

# HyoungHo Park

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## Education

<b>UNIST</b> , Department of Mechanical Engineering Advisor: Hyondong oh GPA: 4.2/4.3	Ulsan, South Korea Mar 2024 - Present
<b>Hanyang University ERICA</b> , Department of Robot Engineering B.S. in Robot Engineering GPA: 3.9/4.5 Major GPA: 4.06 / 4.5	Ansan, South Korea Feb 2024

## Skills and Techniques

<b>Software</b>	ROS1, 2, Gazebo, Docker, RL(PPO, SAC, DDPG), VLM(CLIP, Grounding DINO) System Architecture
<b>Hardware</b>	Mobile robots, UAVs, Arduino, SolidWorks
<b>Programming Languages</b>	Python, C++, C, C#, Matlab

## Research Experience

<b>Field AI and Robotics Laboratory, KAIST - Researcher</b> Project: Active perception for source term estimation in unknown environments	Aug 2025 - Present
<b>Autonomous Systems Laboratory, UNIST – Research Assistant</b> Project: Collision avoidance and Motion Planning for UAVs using RL	Jun 2023 - Aug 2023

## Projects

<b>Undergraduate Researcher, CAILAB(Hanyang Univ)</b> Project: Mobile service robot for seniors – MetatwinBot (CES 2023 Honoree)	May 2022 – Dec 2024
- Human following via LiDAR-camera fusion (YOLOv5) - Unity simulation and metaverse for remote companionship - ROS1 based navigation stack and E2E system architecture design	
<b>Autonomous Robotics Startup Team “CAPTAIN” – Team Leader</b> Project: Industrial cleaning robot - hairD	Aug 2023 – Dec 2024
- Mobile robot by end to end system using ROS1, ROS2 - point cloud clustering and object detection using 2D LiDAR - Development of cleaning system using a hierarchical architecture	
<b>Project: Mobile robot for indoor delivery - GiftyBot</b> - Map domain adaptation and correction with cycleGAN/Pix2Pix to improve navigation robustness - AMCL localization and TEB-based navigation in indoor environment - BLDC motor PID control on embed controller, tuned for accurate tracking	Jun 2023 - Aug 2023

## Publications

<b>H. Park</b> , S. Kim, H. Jang, J. Lee, J. Kim. “ <b>Semantic-GSL: Semantically Guided Gas Source Localization with Vision-Language Models</b> ”, <i>IEEE Robotics and Automation Letters</i> .	Presenting
<b>H. Park</b> , H. Jang, J. Kim, S. Kim, H. Oh. “ <b>EV-Infotaxis: Extended Vision-Language Model-Based Infotaxis for Efficient Gas Source Term Estimation and Search</b> ”, <i>Journal of Institute of Control, Robotics and Systems</i> , 31(6):643–653.	Mar 2025

**H. Park**, H. Jang, J. Seo, H. Oh. “**B-MCTS for Information-Theoretic Source Search in Urban Environments**”, *Proceedings of the 12th International Conference on Robot Intelligence Technology and Applications (RiTA 2024)*.

Dec 2024

## Awards and Honors

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2nd Place – IEEE ICASSP 2025 Grand Challenge, Hyderabad, India	Jan 2025
Robotics Honoree - CES (CES 2023), Las Vegas, USA	Jan 2023
<b>Third Prize</b> - Army Drone Bot Challenge (Autonomous Division), Army Headquarters, Korea	Nov 2021