

TAEYOUNG YUN

Ph.D student @ KAIST

 99yty@kaist.ac.kr

 Taeyoung Yun

 dbsxodud-11

 dbsxodud-11.github.io

RESEARCH INTEREST

My research interests lie in controllable generative modeling with large models (e.g., LLMs, Diffusion / Flow-based models) by exploring their latent spaces. In particular, I'm interested in building an amortized sampler that can extract crucial latents to generate desired samples. To accomplish this, my research focuses on amortized inference for generative models using off-policy reinforcement learning (RL) methods.

I'm also interested in various decision-making problems, such as Multi-turn / Multi-agent RL. I've also participated in several transportation-related projects based on high-dimensional black-box optimization methods.

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

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|-------------------|--|-------------------------|
| 06/2025 - 11/2025 | Research Intern at Mila | Montreal, Canada |
| | Hosted by Yoshua Bengio RL-based red-teaming with evolving environments by safety fine-tuning the victim LLM to promote easy-to-hard exploration. | |
| 09/2024 - 03/2025 | Visiting Intern at 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 at Kakao Recommendation Team | Seoul, Korea |
| | Develop contextual bandit algorithms for a personal recommendation. Analyze the gap between simulation and real-world deployment. | |

INDUSTRIAL PROJECTS

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|-------------------|--|-----------------------|
| 09/2024 - 09/2025 | 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. | |

Collaborate with KT

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

PUBLICATIONS

*: Equal Contribution

Preprints

Arxiv, 2025

[P3] Improving Sampling Distribution of Off-policy Training in Generative Flow Networks

Taeyoung Yun, Sujin Yun, Jinkyoo Park, and Ling Pan

[Paper](#) / [Code](#)

Arxiv, 2025

[P2] Active Attacks: Red-teaming LLMs via Adaptive Environments

Taeyoung Yun, Pierre-Luc St-Charles, Jinkyoo Park, Yoshua Bengio, and Minsu Kim

[Paper](#) / [Code](#)

Arxiv, 2025

(based on NIPS'W)

[P1] Posterior Inference in Latent Space for Scalable Constrained Black-box Optimization

Kiyoung Om*, Kyuil Sim*, Taeyoung Yun*, Hyeongyu Kang, and Jinkyoo Park

[Paper](#) / [Code](#)

Conference Publications

ICLR, 2026

[C12] Diffusion Alignment as Variational Expectation-Maximization

Jaewoo Lee, Minsu Kim, Sanghyeok Choi, Inhyuck Song, Sujin Yun, Hyeongyu Kang, Woocheol Shin, Taeyoung Yun, Kiyoung Om, and Jinkyoo Park

[Paper](#) / [Code](#)

WSDM, 2026

[C11] Urban Traffic Network Layout Optimization with Guided Discrete Diffusion Models

Taeyoung Yun, Inhyuck Song, Woocheol Shin, Yujin Shin, Sungpil Woo, Sunhwan Lim, and Jinkyoo Park

[Paper](#) / [Code](#)

KDD, 2025

[C10] Wind Farm Layout Optimization with Diffusion Models

Yujin Shin*, Taeyoung Yun*, Sujin Yun, Sungpil Woo, Sunhwan Lim, and Jinkyoo Park

[Paper](#) / [Code](#)

ICML, 2025

(based on ICLR'W)

[C9] Posterior Inference with Diffusion Models for High-dimensional Black-box Optimization

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

[Paper](#) / [Code](#)

ICML, 2025

(based on NIPS'W)

[C8] Improved Off-Policy Reinforcement Learning in Biological Sequence Design

Hyeonah Kim, Minsu Kim, Taeyoung Yun, Sanghyeok Choi, Emmanuel Bengio, Alex Hernández Garcia, and Jinkyoo Park

[Paper](#) / [Code](#)

CVPR, 2025

[C7] 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

[C6] 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](#)

NeurIPS, 2024

[C5] Guided Trajectory Generation with Diffusion Models for Offline Model-based Optimization

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

[Paper](#) / [Code](#)

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|-----------------------------------|---|
| NeurIPS, 2024 (based on ICLRW) | [C4] GTA: Generative Trajectory Augmentation with Guidance for Offline Reinforcement Learning Jaewoo Lee*, Sujin Yun*, Taeyoung Yun , and Jinkyoo Park Paper / Code |
| KDD, 2024 | [C3] 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 (based on NIPSW) | [C2] Learning to Scale Logits for Temperature-conditional GFlowNets Minsu Kim*, Juhwan Ko*, Taeyoung Yun , Dinghuai Zhang, Ling Pan, Woochang Kim, Jinkyoo Park, and Yoshua Bengio Paper / Code |
| ICLR, 2024 (Spotlight) | [C1] Local Search GFlowNets Minsu Kim, Taeyoung Yun , Emmanuel Bengio, Dinghuai Zhang, Yoshua Bengio, Sungsoo Ahn, and Jinkyoo Park Paper / Code |

Journal Publications

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|--------------------------------------|--|
| TMLR, 2026 (Survey Certification) | [J1] Offline Model-Based Optimization: Comprehensive Review Minsu Kim, Jiayao Gu, Ye Yuan, Taeyoung Yun , Zixuan Liu, Yoshua Bengio, Can Chen Paper / Code |
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TEACHING EXPERIENCES

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|------|---|--------------|
| 2025 | Teaching Assistant IE343: Statistical Machine Learning IE437: Data-Driven Decision Making and Control | KAIST |
| 2024 | Teaching Assistant IE437: Data-Driven Decision Making and Control IE481: Manufacturing & Artificial Intelligence | KAIST |
| 2022 | Teaching Assistant MAS480: Introduction to Scientific Machine Learning | KAIST |

HONORS & AWARDS

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|------|--|---------------------|
| 2025 | Qualcomm Innovation Fellowship Finalist Paper: Learning to Sample Effective and Diverse Prompts for Text-to-Image Generation | Seoul, Korea |
| 2025 | Top Reviewer Honor for Top 8% Reviewers | NeurIPS |
| 2021 | Dean's List Honor for Top 2% Students | KAIST |
| 2021 | Excellence Award (2nd Place) Big Data Competition Hosted by NH | Seoul, Korea |