

Kiyoung Om

Graduate Student, Graduate School of Data Science, KAIST, Daejeon, South Korea

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RESEARCH INTERESTS

- Generative Models for Optimization and Control
- Alignment of Generative Models via Search and Fine-tuning

EDUCATION

Korea Advanced Institute of Science and Technology (KAIST), Daejeon, South Korea Mar 2024 – Feb 2026

Master of Science in Data Science

Graduate School of Data Science

Advisor: Prof. Jinkyoo Park, System Intelligence Lab

Korea University, Seoul, South Korea

Mar 2018 – Feb 2024

Bachelor of Science in Industrial Management Engineering

GPA: 4.02/4.5, Major GPA: 4.19/4.5

Military Service: Republic of Korea Army

Sep 2019 – Feb 2021

PUBLICATIONS

Conference Papers & Workshop Proceedings

- Yun, T.*, **Om, K.***, Lee, J., Yun, S., & Park, J. (2025). Posterior Inference with Diffusion Models for High-dimensional Black-box Optimization. *Accepted in ICML 2025 and ICLR 2025 Workshop*. OpenReview (*Equal contribution)
- **Om, K.***, Sim, K.*, Yun, T.*, Kang, H., & Park, J. (2025). Posterior Inference in Latent Space for Scalable Constrained Black-box Optimization. *Accepted in NeurIPS 2025 SPIGM Workshop (Oral)*, Submitted to AISTATS2026. OpenReview (*Equal contribution)

Preprints

- Lee, J., Kim, M., Choi, S., Song, I., Yun, S., Kang, H., Shin, W., Yun, T., **Om, K.**, & Park, J. (2025). Diffusion alignment as variational expectation-maximization. *Submitted to ICLR 2026*. arXiv
- Kang, H.*, Lee, J.*, Shin, W.*, **Om, K.**, & Park, J. (2026). Diffusion fine-tuning via reparameterized policy gradient of the soft Q-function. *Submitted to ICLR 2026*. (*Equal contribution)

RESEARCH EXPERIENCE

Samsung Electronics-KAIST AI Industry-Academia Collaboration

Daejeon, South Korea

AI Research Assistant

Mar 2025 – Present

- Developing AI-enhanced supply chain management optimization using subgradient lambda prediction.
- Improving optimization speed and efficiency in complex SCM problems through machine learning approaches.

Korea University Solar Cell Lab AI Industry-Academia Collaboration

Seoul, South Korea

AI Application Advisor

Apr 2023 – Jul 2023

- Developed prediction models for weighted-average reflection of solar cells using panel images (CNN).
- Created experimental data and efficiency prediction system for Perovskite Solar Cells based on weather forecasting.

TEACHING EXPERIENCE

KAIST Industrial & Systems Engineering

Daejeon, South Korea

Teaching Assistant - IE343 Statistical Machine Learning

Mar 2024 – Jun 2024

- Supported undergraduate students in developing foundation in machine learning concepts.
- Graded assignments and provided detailed feedback on student work.
- Covered topics including supervised/unsupervised learning, regression, classification, and model evaluation.

Korea University

Seoul, South Korea

Teaching Assistant - Deep Learning Programming Study

Jul 2023 – Aug 2023

- Assisted students with implementing neural networks using PyTorch under Professor Sungbin Lim.
- Guided participants through practical exercises in deep learning.

SKILLS

Languages	Korean (Native), English (Fluent)
Programming	Python, SQL
ML/DL Frameworks	PyTorch, TensorFlow, Scikit-learn, NumPy, Pandas, FinRL
Developer Tools	Git, LaTeX, Jupyter Notebook

AWARDS

Academic Excellence Award	Korea University, 2022
Capstone Excellence Award	Korea University, 2022
<i>Topic: Understanding the Lifecycle and Gap Technologies of Lithium-Ion Batteries</i>	
Commander's Commendation	Republic of Korea Army, 2020
<i>Speech Contest on Practicing the Core Values of the Army and Showcasing Examples</i>	

EXTRACURRICULAR ACTIVITIES

KUBIG (Korea University BIG data research club)	Seoul, South Korea
<i>Regular Member</i>	Jul 2022 – Jul 2023

- Participated in and led study groups on NLP, Computer Vision, and Reinforcement Learning.
- Developed a vehicle hazard detection system using the YOLOv7 architecture.
- Led an algorithmic trading and backtesting research project using the FinRL framework.