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GISEOP KIM

EDUCATION

Korea Advanced Institute of Science and Technology (KAIST) Feb. 2019
M.S. in Civil and Environmental Engineering (CEE)
Dissertation: "Isovist-induced Robust LiDAR Localization"
Advised by Dr. Ayoung Kim

Korea Advanced Institute of Science and Technology (KAIST) Feb. 2017
B.S. in Civil and Environmental Engineering (CEE)

POSITIONS

Graduate Student Research Assistant Mar. 2017 – present
Intelligent Robotic Autonomy and Perception (IRAP) Lab
Civil and Environmental Engineering Department, Korea Advanced Institute of Science Technology (KAIST) Daejeon, South Korea

- Constructed a long-term LiDAR+radar dataset over multiple urban environments for a year.
- Developed range sensor-based place recognition and long-term localization methods.
- Developed a robust LiDAR SLAM system for complex urban sites using ROS and C++.

FIELD OF INTEREST

Simultaneous localization and mapping (SLAM), 3D reconstruction, Navigation, Autonomous vehicles, Mobile robotics, Deep learning for 3D data, Robotic perception, Spatial AI

PUBLICATIONS

International Journal

1. Giseop Kim, Byungjae Park, and Ayoung Kim. 1-Day Learning, 1-Year Localization: Long-term LiDAR Localization using Scan Context Image. *IEEE Robotics and Automation Letters (RA-L) (with ICRA)*, 4(2):1948–1955, 2019
2. Giseop Kim, Ayoung Kim, and Youngchul Kim. A new 3D space syntax metric based on 3D isovist capture in urban space using remote sensing technology. *Computers, Environment and Urban Systems*, 74:74–87, 2019

International Conference Proceedings

1. Giseop Kim and Ayoung Kim. Remove, then Revert: Static Point cloud Map Construction using Multiresolution Range Images. In *Proceedings of the IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, Las Vegas, Oct. 2020. Accepted. To appear
2. Giseop Kim, Yeong Sang Park, Younghun Cho, Jinyong Jeong, and Ayoung Kim. MulRan: Multimodal Range Dataset for Urban Place Recognition. In *Proceedings of the IEEE International Conference on Robotics and Automation (ICRA)*, Paris, May 2020
3. Younggun Cho, Giseop Kim, and Ayoung Kim. Unsupervised Geometry-Aware Deep LiDAR Odometry. In *Proceedings of the IEEE International Conference on Robotics and Automation (ICRA)*, Paris, May 2020
4. Giseop Kim and Ayoung Kim. Scan Context: Egocentric Spatial Descriptor for Place Recognition within 3D Point Cloud Map. In *Proceedings of the IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, pages 4802–4809, Madrid, Oct. 2018
5. Giseop Kim, Byungjae Park, and Ayoung Kim. Learning scan context toward long-term lidar localization. In *ICRA Workshop on Long-term Autonomy and Deployment of Intelligent Robots in the Real-world*, Brisbane, May. 2018. (**Best paper award**)

Dissertations

1. Giseop Kim. *Isovist-induced Robust LiDAR Localization*. PhD thesis, Korea Advanced Institute of Science and Technology (KAIST), Daejeon, South Korea, Mar. 2019

TECHNICAL SKILLS

Languages: C/C++, Python, Matlab
Tools and Libraries: ROS, GTSAM, Ceres, etc.

Revised October 6, 2020