Seouh-won Yi

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Research Interests

Bandit Algorithms, Reinforcement Learning, Statistical Learning, Optimization

Education

Seoul National University *Mar. 2025 – **Present***
Ph.D. Candidate in Data Science, Advisor: Min-hwan Oh

Seoul National University *Mar. 2023 – Feb. 2025*
M.S. in Data Science, Advisor: Min-hwan Oh, GPA: 4.16/4.3

- GPA: 4.16/4.3
- **Thesis title:** Exploration via Feature Perturbation in Contextual Bandits

Korea University *Mar. 2017 – Feb. 2023*
B.S. in Mathematics & B.A. in Statistics

- GPA: 4.47/4.5

Publications

[1] **Exploration via Feature Perturbation in Contextual Bandits**
S. Yi, and M. Oh
*Neural Information Processing Systems (**NeurIPS**), 2025, **Spotlight**.*

[2] **Preference-based Reinforcement Learning beyond Pairwise Comparisons: Benefits of Multiple Options**
J. Lee, S. Yi, and M. Oh
*Neural Information Processing Systems (**NeurIPS**), 2025.*

Experience

Military Service (Republic of Korea Army) *Jun 2019 – Jan 2021*

Competitions

2022 Defense AI Competition, AI CONNECT 43rd / 110
Building Change Detection Using Aerial Image Data (CNN-based)

Auto-Bidding in Uncertain Environment, NeurIPS 2024 20th / 731
Designing an Online Second-Price Auction Bidding Strategy (*Alibaba Cloud*)

Teaching

Machine Learning & Deep Learning for Data Science I, Seoul National University Fall 2023

Data Science Basics & Applications, Seoul National University Fall 2023

Data Science Bootcamp: Mathematics/Statistics, Seoul National University Summer 2023

Projects

Facial Image Analysis 2022

- Age and emotion analysis of facial image data using CNN modeling.
- Analyzing emotion distribution by age group based on the analyzed data.

Advanced Map for Pedestrians with Mobility Impairments 2023

- Implementation of an enhanced pathfinding map reflecting slope using RDBMS and Neo4j.
- Augmented display of nearby facilities for pedestrians with mobility impairments.

User-Friendly Movie Recommendation System 2023

- Recommendation system based on user input (mood, filters, anti-filters, etc.).
- Plot-based recommendation system utilizing a database through LangChain.

Essay Writing Assistance for U.S. High School Students 2024

- Generating ideal essay drafts per prompt using LangChain.
- Employing a Chain-of-Thought approach to self-generate feedback and revise drafts.
- Delivering an interactive service using Python Streamlit.

Learning the Generative Grammar of Recipes 2025

- Funded by *Samyang Roundsquare*.
- Developing a GFlowNet-based model to learn the distribution of real-world recipe databases.
- Studying ingredient compatibility via compound-level generative flavor relationships.

Awards and Achievements

Minister of Science and ICT Award (Republic of Korea), K-Data Science Conference 2025
Fund Scholarship (Dept. of Mathematics SIGMA), Korea University 2022
President's Award, Korea University 2022
Dean's Award, Korea University 2021
Dean's Award, Korea University 2019
Special Scholarship for Student Affairs, Korea University 2018
Special Scholarship for Student Affairs, Korea University 2017

Invited Talks & Conference Presentations

"Exploration via Feature Perturbation in Contextual Bandits"

- 2025 Korea Data Science Conference, **Minister of Science and ICT Award** Sep. 2025
- 2025 Korea Artificial Intelligence Association (KAIA) Aug. 2025

Skills

Languages	English (TEPS 447), Japanese (Intermediate), French (Elementary)
Programming	Python, R, C/C++, SQL, LaTeX
Databases	MySQL, PostgreSQL, Neo4j
Web Development	HTML, CSS, Streamlit