



Dongwoo Son

ROBOTICS · REINFORCEMENT LEARNING

50 Pyeonghwa-ro 348beon-gil, Paju-si, Gyeonggi-do, Republic of Korea
☎ (+82) 10-4918-1275 | ✉ sondongwoo2024@gmail.com | 📱 Son-Dongwoo

“Let’s do something worthwhile.”

Summary

With hands-on experience in deep reinforcement learning and robotics, I aim to develop innovative robotic systems capable of operating autonomously in complex environments.

Research Interests

Deep Reinforcement Learning Mobile Robotics

Education

KwangWoon University

B.S. IN SCHOOL OF ROBOTICS

Seoul, S.Korea

Mar. 2021 - Present

- **Total GPA** : 3.59 / 4.50, **Major GPA** : 3.61 / 4.50
- **Club** : BARAM Robotics (Robotics Academic Group) - [2023 Staff], Mar.2021 - Present

Work Experience

PLAYWELL KOREA

INTERN, ROBOT EDUCATION INSTRUCTOR & MARKETING ASSISTANT

Seoul, S.Korea

Dec. 2021 - Present

- Designed and taught robotics education programs.
- Participated as a coach in international and national robotics competitions.
- Created promotional materials and managed social media content.

Awards

- 2023 **Robot Challenge 2023 Beijing**, Excellent Coach
- 2023 **The World Embedded Software Contest**, Encouragement Award

Beijing, China

Seoul, S.Korea

Skills

- Programming Languages** Python, C/C++, MATLAB
- Development Tools** Git, Anaconda, Docker
- Frameworks & Libraries** ROS2, Pytorch

Extracurricular Activity

DQN Based Omok Game

PERSONAL PROJECT

BARAM Robotics

Sep. 2022 - Nov. 2022

- Developed an Omok game using Deep Q-Learning (DQN) implemented with PyTorch.
- Achieved approximately a 50% win rate in matches against human players, validating the effectiveness of the agent.

Manipulator Continuous Control with Deep Reinforcement Learning

PERSONAL PROJECT

BARAM Robotics

Mar. 2023 - Jun. 2023

- Implemented Deep Deterministic Policy Gradient (DDPG) for continuous control of a 6-DoF manipulator.
- Used ROS2, Gazebo, and PyTorch to develop an integrated system combining simulation, control, and learning modules.
- Successfully achieved an upward-sloping reward graph, validating the training process.

2023 Open Source Contribution Academy

MENTEE

Ministry of Science and ICT, NIPA

Jul. 2023 - Oct. 2023

- Contributed to translating PyTorch Tutorial documents from English to Korean using Git.

Robot Challenge 2023 Beijing

TEAM COACH

- Coached a team in the Robot Sumo Junior and Robot Bowling Junior.

IRCE, innoc

Jun. 2023 - Aug. 2023

2024 RoboCup Korea Open

TEAM COACH

- Coached a team in the RoboCupRescue Simulation Junior category.
- Taught mapping, path planning, and path tracking algorithms.
- Led the team to 3rd place in the competition.

RoboCup Korea Association, RCKA

Dec. 2023 - Feb. 2024

User-Following and Transport Assistance Robot with E-Corner System

CAPSTONE DESIGN

- Developed a user-following and transport assistance robot using ROS2, a Depth Camera, and YOLOv10n.
- Implemented communication systems for integrating various devices.

Kwangwoon Univ.

Jan. 2024 - Jun. 2024

2024 WRO Korea

TEAM COACH

- Coached a team in the Future Innovators - Senior category to design a lithium-ion battery reuse system.
- Led the team to 1st place in Korea.

Green Human IT Association

Jun. 2024 - Aug. 2024

WRO International Final 2024 Türkiye - IZMIR

TEAM COACH

- Coached a team in the Future Innovators - Senior category to design a sustainable lithium-ion battery reuse system.
- Led the team to Bronze Award at the international competition.

Science Heroes Association

Aug. 2024 - Nov. 2024