

# YOOSEOK LIM

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## CURRENT POSITION

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

<b>Soongsil University</b> M.S in Industrial and Information Systems Engineering <i>Academic Advisor: <u>Sujee Lee</u>, <u>AI-Healthcare Lab</u></i> GPA: 3.96/4.0	Mar 2022 - Feb 2024 <i>Seoul, South Korea</i>
<b>Soongsil University</b> 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

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

## PUBLICATIONS AND PREPRINTS

### Under Review

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 Licences, *Nature Machine Intelligence*.
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], *NPJ Digital Medicine*, [Preprint](#)
3. **Y. Lim**, S. Lee  
Generalizable Repetition Counting via Metric-Based Few-Shot Learning on Wearable Motion Signals, *IEEE Sensors*, [Preprint](#)

### Revision

1. **Y. Lim**, I. Park, S. Lee  
Trustworthy ICU Care: an Uncertainty-Aware Reinforcement Learning Framework for Safer Drug Dosing, *Journal of Biomedical Informatics*.
2. **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*, [Preprint](#)

### Journal Papers

1. **Y. Lim**, S. Lee  
OMG-RL: Offline Model-based Guided Reward Learning for Heparin Treatment. *Biomedical*

*Engineering Advances, 2025*

2. E. Kim, **Y. Lim**  
Mapping Interconnectivity of Digital Twin Healthcare Research Themes through Structural Topic Modeling. *Scientific Reports, 2025*
3. 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*
4. 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

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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

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### 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

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### 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

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Exercise Data Processing Method and Electronic Device Performing the Same.

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

## WORK EXPERIENCE

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### 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

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### Scholarships

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|---|-------------------------|
| Superior Academic Performance Scholarship, Soongsil University              | Spring 2022 - Fall 2023 |
| College Achievement Scholarship, College of Engineering, Soongil University | Fall 2021               |
| Superior Academic Performance Scholarship, Soongsil University              | Fall 2016               |

### Awards

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|---|----------|
| 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

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

Machine Learning: PyTorch, TensorFlow

Others: Raspberry pie, Arduino

## RELEVANT COURSEWORK

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**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