# Sujin Yun

MS student @ KAIST

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## RESEARCH INTEREST

- Diffusion models

- Reinforcement Learning

- Black-box Optimization

## EDUCATION

**Master of Science (M.S.)**                                           Daejeon, South Korea
*Korea Advanced Institute of Science and Technology*                *3/2023 – 2/2025 (expected)*

- Major: Data Science
- Advised by Prof. Jinkyoo Park
- Thesis: Novel generative data augmentation method for offline Reinforcement learning with conditional diffusion model

**Bachelor of Science (B.S.)**                                           Seoul, South Korea
*Yonsei University*                                                      *3/2018 – 2/2023*

- Major: Industrial Engineering

## PUBLICATIONS (*: EQUAL CONTRIBUTION)

[1] **GTA: Generative Trajectory Augmentation with Guidance for Offline Reinforcement Learning**
Jaewoo Lee*, **Sujin Yun**\*, Taeyoung Yun, Jinkyoo Park                    *NeurIPS 2024*
https://arxiv.org/abs/2405.16907

[2] **Guided Trajectory Generation with Diffusion Models for Offline Model-based Optimization**
Taeyoung Yun, **Sujin Yun**, Jaewoo Lee, Jinkyoo Park                       *NeurIPS 2024*
https://arxiv.org/abs/2407.01624

[3] **An Offline Meta Black-box Optimization Framework for Adaptive Design of Urban Traffic Light Management Systems**
Taeyoung Yun*, Kanghoon Lee*, **Sujin Yun**, Ilmyung Kim, Wonwoo Jung, Mincheol Kwon, Kyujin Choi,
Yoohyeon Lee, Jinkyoo Park                                                  *KDD 2024*
https://dl.acm.org/doi/abs/10.1145/3637528.3671606

## TEACHING EXPERIENCE

**Korea Advanced Institute of Science and Technology**                  Daejeon, South Korea
- TA, IE437: Data-Driven Decision Making and Control                     *3/2024 – 6/2024*

## INDUSTRY PROJECT

**Automated Control of Compressor Operations through offline RL**        Samsung Heavy Industry
- Develop an model to control compressor in shipyard                     *4/2023 – 10/2023*
- Researched control algorithms with the objective to optimize power consumptions, using offline Reinforcement learning

## Extracurricular Activities

**YAI, Yonsei Artificial Intelligence club** *1/2022 – 12/2022*
- Served as the president of the club, leading overall club activities and managing members
- Organized and led seminars on graph learning, based on Stanford's CS224w course
- Organized and led seminars on Natural Language Processing with Deep Learning, based on Stanford's CS224n course

**Ybigta, Yonsei Big data club** *1/2021 – 12/2021*
- Led a project to develop a chatbot with emotion-based personas, using a Korean emotion classification dataset, and serve it via a messenger app
- Conducted a study group focusing on research papers about transformers in natural language processing
- Participate in a Docker study group, exploring containerization concepts and applications in real-world

## Work Experience

**CJ Logistics Data Science Team** Seoul, South Korea
*Intern Researcher* *1/2022 – 2/2022*
- Developing a deep learning model for demand forecasting and vehicle number prediction algorithms based on logistics data.

**Voithru** Seoul, South Korea
*Intern Data Scientist* *3/2021 – 8/2021*
- Developing and maintaining KPI dashboard.
- Data analysis on youtube log data and user log data with SQL, python.

## Awards

**Second place on CJ logistics AI/Big data & System Future Technology Challenge** *11/2021*