# YOOSEOK LIM

✉ seook6453@gmail.com    🏠 https://doldolee.github.io

## CURRENT POSITION

**Seoul National University Hospital**                                          Feb 2025 -
Researcher, Office of Hospital Information                                *Seoul, South Korea*
*Research Advisor: Hyun-Lim Yang, ByoungJun Jeon*

## EDUCATION

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

**Soongsil University**                                                   Mar 2016 - Feb 2022
B.S in Industrial and Information Systems Engineering              *Seoul, South Korea*
GPA: 3.69/4.0 (cumulative), 3.68/4.0 (major)
Leave of absence for military service: April 2018 – Nov 2019

## RESEARCH INTERESTS

· **Medical AI Applications**
· Reinforcement Learning, NLP, Time-Series Analysis, Ubiquitous Computing

## PUBLICATIONS AND PREPRINTS

**Journal Papers**

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

**Revision**

1. **Y. Lim**, S. Lee
   OMG-RL: Offline Model-based Guided Reward Learning for Heparin Treatment, Preprint
2. **Y. Lim**, I. Park, S. Lee
   Offline Reinforcement Learning for Personalized Anticoagulation Dosing in Critical Care via Batch-Constrained Policy Optimization, *SCIE journal*, Preprint

**Under Review**

1. **Y. Lim**, B. Jeon, S. Park, J. Lee, S. Choi, C. Jeong, H. Ryu, H. Lee, H. Yang
   MORE-CLEAR: Multimodal Offline Reinforcement learning for Clinical notes Leveraged Enhanced State Representation, *SCIE journal*, Preprint
2. **Y. Lim**, I. Park, S. Lee
   Trustworthy ICU Care: an Uncertainty-Aware Reinforcement Learning Framework for Safer

Drug Dosing, *SCIE journal*

3. **Y. Lim**, S. Lee
   Intelligent Repetition Counting for Unseen Exercises: A Few-Shot Learning Approach with Sensor Signals, *SCIE journal*, Preprint

## 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

**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 Univsersity      Spring 2022 - Fall 2023
College Achievement Scholarship, College of Engineering, Soongil 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