

CONTACT INFORMATION	Independent Robotics Researcher Yongin 17066, South Korea	+82 10-3516-1968 kgm04008@gmail.com gmkim97.github.io
RESEARCH INTERESTS	Human-Robot Interaction, Data-driven Control, Robot Learning, Physics-guided Learning, Foundation Model, Computer Vision	
EDUCATION	Sungkyunkwan University, South Korea Master of Science in Engineering Intelligent Robotics GPA : 4.5 / 4.5 Thesis : “Motion Planning-Augmented Reinforcement Learning for Long-Horizon Visual Robot Manipulation in Home Assistance” (Advisor : Prof. Mun-Taek Choi)	<i>Aug.2023 - Aug.2025</i>
	Sungkyunkwan University, South Korea Bachelor of Science in Mechanical Engineering Mechanical Engineering GPA : 4.28 / 4.5 (Summa Cum Laude)	<i>Mar.2017 - Aug.2023</i>
RESEARCH EXPERIENCE	Graduate Research Assistant Helper lab, Sungkyunkwan University, Suwon, South Korea	<i>Aug.2023 - Aug.2025</i>
	<ul style="list-style-type: none">• Transitional research of exoskeleton robot for gait rehabilitation based on AI for hemiplegia patients<ul style="list-style-type: none">– This study was supported by the Translational Research Program for Rehabilitation Robots (NRCTR-EX23002), National Rehabilitation Center, Ministry of Health and Welfare, Korea.– Developing an AI-based ground-walking exoskeleton robot for rehabilitation of post-stroke hemiplegic patients who have the motor disorder at lower limb.– Participation in analyzing joint-level gait trajectories and clustering their patterns based on deep learning.	
	Undergraduate Research Assistant Helper lab, Sungkyunkwan University, Suwon, South Korea	<i>Mar.2023 - Aug.2023</i>
	<ul style="list-style-type: none">• Transitional research of exoskeleton robot for gait rehabilitation based on AI for hemiplegia patients<ul style="list-style-type: none">– This study was supported by the Translational Research Program for Rehabilitation Robots (NRCTR-EX23002), National Rehabilitation Center, Ministry of Health and Welfare, Korea.– Developing an AI-based ground-walking exoskeleton robot for rehabilitation of post-stroke hemiplegic patients who have the motor disorder at lower limb.– Participation in analyzing joint-level gait trajectories and clustering their patterns based on deep learning.	

Journals

1. **Gyeongmin Kim**[†], Hyungtai Kim[†], Yun-Hee Kim, Seung-Jong Kim, and Mun-Taek Choi, “Deep Temporal Clustering of Pathological Gait Patterns in Post-Stroke Patients Using Joint Angle Trajectories: A Cross-Sectional Study”, *Bioengineering* 2025, 12(1), 55.

Preprint

1. **Gyeongmin Kim**[†], and Jonghoek Kim, “Neural Network-Assisted AUV Navigation in Complete DVL-Denied Environments Using a Physics-Based Dynamic Model”, In Submitted to *IEEE Transactions on Neural Networks and Learning Systems*, 2026. (Under Review)
2. Taehyeon Kim[†], **Gyeongmin Kim**[†], Eunsun Smith, and Byung-Cheol Min, “HERON: Human-robot collaboration with Efficient and Resilient OptimizatioN for Long-horizon planning”, In Submitted to *The Fourteenth International Conference on Learning Representations*, 2025. (Under Review)
3. **Gyeongmin Kim**[†], Taehyeon Kim[†], Shyam Sundar Kannan, Vishnunandan L. N. Venkatesh, Donghan Kim, and Byung-Cheol Min, “DynaCon: Dynamic Robot Planner with Contextual Awareness via LLMs”, *arXiv preprint arXiv:2309.16031*, 2023.

Online Repositories

1. Rotary Pendulum with PPO and Domain Randomization (*2024*)
 - *Site* : https://github.com/gmkim97/rotary_pendulum_ppo.git
 - *Description* : This repository is to control rotary pendulum (Furuta pendulum) using PPO from Stable-baselines3 and Domain Randomization which randomizes the physical properties of the pendulum.
2. DynaCon (*2023*)
 - *Site* : <https://github.com/gmkim97/DynaCon.git>
 - *Description* : The DynaCon is for providing mobile robots with contextual awareness and dynamic adaptability during navigation without pre-existing maps using ChatGPT from OpenAI and ROS.
3. ArUco marker detection (*2022*)
 - *Site* : https://github.com/gmkim97/ArUco_marker_detection.git
 - *Description* : This package is to detect one or more ArUco markers using Intel Realsense camera and broadcast each recognized marker into TFs.
4. Object Tracker (*2022*)
 - *Site* : https://github.com/gmkim97/object_tracker.git
 - *Description* : This package enables to recognize objects, publish TF topic, and display distances for each recognized object using Intel Realsense depth camera.

CONFERENCES

1. Teh-Hao Teng[†], **Gyeongmin Kim**, Hyungtai Kim, and Mun-Taek Choi, “Deep Temporal Clustering for Long-Term Gait Recovery Patterns of Post-Stroke Patients using Joint Kinematic Data”, *2025 11th International Conference on Computing and Artificial Intelligence (ICCAI 2025)*, Mar. 2025.
2. **Gyeongmin Kim**[†], Hyungtai Kim, and Mun-Taek Choi, “Gait Pattern Clustering in Post-Stroke Patients via Deep Learning Using Time-Series Joint-Level Angular Trajectory Data”, *2024 6th International Conference on BioMedical Technology (ICBMT 2024)*, Feb. 2024. **[Best Oral Presentation Award]**

TEACHING
EXPERIENCE

Teaching Assistant *Aug.2023 - Aug.2025*
Sungkyunkwan University, Suwon, South Korea

- Fundamental Mathematics in Engineering1 (ERC2010-45), Spring Semester, 2025.
- Fundamental Mathematics in Engineering2 (ERC2011-43), Fall Semester, 2024.
- Fundamental Mathematics in Engineering1 (ERC2010-44), Spring Semester, 2024.
- Fundamental Mathematics in Engineering2 (ERC2011-44), Fall Semester, 2023.

ACTIVITIES

Capstone Design Contest *Aug.2022 - Dec.2022*
Sungkyunkwan University, Suwon, South Korea

- Design of autonomous vision-based navigation using monocular camera, Jetson Nano, and toy car
- Participation in hardware design and partially in post-processing of visual data

AI-ICT Creative Idea Contest *Mar.2022 - Dec.2022*
Sungkyunkwan University, Suwon, South Korea

- Design and production of mobile robot for last-mile delivery which can detect nearby pedestrians
- Participation in object recognition, tracking, partially in hardware design and assembly
- In conjunction with Engineering Research Project courses

HONORS AND
AWARDS

Best Oral Presentation Award *Feb.2024*
2024 6th International Conference on BioMedical Technology (ICBMT 2024)
Helper lab, Sungkyunkwan University, Suwon, South Korea

Graduate Excellence Scholarship (Full) *Sep.2023*
Sungkyunkwan University, Suwon, South Korea

Summa Cum Laude *Aug.2023*
Sungkyunkwan University, Suwon, South Korea

1st Place Award of Capstone Design Contest *Dec.2022*
Sungkyunkwan University, Suwon, South Korea

3rd Place Award of AI-ICT Creative Idea Contest *Dec.2022*
Sungkyunkwan University, Suwon, South Korea

Academic Excellence Scholarship*Mar.2018 - Aug.2023*

Awarded to the undergraduate student for outstanding GPA
Sungkyunkwan University, Suwon, South Korea

- Spring Semester, 2023 (Partial scholarship)
- Fall Semester, 2022 (Partial scholarship)
- Fall Semester, 2021 (Partial scholarship)
- Spring Semester, 2018 (Full scholarship)

SKILLS

Coding : Python, MATLAB, C/C++

Libraries : Pytorch, Tensorflow, ROS1/2, Isaac Sim/Lab

Modelings : Autodesk Inventor, ANSYS Fluent

Operating Systems : Linux, Windows, MacOS

Languages : Korean, English, Japanese