SIBAEK LEE

South Korea | Email | Website | LinkedIn | GitHub

About Me

I am a PhD student in Intelligent Robotics at Sungkyunkwan University advised by Prof. Hyeonwoo yu where I am a member of the Lab of Artificial Intelligence and Robotics (Lair).

As a researcher, I hope my research contributes positively to society and I believe that artificial intelligence is a step towards achieving that goal. My research focuses on using deep learning techniques to enhance robots' spatial perception. By improving their ability to perceive their environment accurately, we can enable robots to make better decisions, perform more complex tasks, and ultimately help people in various ways.

Education

MS/Ph.D **Sungkyunkwan University**, Intelligent Robotics — Mar. 2023 – Present
- Advisor: Prof. Hyeonwoo Yu

B.S. **UNIST**, Computer Science and Mechanical Engineering — Mar. 2016 – Feb. 2023

Experience

Naver Labs, Research Intern — Aug. 2024 – Feb. 2025
- Vision Group research 3D Vision & Deep Learning internship.
- Published work at RA-L 2025.
- Supervisor: Giseop Kim, Sunwook Choi

University of Illinois Urbana-Champaign, Global Program Participant — Jan. 2022 – Feb. 2022
- Global Program Participant in AI & Big Data at UIUC.

UNIST, Applied Cryptography Lab Research Intern — June 2021 – July 2022
- Research internship in Applied Cryptography Lab.
- Supervisor: Miran Kim

Publications

2025

LAMP: Implicit Language Map for Robot Navigation 2025
Sibaek Lee, Hyeonwoo Yu, Giseop Kim, Sunwook Choi
IEEE Robotics and Automation Letters (RA-L)

Efficient 3D Perception on Embedded Systems via Interpolation-Free Tri-Plane Lifting and Volume Fusion 2025
Sibaek Lee, Jiung Yeon, Hyeonwoo Yu
arXiv Preprint

Spatial Coordinate Transformation for 3D Neural Implicit Mapping 2025
Kyeongsu Kang, Seongbo Ha, ***Sibaek Lee***, Hyeonwoo Yu
IEEE Robotics and Automation Letters (RA-L)

Bayesian NeRF: Quantifying Uncertainty With Volume Density for Neural Implicit Fields 2025
Sibaek Lee, Kyeongsu Kang, Seongbo Ha, Hyeonwoo Yu
IEEE Robotics and Automation Letters (RA-L)

2024

Just flip: Flipped observation generation and optimization for neural radiance fields to cover unobserved view 2024

Sibaek Lee, Kyeongsu Kang, Hyeonwoo Yu

In Proc. IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)

2023

Necessity feature correspondence estimation for large-scale global place recognition and relocalization 2023

Kyeongsu Kang, **Minjae Lee**, Hyeonwoo Yu

arXiv Preprint

Projects

AI Star Fellowship Support Program 2025 – 2029

- Supported by IITP grant funded by the Korea government (MSIT)

AI Semiconductor Innovation Center 2025 – 2030

- Supported by IITP grant funded by the Korea government (MSIT)

Development of Robotic Technology for Grasping and Manipulating Challenging Thin Non-Rigid Objects in Unstructured Environments Multi-Modal 3D Perception & Task Planning Learned from Demonstrations and Manuals for Battery Pack Recycling 2024 – 2027

- Funded by the Ministry of Trade, Industry and Energy

Development and Demonstration of Unmanned Autonomous Operation Technology Based on Field-Use Visualization Sensors and 6-Axis Rotational Angle Sensors 2024 – 2028

- Funded by the Ministry of Trade, Industry and Energy

Spatial and Task Generalization Framework for Hardware Platform-Agnostic Embodied AI 2024 – 2027

- Funded by the National Research Foundation of Korea

Awards

Best Paper Award (LG AI Research prize) Aug. 2025

Korean Artificial Intelligence Association (CKAIA)

Languages

Korean (Native) | **English** (Professional)