Jaewon **Lee**

Robotics · Multi-Robot · SLAM

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"Passion is the genesis of genius."

Summary

This is Jaewon Lee, who wants to be a Robotics researcher and engineer. I am interested in Robotics, SLAM, Multi-Robot System. I think Robotics can help the development of the world a lot. I want to study a lot and approach the world.

Research Interests

SLAM Multi-Robot, Registration, Scene-Graph

Novel View Synthesis 3D Scene Representation, Sensor-Fused Representation

Education

Yonsei University @CILAB

Seoul, S.Korea

Ph.D. in Electrical and Electronic Engineering (Advisor:Prof.Euntai Kim)

Mar. 2024 - Present

- Research on 3D Scene Representation
- **Teaching Assistant**: 2024-2 Research Experience for Undergraduate (REU)
- **Teaching Assistant**: 2025-1 Research Experience for Undergraduate (REU)

KwangWoon University

Seoul, S.Korea

B.S. in School of Robotics

Mar. 2020 - Feb. 2024

- **Total GPA** : 4.13/4.50, **Major GPA** : 4.29/4.50
- Club : BARAM Robotics (Robotics Academic Group) - [2022 Vice President], Mar.2020-Feb.2024

Work Experience

Yonsei University @CILAB

Seoul, S.Korea

Undergraduate LAB Intern (Advisor : Prof. Euntai Kim)

Jul. 2023 - Feb. 2024

- Participated in ICCV 2023 SLAM Challenge
- Research on 3D Scene Representation

ROBOMATION

Seoul, S.Korea

R&D Intern

Jun. 2022 - Aug. 2022

- Development of an automated system for soccer games using multi-robot systems

KwangWoon University @Robotics A.I. LAB.

Seoul, S.Korea

Undergraduate LAB Intern (Advisor : Prof. Junghyun Oh)

Jan. 2022 - Jun. 2022

- Study of Visual SLAM and visual odometry
- Study of Multi-Robot systems and implementation of Multi-Robot exploration

Projects

Cooperative mapping, environment recognition, and autonomous driving technology for multiple mobile robots operating in large indoor workspaces

KEIT

Participant

Mar. 2024 - Dec. 2026

- Development multi-robot navigation systems

Publication

International Conference

2025.05 **"Fast Global Localization on Neural Radiance Field"**, *ICRA 2025*
Mangyu Kong, Jaewon Lee, Seongwon Lee and Euntai Kim - **[Paper]**

2025.01 **"GeomGS: LiDAR-Guided Geometry-Aware Gaussian Splatting for Robot Localization"**, *Arxiv (Preprint)*
Jaewon Lee, Mangyu Kong, Minseong Park and Euntai Kim - **[Paper]**

Domestic Conference

2023.06 **"Autonomous Multi Robot Parking System"**, *ICROS 2023*
Jaewon Lee, Hyosuk Joo, Chung-gil Ahn, Hyedo Kim, Junghyun Oh - **[Paper]**

Honors & Awards

Awards

2023.12 **2023 Hanium ICT Mentoring Competition**, Silver Award — *Ministry of Science and ICT, IITP, FKii*

2023.10 **ICCV 2023 SLAM Challenge**, *ICCV 2023*
Fourth place in LiDAR-Inertial Track - Taeyoung Kim, Jaewon Lee, Beomsoo Kim, Euntai Kim

2023.06 **Undergraduate Paper Award**, Paper - Autonomous multi robot parking system — *ICROS 2023*

2022.10 **Dean's list**, for Academic Excellence — *Kwangwoon Univ.*

Honors

2022.10 **Full Tuition Scholarship**, for the first place in last semester — *Kwangwoon Univ.*

Skills

Programming C++/C, Python, MATLAB
DevOps ROS/ROS2, Docker, Git

Extracurricular Activity

Technical Blog - lee-jaewon.github.io — *Personal Tech Blog*
Writer — *Jul. 2021 - Present*
- Study and write posts on paper reviews, development projects, and personal interests.
- Learn through writing and sharing knowledge.
- Blog available at **[here]**.

Autonomous Multi-Robot Parking System — *Kwangwoon Univ.*
Capstone Design — *Jan. 2023 - Jun. 2023*
- Developed a multi-robot system with mobile robot technologies.
- Source code available at **[GitHub repository]**.

2022 Open Source Contribution Academy — *Ministry of Science and ICT, NIPA*
Mentee — *Jul. 2022 - Oct. 2022*
- Translated PyTorch Hub documentation into Korean with the PyTorch Korean User's Group.

Multi-Robot Collision Avoidance with Velocity Obstacle — *BARAM Robotics*
Personal Project — *Sep. 2022 - Nov. 2022*
- Implemented collision avoidance using the Velocity Obstacle method in a multi-robot system.
- Source code available at **[GitHub repository]**.

Autonomous Driving Simulation with Reinforcement Learning — *BARAM Robotics*
Personal Project — *Sep. 2021 - Nov. 2021*
- Developed an autonomous driving system using the DQN algorithm for highway scenarios.
- Built a simulator in Unity with laser sensors for rewards.
- Source code available at **[GitHub repository]**.

Frontier-Based Multi-Robot Exploration

BARAM Robotics

Personal Project

Mar. 2022 - Jun. 2022

- Implemented ROS-based multi-robot frontier exploration.
- Built a multi-robot SLAM system using open-source libraries.
- Source code available at **[GitHub repository]**.

House Interior Classifier and Automatic Recommendation

2022 Deep Learning Lecture

Deep-Learning Project

Mar. 2022 - Jun. 2022

- Built a house interior classifier using Inception-ResNet-V2 in Keras.
- Developed an automatic recommendation system integrated with shopping websites.
- Source code available at **[GitHub repository]**.