이 준 호 Alex Junho Lee

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Google Scholar

Education

Korea Advanced Institute of Science and Technology (KAIST)
Ph.D. candidate, Civil and Environmental Engineering, 2022
- Robotics Program, Smart City Program
Bachelor of Engineering, Mechanical Engineering, Feb 2017 GPA: 3.58/4.3
- Double Major in Business and Technology Management (BTM)

Publications

Alex Junho Lee, Younggun Cho, Sungho Yoon, Joowan Kim, Ayoung Kim, "ViViD: Vision for Visibility Dataset". In Proceedings of the *IEEE International Conference on Robotics and Automation (ICRA) Workshop: Dataset Generation and Benchmarking of SLAM Algorithms for Robotics and VR/AR, **Best Paper***, 2019.

Alex Junho Lee, Ayoung Kim, "EventVLAD: Visual Place Recognition with Reconstructed Edges from Event Cameras". In Proceedings of the *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, 2021.

Alex Junho Lee, Hyun Myung, "Natural Language Representation as Features for Place Recognition". In Proceedings of the *IEEE International Conference on Ubiquitous Robots (UR)*, 2022.

Alex Junho Lee, Younggun Cho, Young-sik Shin, Ayoung Kim, Hyun Myung, "ViViD++ : Vision For Visibility Dataset". *IEEE Robotics and Automation Letter (RA-L)*, 7(3):6282-6289, 2022.

Alex Junho Lee, Younggun Cho, Hyun Myung, "Low-cost Thermal Mapping for Concrete Heat Monitoring". In Proceedings of the *IEEE International Conference on Robotics and Automation (ICRA) Workshop: Future of Construction: Build Faster, Better, Safer - Together with Robots*, 2022.

Alex Junho Lee, Seungwon Song, Hyun Myung, "Disparity Image-based Place Recognition for Monocular Camera in 3D LiDAR Maps". Under review at *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, 2022.

Achievements

Vision for Visibility Dataset (ViViD) Best Paper, IEEE Int. Conf. Robotics and Automation (ICRA) Workshop: Dataset Generation and Benchmarking of SLAM Algorithms for Robotics and VR/AR, 2019.

Co-Chair of Localization II Session, IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), 2021.

2nd Cash Award, HILTI SLAM CHALLENGE, 2022.

Field of Interests

Visual Localization, Multimodal sensor fusion, SLAM, Place Recognition, Spatial AI

Experiences

Robust visual place recognition for location authentication (Project, 2022)
- Deep learning-based VPR, participated as project leader.

Last-mile delivery robot in urban crowded areas (Project, 2021-2022)
- LiDAR-based SLAM for UGV, participated as SLAM engineer.

Visual SLAM on racing drones (Final Stage, 2021)
- Korean DARPA Challenge, participated as SLAM part engineer.
- Stereo VIO and LiDAR map building on embedded device (Jetson TX2)

Outdoor SLAM in unstructured environment (Project, 2019-2021)
- Autonomous map building in construction sites, participated as project leader.
- Active SLAM, Long-term mapping, Sensor Integration

Indoor SLAM with dynamic obstacles (Project, 2019)
- Indoor service robot for general uses, participated as SLAM part engineer
- SLAM in dynamic environment and obstacles, Obstacle avoidance.

Encoder frame device and vehicle odometry measurement system (Patent, 2019)
- High-resolution encoder frame for vehicle odometry, suggested and built hardware.

Indoor SLAM under complex disaster (Project, 2018)
- SLAM under environmental disturbances (Dust, Heat), participated as team member.

4th industrial revolution and autonomous driving (Project, 2017)
- Investigation project for autonomous driving, participated as team member.

Intern in Safety Design Dept. (Doosan Heavy Industries, 2016)

International Student Exchange Program (National University of Singapore, 2016

Language

Korean (Native), English (Fluent)

Python, C++, MATLAB