Hogyun **Kim**

SLAM Engineer · Software Engineer

100, Inha-ro, Michuhol-gu, Incheon, Rep. of KOREA

(+82) 10-9364-2307 | hg.kim@inha.edu | hogyun2 | posquit0

Education

Inha University — *Incheon, S.Korea*

M.S. - Ph.D. Integrated in Electrical and Computer Engineering — *Mar. 2023 -*

- Advisor: Younggun Cho

Inha University — *Incheon, S.Korea*

B.S. in Naval Architecture and Ocean Engineering — *Mar. 2017 - Feb. 2023*

- Minor: Information and Communication Engineering
- Got an Inha Naval Architecture and Ocean Engineering Alumni Association Scholarship which is given to promising students in NOE Dept.

Research Interest

SLAM

Field Robotics

- Place Recognition, Ranging Sensors, Multi-Robot, Graph Sparsification, Underwater, Maritime

Publications

International

ReFeree: Radar-based Efficient, Lightweight, and Robust global descriptor using a Feature and Free space for Place Recognition and Localization

IEEE Robotics and Automation Letters (Under-Review) — *2024*

- **Hogyun Kim*** Byunghee Choi*, Euncheol Choi, and Younggun Cho
- (*) Equally contributed.

Uni-Mapper: Unified Mapping Framework for Multi-modal LiDARs in Complex and Dynamic Environments

IEEE Transactions on Intelligent Vehicles (Under-Review) — *2024*

- Gilhwan Kang, **Hogyun Kim**, Byunghee Choi, Seokhwan Jeong, Young-Sik Shin and Younggun Cho

Narrowing your FOV with SOLiD: Spatially Organized and Lightweight Global Descriptor for FOV-constrained LiDAR Place Recognition

IEEE Robotics and Automation Letters (Under-Review) — *2024*

- **Hogyun Kim**, Jiwon Choi, Taehu Sim, Giseop Kim, and Younggun Cho

DiTer: Diverse Terrain and Multi-Modal Dataset for Field Robot Navigation in Outdoor Environments

IEEE Sensors Letters — *Jan. 2024*

- Seokhwan Jeong (*), **Hogyun Kim** (*), Younggun Cho
- (*) Equally contributed.

Robust Imaging Sonar-based Place Recognition and Localization in Underwater Environments — *London, England*

IEEE International Conference on Robotics and Automation (ICRA) — *May. 2023*

- **Hogyun Kim**, Gilhwan Kang, Seokhwan Jeong, Seungjun Ma, Younggun Cho

Domestic

Study on Efficient Multi-floor Navigation Using a Visual Marker and Floor Plan Map

Journal of Institute of Control, Robotics and Systems — *Jan. 2024*

- Jiwon Choi, Taehu Sim, Gihyeon Lee, Jaeyong Lee, Gilhwan Kang, **Hogyun Kim**, Younggun Cho

Preprint

ReFeree: Radar-based efficient global descriptor using a Feature and Free space for Place Recognition

ARXIV, PREPRINT *May. 2024*

- Byunghee Choi (*), **Hogyun Kim** (*), Younggun Cho
- (*) Equally contributed.

Honors & Awards

INTERNATIONAL

2024 **3rd prize**, Best Research Award *Yokohama, Japan*

DOMESTIC

2021 **1st Prize**, Vertically Integrated Project (VIP) in Inha University *Incheon, S.Korea*
2021 **2nd prize in Qualifying Round**, Autonomous Car Competition for College Student *Hwaseong, S.Korea*
2021 **Control prize in Desing/Making**, Korea Autonomous Boat Competition (KABOAT) *Changwon, S.Korea*
2021 **6th prize**, Korea Autonomous Boat Competition (KABOAT) *Changwon, S.Korea*
2020 **1st Prize**, Vertically Integrated Project (VIP) in Inha University *Incheon, S.Korea*
2020 **1st Prize in Autopilot**, Korea Autonomous Boat Competition (KABOAT) *Changwon, S.Korea*
2020 **4th Prize**, Korea Autonomous Boat Competition (KABOAT) *Changwon, S.Korea*

Presentation

ReFeree: Radar-based efficient global descriptor using a Feature and Free space for Place Recognition *Yokohama, Japan*

IEEE INTERNATIONAL CONFERENCE ON ROBOTICS AND AUTOMATION (ICRA) WORKSHOP ON RADAR IN ROBOTICS *May. 2024*

- Byunghee Choi*, **Hogyun Kim***, and Younggun Cho
- (*) Equally contributed.

Robust Sonar-based Place Recognition in Underwater Environments *Kyoto, S.Korea*

IEEE/RSJ INTERNATIONAL CONFERENCE ON INTELLIGENT ROBOTS AND SYSTEMS (IROS) LATE-BREAKING *Nov. 2022*

- **Hogyun Kim** and Younggun Cho

Projects

Stereo camera based Real-Time Object Localization for Autonomus Surface Vechicle

SAMSUNG HEAVY INDUSTRY *Jun. 2023 - Dec. 2023*

Awesome LiDAR Place Recognition [GitHub] *Stars: 67*

PERSOANL

Skills

Python, C++, Matlab, ROS