

YOOSEOK LIM

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CURRENT POSITION

Seoul National University Hospital Researcher, Office of Hospital Information Research Advisor: <i>Hyun-Lim Yang, ByoungJun Jeon</i>	Feb 2025 - <i>Seoul, South Korea</i>
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EDUCATION

Soongsil University M.S in Industrial and Information Systems Engineering Academic Advisor: <i>Sujee Lee, AI-Healthcare Lab</i> GPA: 3.96/4.0	Mar 2022 - Feb 2024 <i>Seoul, South Korea</i>
Soongsil University B.S in Industrial and Information Systems Engineering GPA: 3.69/4.0 (cumulative), 3.68/4.0 (major) Leave of absence for military service: April 2018 – Nov 2019	Mar 2016 - Feb 2022 <i>Seoul, South Korea</i>

CURRENT RESEARCH PROJECTS

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- Interpretable Multi-Agent Clinician. [[url](#)]
 - Development of an Autonomous Pre-operative Setup Robot Platform Powered by LLM–VLA Integration

PUBLICATIONS AND PREPRINTS

In Progress

1. **Y. Lim**, G. Shin, B. Jeon, H. Yang, M. Lim, J. Leigh
Assessing Senior Driver Safety through Trajectory-Level Inverse Reinforcement Learning: A Multidimensional Evaluation for Conditional Licensing, *Submitted to Nature Machine Intelligence, Under Review*.
2. **Y. Lim**, B. Jeon, S. Park, J. Lee, S. Choi, C. Jeong, H. Ryu, H. Lee, H. Yang
Large Language Model-augmented Offline Reinforcement Learning Framework for Sepsis Management in Critical Care [MORE-CLEAR], *Submitted to NPJ Digital Medicine, Under Review*
3. **Y. Lim**, I. Park, S. Lee
Trustworthy ICU Care: an Uncertainty-Aware Reinforcement Learning Framework for Safer Drug Dosing, *Submitted to Journal of Biomedical Informatics, Revision*.
4. **Y. Lim**, S. Lee
Generalizable Repetition Counting via Metric-Based Few-Shot Learning on Wearable Motion Signals, *Submitted to IEEE Sensors, Under Review*

Journal Papers

1. **Y. Lim**, I. Park, S. Lee
A Reinforcement Learning Framework for Personalized Anticoagulation Dosing in Critical Care: Integrating Batch-Constrained Policy Optimization and Off-Policy Evaluation, *IEEE Access*, **2025**

2. **Y. Lim**, S. Lee
OMG-RL: Offline Model-based Guided Reward Learning for Heparin Treatment. *Biomedical Engineering Advances*, **2025**
3. E. Kim, **Y. Lim**
Mapping Interconnectivity of Digital Twin Healthcare Research Themes through Structural Topic Modeling. *Scientific Reports*, **2025**
4. S. Lee, **Y. Lim**, K. Lim
Multimodal Sensor Fusion Models for Real-Time Exercise Repetition Counting with IMU Sensors and Respiration Data. *Information Fusion*, **2024**
5. Y. Choe, S. Lee, **Y. Lim**, S. Kim
Machine Learning-Derived Model for Predicting Poor Post-Treatment Quality of Life in Korean Cancer Survivors. *Supportive Care in Cancer*, **2024**

CONFERENCE PRESENTATIONS

1. **Y. Lim**, I. Park, S. Lee
Improving Medication Treatment Policies with Batch Deep Reinforcement Learning Algorithms, Conference of the Korean Institute of Industrial Engineers (KIIE), Jeju, Korea, Jun **2023**
2. **Y. Lim**, K. Lim, S. Kim, M. Lee, I. Cho, S. Lee
Meta-Learning Based Exercise Repetition Counting Framework Using a Head-mounted IMU Sensor, Conference of the Korean Institute of Industrial Engineers (KIIE), Jeju, Korea, Jun **2023**
3. K. Lim, **Y. Lim**, C. Kang, S. Lee
Establishment of BERT-based Personalized Course Recommendation System, Conference of the Korean Institute of Industrial Engineers (KIIE), Jeju, Korea, Jun **2023**
4. M. Lee, S. Kim, I. Cho, **Y. Lim**, S. Lee
SSULET: Real-Time Deception Detection Deep Learning Model, Conference of the Korean Institute of Industrial Engineers (KIIE), Jeju, Korea, Jun **2023**
5. **Y. Lim**, S. Lee
Decision for Optimal Policies on Heparin Treatment using Reinforcement Learning, Conference of the Korea Data Mining Society (KDMS), Busan, Korea, Aug **2022**

RESEARCH PROJECTS

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|---|---------------------|
| Samsung Electronics , Korea | Sep 2023 - Feb 2024 |
| · Development of an AI Model and Service Concept based on Canine Activity Data
-Main Duties: Proposal writing, Experiment design and implementation, Model development | |
| Soongsil University , Korea | Mar 2023 - Dec 2023 |
| · Development of a Course Recommendation System based on Natural Language Data
-Main Duties: Data collection and analysis | |
| Samsung Electronics , Korea | Jun 2022 - Oct 2022 |
| · Development of a Counting Algorithm based on Human Activity Data
-Main Duties: Experiment design and implementation, Model development | |

PERSONAL PROJECTS

3D Medical Segmentation

- Implementation of Various 3D Image Segmentation Models [[github](#)]

Traffic Sign Detection

- Evaluation of Various Object Detection Model using 2 benchmark datasets [[github](#)]

Autonomous Driving Temperature Measurement Robot

- Development of the Autonomous Driving Robot using Computer Vision, Reinforcement Learning, and Edge Computing technologies [[github](#)]

SERVICES

Reviews

- Supportive Care in Cancer (2025)
- IEEE Robotics and Automation Letters (IEEE R-AL), Transactions on Industrial Informatics (2024)
- IEEE International Conference on Automation Science and Engineering (IEEE CASE) (2022, 2023)

PATENT

Exercise Data Processing Method and Electronic Device Performing the Same.

<https://doi.org/10.8080/1020220187795>. April. 2024.

WORK EXPERIENCE

Manufacturing Systems Laboratory, Soongsil University

Researcher

- Research topic : LLM tuning using Reinforcement Learning May 2024 - Jan 2025

DataTree

Data Analyst Intern

Jan 2021 - Jun 2021

- Investigating and analyzing a Korean corpus parsing system

Wantreez Music

Software Engineer

Sep 2020 - Dec 2020

- Planning and developing a company CMS website

HONORS AND AWARDS

Scholarships

Superior Academic Performance Scholarship, Soongsil University Spring 2022 - Fall 2023

College Achievement Scholarship, College of Engineering, Soongsil University Fall 2021

Superior Academic Performance Scholarship, Soongsil University Fall 2016

Awards

Gold Prize, Hyeongnam Science Award Dec 2021

Honorable Mention, Hanium Contest Dec 2021

- Travel Destination Recommendation Application

Honorable Mention, Hanium Contest Dec 2020

- Data Quality Analysis Website

SKILLS

Programming Language: Python, R, C++, JavaScript, Node JS, Kotlin

Machine Learning: PyTorch, TensorFlow

Others: Raspberry pie, Arduino

RELEVANT COURSEWORK

Mathematics

Probability and Statistics, Linear Algebra, Engineering Mathematics, Machine Learning Mathematics

Machine Learning

Reinforcement Learning, Deep Learning, Data Analysis and its Applications, Data Mining, Data structures and Algorithms, Big data processing, Robot Vision