

Taekbeom Lee

Ph.D. Student, Department of Aerospace Engineering, Seoul National University

Email — Website — LinkedIn — Google Scholar

Education

Seoul National University, Seoul, Korea Mar. 2022 – Present

Ph.D. Student, Department of Aerospace Engineering

Advisor: Prof. H. Jin Kim

Seoul National University, Seoul, Korea Mar. 2015 – Aug. 2021

B.S., Mechanical and Aerospace Engineering

Cum Laude Military Service: 2 years

Publications

- **HERE: Hierarchical Active Exploration for Radiance Field with Epistemic Uncertainty Minimization**
Taekbeom Lee*, Dabin Kim*, Youngseok Jang, H. Jin Kim
IEEE Robotics and Automation Letters (RA-L), 2026, *: Equal contribution.
- **Category-level Neural Field for Reconstruction of Partially Observed Objects in Indoor Environment**
Taekbeom Lee, Youngseok Jang, H. Jin Kim
IEEE Robotics and Automation Letters (RA-L), 2024
- **Object Remover Performance Evaluation Methods Using Classwise Object Removal Images**
Changsuk Oh, Dongseok Shim, Taekbeom Lee, H. Jin Kim
IEEE Sensors Letters, 2024
- **Object-based SLAM Utilizing Unambiguous Pose Parameters Considering General Symmetry Types**
Taekbeom Lee*, Youngseok Jang*, H. Jin Kim
IEEE International Conference on Robotics and Automation (ICRA), 2023, *: Equal contribution.

Projects

L3IN: Intelligent Robot Navigation with Efficient LLM Interaction, Long-Term Consistency, and Location-Specific Expertise Dec. 2024 – Nov. 2027

Team Lead (Distillation team)

Supported by Samsung Research Funding & Incubation Center for Future Technology of Samsung Electronics

Uncertainty Quantification and OOD Detection in Road Condition Estimator Oct. 2024 – Sep. 2025

Project Lead

Collaboration with Hyundai Motor Company

Research Experience

Active Neural Implicit Mapping with Uncertainty

Habitat Simulator-based implementation

Reliable Localization and View Synthesis

NeRF / Gaussian Splatting-based system

Physics-integrated Dynamic Scene Modeling

Gaussian Splatting + physics simulation (PhysDreamer)

Teaching

Undergraduate Research Opportunity Program Fall 2024

Research Assistant, Seoul National University

Advisor: Prof. H. Jin Kim

Integrated Aerospace Systems Design and Manufacturing 1 & 2 Spring 2024

Teaching Assistant, Seoul National University

Scholarships

Brain Korea 21 (BK21) Fellowship Mar. 2023 – Jun. 2023

KRW 2.5M/month

National Science & Technology Scholarship

Mar. 2017 – Dec. 2020

Full tuition coverage

Academic Service

- Reviewer, IEEE International Conference on Robotics and Automation (ICRA), 2025
- Reviewer, IEEE International Conference on Computer Vision (ICCV), 2025

Skills

Programming C/C++, Python, MATLAB

Simulators HabitatSim, AI2-THOR, CARLA, AirSim

Languages Korean (Native), English (Fluent)