



Gyubeom Edward Im

RESEARCH INTEREST

SLAM, Visual(-inertial) Odometry, LiDAR(-inertial) Odometry

WORK EXPERIENCE

- 2020-Present **Samsung Electronics Co., Ltd.**, *SLAM Research Engineer*, System LSI Business
2019-2020 **Atlas Rotoics Co., Ltd.**, *Visual SLAM Engineer*

EDUCATION

- 2018-2020 **Seoul National University**, *M.S.*, Department of Transdisciplinary Studies, The Graduate School of Convergence Science and Technology
Lab: Dynamic Robotic System Lab (DYROS Lab, <https://dyros.snu.ac.kr>)
Advisor: Prof. Jaeheung Park (park73@snu.ac.kr)
Thesis: Parking Line Based SLAM Approach for Localization and Parking Space Detection
- 2010-2018 **Kookmin University**, *B.S.*, Automotive Engineering
Activity: Team Member of Student Formula Racing Team and Participated in FSAE 2014 Competition.

ACTIVITY

- 2024-Present **KETI**, *SLAM Instructor*, Korea Electronics Technology Institute
2023-Present **Youtube**, *SLAM-related Contents*, Channel Name: ALIDA
2020-Present **ALIDA Tech Blog**, *SLAM-related Contents*, alida.tistory.com
2018 **Robotics Boot Camp**, *ROS Instructor*, Seoul National University, DYROS Laboratory
2017 **CATIA and CAD**, *Instructor*, Kookmin University
2016-2020 **Tech Blog**, *Engineering-related Contents*, blog.naver.com/gyurse

PUBLICATIONS

- 2024 **Gyubeom Im**. "Notes on Various Errors and Jacobian Derivations for SLAM" arXiv preprint [arXiv:2406.06422](https://arxiv.org/abs/2406.06422) (2024).
- 2024 **Gyubeom Im**. "Notes on Kalman Filter (KF, EKF, ESKF, IEKF, IESKF)" arXiv preprint [arXiv:2406.06427](https://arxiv.org/abs/2406.06427) (2024).
- 2023 **Gyubeom Im**, Keunjoo Park, Junseok Kim, Bongki Son, Seungchul Shin, Haechang Lee. "Live Demonstration: PINK: Polarity-based Anti-flicker for Event Cameras." Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition Workshops. 2023.
- 2019 **Gyubeom Im**, Minsung Kim, Jaeheung Park, "Parking Line Based SLAM Approach Using AVIM/LiDAR Sensor Fusion for Rapid and Accurate Loop Closing and Parking Space Detection", *Sensors*, 19 (21), pp. 4811, 2019, ISSN: 1424-8220.
- 2019 Kyujin Park, **Gyubeom Im**, Minsung Kim, Jaeheung Park, "Parking Space Detection based on Camera and LIDAR Sensor Fusion", *Journal of Korea Robotics Society*, 14 (3), pp. 170-178, 2019, ISBN: 1975-6291.

- 2018 **Gyubeom Im**, Minsung Kim, Joonwoo Ahn, Minsoo Kim, Jaeheung Park, “V-Rep Simulator for Autonomous Vehicle Research in Parking lot Environment”, The Korean Society of Automotive Engineers Annual Autumn Conference, Kangwon, Korea, 14.11.2018.
- 2018 Minsung Kim, **Gyubeom Im**, Joonwoo Ahn, Minsoo Kim, Jaeheung Park, “Autonomous parking algorithm using automatic selection of forward and backward switching points via model predictive control”, The Korean Society of Automotive Engineers Annual Autumn Conference, Kangwon, Korea, 14.11.2018.
- 2018 Joonwoo Ahn, Minsoo Kim, **Gyubeom Im**, Minsung Kim, Jaeheung Park, “Development of Autonomous Valet Parking System and Simulation Result”, The Korean Society of Automotive Engineers Annual Autumn Conference, Kangwon , Korea, 14.11.2018.

SKILLS

Expertise SLAM, Visual(-inertial) Odometry, LiDAR(-inertial) Odometry
 Programming C++, Python
 Libraries ROS, Eigen3, ceres, g2o, OpenCV, PCL

AWARDS

- 2023 Samsung Software Certification: Professional
- 2020 Best Paper Award of Master Thesis in Graduate School, Seoul National University
- 2017 Kookmin University Scholarship
- 2017 Kookmin University Scholarship
- 2016 Kookmin University Scholarship
- 2015 Kookmin University Scholarship
- 2014 2nd Place in Cost Section, FSAE 2014
- 2014 18th Place (1st Prize among the Asia Teams) in Total Performance, FSAE 2014