Seon Ho **Yoo**

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"If you're asked for 100% effort, give more than 120%."

Education

Korea University — *Seoul, S.Korea*

Industrial & Management Engineering — *March. 2023 - Present*

- Expected early graduation in Fall 2025 (6 semesters completed)

Internships

Structure & Knowledge Injection into Machine Learning(SKI-ML) — *Seoul National University*

Research Intern — *Jul. 2025 - Present*

- **Research Area**
- Designed and evaluated graph construction methods (e.g., entity linking and relation extraction) to improve multi-step inference accuracy in QA systems.
- Designed and implemented an energy function capturing dependencies among structured outputs, improving prediction accuracy in bioinformatics tasks such as molecular property inference and sequence-structure mapping.

Supply Chain & Value Network Analytics Lab(SAVANNA) — *Korea University*

Research Intern — *Sep. 2024 - Jun. 2025*

- **Research Projects**
- Integrated Optimization of Future Logistics and Freight Brokerage in Multi-Supply Chain Systems: Development of Intelligent Last-Mile and Middle-Mile Algorithms Based on 5PL Platforms (2025.03 – Present)
- Location Optimization of Battery Swapping Stations for Electric Two-Wheelers in Sustainable Urban Delivery Services Industry-Academia Joint Technology Development Project (LINC 3.0) (2024.09 – 2025.01)
- **Conference Presentations**
- **Yoo, S.**, Ko, K., Kim, T., Jeong, T. (2025). Improving Electric Two-Wheeler Battery Swap Demand Forecasting via Clustering and Data Augmentation. *Spring Conference, Korean Society of Supply Chain Management (SCM)*, Seoul, Korea.
- Choi, M., Ko, K., Kim, T., Yoo, S., Joo, S., Jeong, T. (2024). Location Optimization of Battery Swapping Stations for Electric Two-Wheelers in Sustainable Urban Delivery Services. *Fall Conference, Korean Society of SCM*, Seoul, Korea.
- Kim, T., Ko, K., Choi, M., Yoo, S., Joo, S., Jeong, T. (2024). Data-Driven Location Optimization of Battery Swapping Stations for Electric Two-Wheelers in Urban Delivery Services. *Fall Conference, Korean Institute of Industrial Engineers (KIIE)*, Seoul, Korea.

Project Experience

Triple-Strategy Margin-Filtered Pseudo-Labeling for Demand Forecasting of Electric Two-Wheeler Battery Swapping Stations

Project Leader & SAVANNA Lab Research Intern, Korea University

- Led an independent research project on demand forecasting for electric two-wheeler battery swapping stations under the SAVANNA Lab.
- Clustered regions by demand level using unsupervised learning and redefined the forecasting task as a multi-class classification problem.
- Proposed TriMa — a novel pseudo-labeling framework integrating static, dynamic, and entropy-based self-training methods.
- Extended prediction to regions lacking historical data via robust augmentation and high-confidence pseudo-label fusion.
- **Patent filed**: Method and System for Optimal Location Selection of BSS for Electric Two-Wheelers (KIPO 10-2025-0038793)
- **Presented** at the 2025 Korean Society of Supply Chain Management (SCM) Spring Conference
- **Manuscript in preparation** for submission to the Journal of the Korean Institute of Industrial Engineers (KIIE)

Reinforcement Learning-Based Analysis of Volume Efficiency in 3D Bin Packing with Stack and Conveyor Variables

Project Leader

- Proposed a 3D bin packing framework using logistics-specific variables like stack and conveyor.
- Applied reinforcement learning to simulate warehouse operations and improve volume utilization.
- Demonstrated how operational constraints affect packing performance, offering insights for intelligent logistics loading.
- **Presented** at the 2024 Fall Conference, Korean Institute of Industrial Engineers (KIIE)
- **Awarded** Bronze Prize, Korean Institute of Industrial Engineers

School-Age Population-Based Optimization of Education Facility Locations

Member

- Visualized and analyzed the decline in school-age population to support strategic decisions for educational infrastructure.
- Built a user-weighted LP model and applied the CFLP algorithm to identify optimal public facility locations.
- **Awarded** Excellence Prize, FIELD CAMP Competition, Korean Institute of Industrial Engineers

Customized Marketing Strategy for Regional Festivals Through Scientific Analysis

Project Leader, Presenter

- Industry-Academia Collaboration with KT Big Data Center
- Analyzed large-scale regional festival datasets to identify key success factors and behavioral patterns using data-driven approaches.
- Developed the Festival Success Index (FSI) — a quantitative metric designed to evaluate festival performance based on objective indicators.
- Constructed regression models to derive coefficients tailored to different festival types, enabling accurate estimation and comparison.

Others

- **AI Algorithm Competition for Anomaly Detection in Water Supply Networks** (Based on Machine Learning)
- **Analysis of Winning Factors and Game Outcome Prediction in College Basketball** (Based on Machine Learning)
- **Automated IPC Technology Classification via AI and NLP Techniques** (Based on Deep Learning)
- **Optimal Timetable Design for Incoming University Students** (Based on Optimization)
- **Correlation Analysis Between Medical and Living Standards** (Based on Data Analysis)
- **Development of an Online Voting Management System for University Students** (Based on SQL)

Extracurricular Activity

WeTIE (Institute for Industrial Engineering in Korea University)

Korea University

Member & Executive Member, Education Department — *Mar. 2023 - Present*

- Active Member, 11th to 15th Cohorts
- Executive Member, Education Division (15th Cohort)
- Led academic paper review sessions for the 14th Cohort, focusing on social entrepreneurship and impact evaluation
- Organized and facilitated machine learning education sessions for the 15th Cohort, covering fundamental concepts and hands-on projects

Student Success Center in Korea University

Korea University

Data Analytics Team Member — *May. 2024 - Dec. 2024*

- Analyzed student participation data to derive insights on program effectiveness and engagement trends

B.D.A (Institute for Big Data Analysis)

Member — *Mar. 2024 - Aug. 2024*

- Selected as an Outstanding Member (Top 1%) of the 8th Cohort
- Participated in the Data Analytics & Modeling Track

SK LOOKIE Korea University (Social Venture Founders' Association)

Member & President at 2024 — *Sep. 2023 - Feb. 2025*

- Team Leader, Startup Project (Fall 2023)
- Led overall operations of the club in 2024, including strategic planning, member engagement, and collaboration with external partners.

Awards & Honors

Awards

2024 **Bronze Prize**, 20th University Students Industrial Engineering Project Competition (KIIE)

2024 **Excellence Prize**, KU–Yonsei Joint Industrial Engineering Academic Exchange Festival

2023 **Excellence Prize**, FIELD CAMP Competition "Optimization of Public Education Facility Locations" (KIIE)

2021 **Excellence Prize**, 67th Korea National Science Exhibition Ministry of Trade, Industry and Energy, S. Korea

Honors

2025 **Appointed**, **Presidential Science Scholarship, Ministry of Science and ICT**

2024 **Award**, Academic Excellence Award, Korea University

2024 **Appointed**, Sang-Ah Scholarship Foundation, Scholarship Recipient

2024 **Completed**, Intellectual Property Camp, Department of IME, Korea University

2023 **Completed**, Creative Challenger Program, Korea University

2023 **Completed** , Codeit University Coding Bootcamp (12th Cohort)

2023 **Award**, Academic Excellence Award, Korea University

Others

Vice President of the 41st Student Council in the Department of Industrial & Management Engineering at Korea University.
Advanced Data Analytics Semi-Professional (ADsP) certification.