlowNets

WORK EXPERIENCE

- 4/2025 – Current **Postdoctoral Researcher (Supervisor: Alex Hernandez-Garcia)** Mila, Université de Montréal
- GFlowNets for drug discovery and biological sequence design
 - Active learning for scientific discovery
- 1/2015 – 6/2017 **LGE ERP Manufacturing** LGCNS
- **Software Engineer.** Developing and maintaining ERP manufacturing system of LG Electronics

EDUCATION

- 3/2021 – 2/2025 **Ph.D. in Industrial and Systems Engineering** KAIST
System Intelligence Lab. & Computational Optimization Methods Lab.
- 3/2019 – 2/2021 **MS in Industrial Engineering** Seoul National University
Optimization and Operational Research Lab.
- 3/2011 – 2/2015 **BS in Industrial Engineering** Hanyang University
Information Design Lab.

PUBLICATIONS

- ICML, 2025 **Neural Genetic Search in Discrete Spaces**
[Hyeonah Kim*](#), [Sanghyeok Choi*](#), [Jinkyoo Park](#), [Changhyun Kwon](#)
- ICML, 2025 **Improved Off-policy Reinforcement Learning in Biological Sequence Design [arXiv]**
[Hyeonah Kim](#), [Minsu Kim](#), [Taeyoung Yun](#), [Sanghyeok Choi](#), [Emmanuel Bengio](#), [Alex Hernández-García](#), [Jinkyoo Park](#)
- AISTATS, 2025 **Ant Colony Sampling with GFlowNets for Combinatorial Optimization [arXiv]**
[Minsu Kim*](#), [Sanghyeok Choi*](#), [Hyeonah Kim](#), [Jiwoo Son](#), [Jinkyoo Park](#), [Yoshua Bengio](#)
- NeurIPS, 2024 **Genetic-guided GFlowNets for Sample Efficient Molecular Optimization [arXiv]**
[Hyeonah Kim](#), [Minsu Kim](#), [Sanghyeok Choi](#), [Jinkyoo Park](#)
- ICML, 2024 **Symmetric Replay Training: Enhancing Sample Efficiency in Deep Reinforcement Learning for Combinatorial Optimization [arXiv]**
[Hyeonah Kim](#), [Minsu Kim](#), [Sungsoo Ahn](#), [Jinkyoo Park](#)
- AAAI, 2024 **Equity-Transformer: Solving NP-hard Min-max Routing Problems as Sequential Generation with Equity Context [Paper Link]**
[Jiwoo Son*](#), [Minsu Kim*](#), [Sanghyeok Choi](#), [Hyeonah Kim](#), [Jinkyoo Park](#)
- IJOC, 2024 **A Neural Separation Algorithm for the Rounded Capacity Inequalities [Paper Link]**
INFORMS Journal on Computing (IJOC), 36(4), 987-1005
[Hyeonah Kim](#), [Jinkyoo Park](#), [Changhyun Kwon](#)
- NeurIPS, 2023 (Workshop) **RL4CO: a Unified Reinforcement Learning for Combinatorial Optimization Library [Paper Link]**
NeurIPS 2023 Workshop: New Frontiers in Graph Learning
[Federico Berto*](#), [Chuanbo Hua*](#), [Junyoung Park*](#), [Minsu Kim](#), [Hyeonah Kim](#), [Jiwoo Son](#), [Haeyeon Kim](#), [Joungho Kim](#), [Jinkyoo Park](#)
- ICML, 2023 **Meta-SAGE: Scale Meta-Learning Scheduled Adaptation with Guided Exploration for Mitigating Scale Shift on Combinatorial Optimization [Paper Link]**
[Jiwoo Son*](#), [Minsu Kim*](#), [Hyeonah Kim](#), [Jinkyoo Park](#)

HONORS AND AWARDS

9/2025 – 8/2026	Sejong Science Fellowship 2025 Young Scientist Grant Program	National Research Foundation of Korea
12/2024	Google Conference Scholarship NeurIPS 2024 Paper: Genetic-guided GFlowNets for Sample Efficient Molecular Optimization	Google Asia
10/2024	KAIST Graduate Student Outstanding Paper Award 2024 Paper: A Neural Separation Algorithm for the Rounded Capacity Inequalities	KAIST