



# SUNGWON HWANG

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## Education

<b>Korea Advanced Institute of Science and Technology</b> <i>M.S in Robotics Program (Advisor: Prof. Hyun Myung)</i>	Korea Feb. 2020 – Present
<b>Korea Advanced Institute of Science and Technology</b> <i>B.S in Mechanical Engineering</i>	Korea Aug. 2014 – Feb. 2020

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## Research Interest

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

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## Research Project

<b>Visual Place Recognition</b> <i>Institute of Information &amp; Technology Planning &amp; Evaluation (IITP)</i> <ul style="list-style-type: none"><li>• GAN-based place recognition algorithm robust to environmental changes.</li></ul>	Researcher Apr. 2021 –
<b>AI604 Project (2020 Fall)</b> <i>Equivariance-bridged <math>SO(2)</math> Invariant Representation Learning using Graph Convolutional Network</i> <ul style="list-style-type: none"><li>• Ranked 1st in project score</li><li>• Submitted to International Conference on Machine Learning (ICML) &amp; Under review.</li></ul>	Sep. 2020 – Dec. 2020
<b>Visual Landmark Recognition</b> <i>National Intelligence Service (NIS)</i> <ul style="list-style-type: none"><li>• Attention module to learn landmarks using CNN.</li></ul>	Researcher Feb. 2020 – Present

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## 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**).

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## Awards and Honors

<b>Student Best Paper Award</b> <i>Int’l Conf. on Control, Automation and Systems (ICCAS)</i>	Oct. 2020
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## Academic Activities

### Journal Reviewer

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