SUNGWON HWANG

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Education

Korea Advanced Institute of Science and Technology　　　　　　　　　Korea
M.S in Robotics Program (Advisor: Prof. Hyun Myung)　　　　　　　*Feb. 2020 – Present*

Korea Advanced Institute of Science and Technology　　　　　　　　　Korea
B.S in Mechanical Engineering　　　　　　　　　　　　　　　*Aug. 2014 – Feb. 2020*

Research Interest

- Deep Learning & Computer Vision
- Pointcloud & 3D Vision
- Visual Place Recognition

Research Project

Visual Place Recognition　　　　　　　　　　　　　　　　　Researcher
Institute of Information & Technology Planning & Evaluation (IITP)　　　*Apr. 2021 –*
- GAN-based place recognition algorithm robust to environmental changes.

Visual Landmark Recognition　　　　　　　　　　　　　　　Researcher
National Intelligence Service (NIS)　　　　　　　　　　　*Feb. 2020 – Present*
- Attention module to learn landmarks using CNN.

AI604 Project (2020 Fall)
Equivariance-bridged SO(2) Invariant Representation Learning　　*Sep. 2020 – Dec. 2020*
using Graph Convolutional Network

- Ranked 1st in project score
- Submitted to International Conference on Machine Learning (ICML) & Under review.

Publications

Conference

1. Hyungtae Lim*, **Sungwon Hwang***, Sungjae Shin, and Hyun Myung, "Normal Distributions Transform is Enough: Real-time 3D Scan Matching for Pose correction of Mobile Robot Under Large Odometry Uncertainties," in Proc. of Int'l Conf. on Control, Automation and Systems (**ICCAS**), Oct. 13-16, 2020. **(*: Equal Contribution)**

Journal

1. **[To be published]** Hyungtae Lim, **Sungwon Hwang**, and Hyun Myung, "ERASOR: Egocentric Ratio of Psuedo Occupancy-based Dynamic Object Removal for Static 3D Point Cloud Map Building," in IEEE Robotics and Automation Letters (**RA-L,** *ICRA 2021 Option*).

Awards and Honors

Student Best Paper Award　　　　　　　　　　　　　　　　Oct. 2020
Int'l Conf. on Control, Automation and Systems (ICCAS)

Academic Activities

Journal Reviewer

- IEEE Robotics and Automation Letters (RA-L), ICRA 2021 option