1, Gwanak-ro,
Gwanak-gu,
Seoul, Republic of Korea

Personal Homepage
dan0130@snu.ac.kr
Google Scholar

Sangwoo Jung

EDUCATION

Seoul National University (SNU) *Sep. 2023 - Now*
Ph.D. Candidate in Mechanical Engineering (ME)
Advised by Dr. Ayoung Kim

Seoul National University (SNU) *Aug. 2023*
M.S. in Mechanical Engineering (ME)
Dissertation: "Radar Odometry for Quadrupedal Robot using Gravity"
Advised by Dr. Ayoung Kim

Korea Advanced Institute of Science Technology (KAIST) *Feb. 2021*
B.S. in Mechanical Engineering (ME) and Computer Science (CS)
Advised by Dr. Seong Su Kim

EXPERIENCE

Undergraduate Researcher *Jul. 2020 - Aug. 2021*
Intelligent Robotic Autonomy and Perception (IRAP) Lab
Dept. of Civil and Environmental Engineering (CEE)
Korea Advanced Institute of Science Technology (KAIST)

Exchange Student *Aug. 2019 - Jan. 2020*
KTH Royal Institute of Technology

Undergraduate Researcher *Jun. 2018 - Aug. 2018*
Mobile Robotics & Intelligence Laboratory (MORIN) Lab
Dept. of Mechanical Engineering (ME)
Korea Advanced Institute of Science Technology (KAIST)

FIELD OF INTEREST

Radar, LiDAR simultaneous localization and mapping (SLAM),
Legged Robot, Sensor Fusion, Deep Learning

PUBLICATIONS

International Journal

- Hyesu Jang, Wooseong Yang, Hanguen Kim, Dongje Lee, Yongjin Kim, Jinbum Park, Minsoo Jeon, Jaeseong Koh, Yejin Kang, Minwoo Jung, **Sangwoo Jung**, Chng Zhen Hao, Wong Yu Hin, Chew Yihang, and Ayoung Kim, "MOANA: Multi-Radar Dataset for Maritime Odometry and Autonomous Navigation Application", in International Journal of Robotics Research (IJRR), 2024.

- **Sangwoo Jung**, Hyesu Jang, Minwoo Jung, Ayoung Kim, and Myung-Hwan Jeon, "Imaging radar and LiDAR Image Translation for 3-DOF Extrinsic Calibration", in Intelligent Service Robotics (ISR), 2024.
- Minwoo Jung, **Sangwoo Jung** and Ayoung Kim, "Asynchronous multiple lidar-inertial odometry using point-wise inter-lidar uncertainty propagation", in IEEE Robotics and Automation Letters (RA-L), 2023.
- Myung-Hwan Jeon, Jeongyun Kim, **Sangwoo Jung**, Wooseong Yang, Minwoo Jung, Jaeho Shin, and Ayoung Kim, "TRansPose: Large-Scale Multispectral Dataset for Transparent Object", in International Journal of Robotics Research (IJRR), 2023.

International Conference

- Minwoo Jung, **Sangwoo Jung**, Hyeonjae Gil, and Ayoung Kim, "HeLiOS: Heterogeneous LiDAR Place Recognition via Overlap-based Learning and Local Spherical Transformer", in IEEE International Conference on Robotics and Automation (ICRA), 2025
- Hanjun Kim, Minwoo Jung, Chiyun Noh, **Sangwoo Jung**, Hyunho Song, Wooseong Yang, Hyesu Jang, and Ayoung Kim, "HeRCULES: Heterogeneous Radar Dataset in Complex Urban Environment for Multi-session Radar SLAM", in IEEE International Conference on Robotics and Automation (ICRA), 2025
- Chiyun Noh, Wooseong Yang, Minwoo Jung, **Sangwoo Jung**, and Ayoung Kim, "GaRLIO: Gravity enhanced Radar-LiDAR-Inertial Odometry", in IEEE International Conference on Robotics and Automation (ICRA), 2025
- Sanghyun Hahn, Seunghun Oh, Minwoo Jung, Ayoung Kim, and **Sangwoo Jung**, "Quantitative 3D Map Accuracy Evaluation Hardware and Algorithm for LiDAR(-Inertial) SLAM", in International Conference on Control, Automation, and Systems (ICCAS), 2024
- **Sangwoo Jung**, Wooseong Yang, and Ayoung Kim, "Co-RaL: Complementary Radar-Leg Odometry with 4-DoF Optimization and Rolling Contact", in IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), 2024
- Seungsang Yun, Minwoo Jung, Jeongyun Kim, **Sangwoo Jung**, Younghun Cho, Myung-Hwan Jeon, Giseop Kim, and Ayoung Kim, "STheReO: Stereo Thermal Dataset for Research in Odometry and Mapping", in IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), 2022

Domestic Journal

- Chiyun Noh, **Sangwoo Jung**, Yujin Kim, Kyongsu Yi and Ayoung Kim, "Moving Object Segmentation-based Approach for Improving Car Heading Angle Estimation", in Journal of Korea Robotics Society (KROS), 2024
- **Sangwoo Jung** and Ayoung Kim, "Out Door Map Feature Point Generating Mechanism Design and Algorithm Robust to Lidar Sparsity", in Journal of Construction Automation and Robotics (JCAR), 2022
- Minwoo Jung, **Sangwoo Jung** and Ayoung Kim, "Intensity and ambient enhanced lidar-inertial slam for unstructured construction environment", in Journal of Korea Robotics Society (KROS), 2020.
- **Sangwoo Jung**, Minwoo Jung and Ayoung Kim, "Map Error Measuring Mechanism Design and Algorithm Robust to LiDAR Sparsity", in Journal of Korea Robotics Society (KROS), 2020.

Dissertations

- **Sangwoo Jung**, "Radar Odometry for Quadrupedal Robot using Gravity", Master's thesis, Seoul National University (SNU), 2023.

Other Publications

- **Sangwoo Jung** and Ayoung Kim, "Toward 6D Velocity Estimation for Legged Robot using Rolling Motion", in Work-in-Progres paper on IEEE International Conference on Ubiquitous Robots (UR), 2024.
- **Sangwoo Jung**, Hyesu Jang, Myung-Hwan Jeon and Ayoung Kim, "CycleGAN-based Imaging Radar to LiDAR Image-Translation for 2D Extrinsic Calibration", in workshop on IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), 2023.
- **Sangwoo Jung** and Ayoung Kim, "6D Instantaneous Velocity for Legged Robot using Rolling Motion", in Late-Breaking Results Poster on IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), 2022.

PRESENTATIONS

· ISR Journal Session Invited Oral Presentation, UR 2025, Jul. 2025
· Oral Presentation, IROS 2024, Oct. 2024
· Work-in-Progress Paper Poster Presentation, UR 2024, Jul. 2024
· Workshop Poster Presentation, IROS 2023, Oct. 2023
· Poster Presentation, IROS 2022, Oct. 2022.

SERVICES

Reviewer

· IEEE Robotics and Automation Letters (RA-L)
· IEEE International Conference on Robotics and Automation (ICRA)
· IEEE International Conference on Intelligent Robots and Systems (IROS)
· IEEE International Conference on Ubiquitous Robots (UR)
· IEEE Sensors Journal
· Intelligent Service Robotics (ISR)
· Signal, Image and Video Processing

LANGUAGES & SKILLS

- Korean, English
- Advanced: C/C++, Python, MATLAB, ROS, PyTorch, Microsoft Office, Ubuntu, Windows, LaTeX
- Novice: Solidworks, Java, Scala, F#, Rust, Assembly

Revised September 5, 2025