YOOSEOK LIM

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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, 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

· IEEE Robotics and Automation Letters(IEEE R-AL)(2024)

· IEEE 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