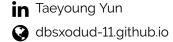
TAEYOUNG YUN

Ph.D student @ KAIST



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RESEARCH INTEREST

My research interest lies in solving complex and high-dimensional black-box optimization problems through the lens of conditional generative modeling. I'm interested in Diffusion Models, Generative Flow Networks (GFlowNets), and their applications to real-world tasks, e.g, biological sequence design, material discovery, and mechanical design. I'm also interested in various decision making problems such as bandits, Reinforcement Learning and Multi-Agent RL.

Recently, I found out that many crucial problems in ML can be reduced as a posterior inference problem. To this end, I'm currently interested in developing algorithms for amortizing intractable multi-modal posterior inference that can impact real-world applications.

EDUCATION

03/2024 - Current Ph.D Student in Industrial and Systems Engineering

KAIST

Supervised by Jinkyoo Park

08/2022 - 02/2024 M.S in Graduate School of AI

KAIST

Supervised by Jinkyoo Park

MS Thesis: Offline Meta Black-box Optimization Framework for Intelligent Traffic Light Management System

03/2018 - 08/2022 B.S in Industrial and Systems Engineering & Computer Science

KAIST

INTERNSHIPS

09/2024 - Current Visiting Intern in HKUST

Remote

Hosted by Ling Pan

Fine-tuning LLM with GFlowNets to generate diverse and effective prompts for text-to-image diffusion models.

03/2021 - 08/2021 Research Intern in Kakao Recommendation Team

Seoul, Korea

Develop contextual bandit algorithms for a personal recommendation. Analyze the gap between simulation and real-world deployment.

INDUSTRIAL PROJECTS

09/2024 - Current Traffic Network Layout Optimization

Daejeon, Korea

Collaborate with GS

Develop a Generative model-based design algorithm for optimizing traffic network layout on a given traffic pattern.

03/2023 - 03/2024 Incentive Design for Managing Taxi Fleet

Daejeon, Korea

Collaborate with ETRI

Develop an RL-based incentive design algorithm for rebalancing taxi fleets to resolve the taxi imbalance problem.

03/2022 - 03/2023 Traffic Light Optimization

Seoul, Korea

Collaborate with KT

Develop a Bayesian optimization algorithm for managing multiple traffic lights in the real world to reduce congestion.

	IONS

*: Equal Contribution

2025

Arxiv, 2025 Posterior Inference with Diffusion Models for High-dimensional Black-box Optimization

Taeyoung Yun*, Kiyoung Om*, Jaewoo Lee, Sujin Yun, and Jinkyoo Park

Paper / Code

Arxiv, 2025 Improved Off-Policy Reinforcement Learning in Biological Sequence Design

Hyeonah Kim, Minsu Kim, Taeyoung Yun, Sanghyeok Choi, Emmanuel Bengio, Alex Hernán-

dez Garcia, and Jinkyoo Park

Paper / Code

CVPR, 2025 Learning to Sample Effective and Diverse Prompts for Text-to-Image Generation

Taeyoung Yun, Dinghuai Zhang, Jinkyoo Park, and Ling Pan

Paper / Code

ICLR, 2025 Adaptive Teachers for Amortized Samplers

Minsu Kim*, Sanghyeok Choi*, Taeyoung Yun, Emmanuel Bengio, Leo Feng, Jarrid Rector-

Brooks, Sungsoo Ahn, Jinkyoo Park, Nikolay Malkin, and Yoshua Bengio

Paper / Code

2024

NeurIPS, 2024 Guided Trajectory Generation with Diffusion Models for Offline Model-based Optimiza-

tion

Taeyoung Yun, Sujin Yun, Jaewoo Lee, and Jinkyoo Park

Paper / Code

NeurIPS, 2024 (based on ICLRW) GTA: Generative Trajetory Augmentation with Guidance for Offline Reinforcement Learn-

ing

Jaewoo Lee*, Sujin Yun*, Taeyoung Yun, and Jinkyoo Park

Paper / Code

KDD, 2024 An Offline Meta Black-box Optimization Framework for Adaptive Design of Urban Traffic

Light Management Systems

Taeyoung Yun*, Kanghoon Lee*, Sujin Yun, Ilmyung Kim, Won-Woo Jung, Min-Cheol Kwon,

Kyujin Choi, Yoohyeon Lee, and Jinkyoo Park

Paper / Code

ICML, 2024

Learning to Scale Logits for Temperature-conditional GFlowNets

(based on NIPSW) Minsu Kim*, Juhwan Ko*, Taeyoung Yun*, Dinghuai Zhang, Ling Pan, Woochang Kim,

Jinkyoo Park, and Yoshua Bengio

Paper / Code

ICLR, 2024

Local Search GFlowNets

(Spotlight) Minsu Kim, **Taeyoung Yun**, Emmanuel Bengio, Dinghuai Zhang, Yoshua Bengio, Sungsoo

Ahn, and Jinkyoo Park

Paper / Code

TEACHING EXPERIENCES

2024 Teaching Assistant KAIST

IE481: Manufacturing & Artificial Intelligence

2023,2024 Teaching Assistant KAIST

IE437: Data-Driven Decision Making and Control

2022 Teaching Assistant KAIST

MAS480: Introduction to Scientific Machine Learning

ACADEMIC SERVICES —

2025 **Reviewer**

ICLR, AAMAS, AISTATS, ICML, KDD, TMLR

HONORS & AWARDS -

2021 Dean's List KAIST

Honor for Top 2% Students

2021 Excellence Award (2nd Place) Seoul, Korea

Big Data Competition Hosted by NH