

# HYEONAH KIM

Ph.D. Candidate  
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## RESEARCH INTEREST AND SKILLS

**Interests:** Combinatorial optimization, deep learning, routing problems, integer programming  
**Skills:** Python, PyTorch, julia, Gurobi, PL/SQL

## EDUCATION

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

## WORK EXPERIENCE

9/2020 - 2/2021	<b>LGE ERP Manufacturing/Sales</b> • <b>Software Engineer.</b> Developing HLDS (Hitach-LG Data Storage) ERP system • Oracle PL/SQL	LGCNS
1/2015 - 6/2017	<b>LGE ERP Manufacturing</b> • <b>Software Engineer.</b> Developing and maintaining ERP manufacturing system of LG Electronics • Plan/FP Module • Oracle PL/SQL, java	LGCNS

## IN PROGRESS

On going	<b>Neural Genetic Operators for the Traveling Salesmen Problem</b> <u>Hyeonah Kim</u> , Jaehyeok Lee, Jinkyoo Park, Changhyun Kwon
Under review	<b>Genetic-guided GFlowNets for Sample Efficient Molecular Optimization [arXiv]</b> <u>Hyeonah Kim</u> , Minsu Kim, Sanghyeok Choi, Jinkyoo Park
Under review	<b>Ant Colony Sampling with GFlowNets for Combinatorial Optimization [arXiv]</b> Minsu Kim*, Sanghyeok Choi*, Jiwoo Son, <u>Hyeonah Kim</u> , Jinkyoo Park, Yoshua Bengio

## JOURNAL PUBLICATION

Published online (23 Jan 2024)	<b>A Neural Separation Algorithm for the Rounded Capacity Inequalities [Paper Link]</b> <i>INFORMS Journal on Computing</i> <u>Hyeonah Kim</u> , Jinkyoo Park, Changhyun Kwon
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## CONFERENCE

ICML, 2024	<b>Symmetric Replay Training: Enhancing Sample Efficiency in Deep Reinforcement Learning for Combinatorial Optimization [arXiv]</b> <u>Hyeonah Kim</u> , Minsu Kim, Sungsoo Ahn, Jinkyoo Park
AAAI, 2024	<b>Equity-Transformer: Solving NP-hard Min-max Routing Problems as Sequential Generation with Equity Context [Paper Link]</b> Jiwoo Son, Minsu Kim, Sanghyeok Choi, <u>Hyeonah Kim</u> , Jinkyoo Park
NeurIPS, 2023 (Workshop)	<b>RL4CO: a Unified Reinforcement Learning for Combinatorial Optimization Library [Paper Link]</b> NeurIPS 2023 Workshop: New Frontiers in Graph Learning Federico Berto*, Chuanbo Hua*, Junyoung Park*, Minsu Kim, <u>Hyeonah Kim</u> , Jiwoo Son, Haeyeon Kim, Jounggho Kim, Jinkyoo Park
ICML, 2023	<b>Meta-SAGE: Scale Meta-Learning Scheduled Adaptation with Guided Exploration for Mitigating Scale Shift on Combinatorial Optimization [Paper Link]</b> Jiwoo Son*, Minsu Kim*, <u>Hyeonah Kim</u> , Jinkyoo Park