



SUNGWON HWANG

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Education

Korea Advanced Institute of Science and Technology

M.S in Robotics Program (Advisor: Prof. Hyun Myung)

Korea
Feb. 2020 – Present

Korea Advanced Institute of Science and Technology

B.S in Mechanical Engineering

Korea
Aug. 2014 – Feb. 2020

Research Interest

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

Research Project

Visual Place Recognition

Institute of Information & Technology Planning & Evaluation (IITP)

Researcher
Apr. 2021 –

- GAN-based place recognition algorithm robust to environmental changes.

AI604 Project (2020 Fall)

*Equivariance-bridged $SO(2)$ Invariant Representation Learning
using Graph Convolutional Network*

Sep. 2020 – Dec. 2020

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

Visual Landmark Recognition

National Intelligence Service (NIS)

Researcher
Feb. 2020 – Present

- Attention module to learn landmarks using CNN.

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

Int’l Conf. on Control, Automation and Systems (ICCAS)

Oct. 2020

Academic Activities

Journal Reviewer

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