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

Publications

Conference

1. **S. Hwang**, H. Lim, H. Myung
   "Equivariance-bridged SO(2)-Invariant Representation Learning using Graph Convolutional Network"
   BMVC 2021 (Acceptance rate: 437/1206 $\approx$ 36%)

2. H. Lim*, **S. Hwang***, S. Shin, H. Myung (*: Equal Contribution)
   "Normal Distributions Transform is Enough: Real-time 3D Scan Matching for Pose correction of Mobile Robot Under Large Odometry Uncertainties"
   ICCAS 2020

Journal

1. H. Lim, **S. Hwang**, H. 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-Letters 2020**).

Research Project

Visual Place Recognition — Researcher
Institute of Information & Technology Planning & Evaluation (IITP) — *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 — Researcher
National Intelligence Service (NIS) — *Feb. 2020 – Present*

- Attention module to learn landmarks using CNN.

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