

Eun Sun Lee

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Research Vision

Exploring visual-spatial structures for robots to perceive, adapt, and act — across time, uncertainty, and collaboration.

Education

PhD	Seoul National University , Electrical and Computer Engineering • Advised by Prof. Young Min Kim, 3D Vision Lab	March 2021 – Present
MS	University of California, Los Angeles , Electrical and Computer Engineering • Advised by Prof. Mani Srivastava, NESL	Sep 2016 – Dec 2018
BS	University of Virginia , Electrical and Computer Engineering	Aug 2010 – May 2015

Experience

3D Vision Lab, Seoul National University <i>Graduate Student Researcher</i>	Seoul, Korea Feb 2021 – Present
<ul style="list-style-type: none">• Research robust and compact map representations for vision-based navigation, focusing on spatial consistency, multi-session alignment, and dynamic scene understanding.• Explore domain adaptation techniques using self-supervised learning to enhance navigation robustness under noisy or shifted sensory conditions.	
LG Electronics H&A R&D Lab <i>Associate Researcher</i>	Seoul, Korea Jul 2019 – Feb 2021
<ul style="list-style-type: none">• Designed control systems for a robotic vacuum cleaner in a research-driven embedded robotics setting.	
Networked & Embedded Systems Lab, UCLA <i>Graduate Student Researcher (KAUST Project)</i>	Los Angeles, CA Sep 2016 – Dec 2018
<ul style="list-style-type: none">• Designed <i>AquaMote</i>, an energy-efficient inertial sensor tag for fine-grained animal localization and motion tracking.• Conducted field deployment at Oceanogràfic València and collaborated with the internationally coordinated KAUST Sensor Initiative on system development, data analysis, and validation in marine environments.	
Korea Institute of Science and Technology (KIST) <i>Intern, Imaging Media Research Center</i>	Seoul, Korea Aug 2015 – Jul 2016
<ul style="list-style-type: none">• Designed and built an AR-based robotic assistant system for elderly care applications.	

Publications

Multi-agent exploration with similarity score map and topological memory <i>Eun Sun Lee</i> and Young Min Kim	IEEE RA-L 2024
Calibrating panoramic depth estimation for practical localization and mapping Junho Kim, <i>Eun Sun Lee</i> and Young Min Kim	ICCV 2023
MoDA: Map style transfer for self-supervised Domain Adaptation of embodied agents <i>Eun Sun Lee</i> , Junho Kim and Young Min Kim	ECCV 2022
Self-supervised domain adaptation for visual navigation with global map consistency	WACV 2022

Eun Sun Lee, Junho Kim and Young Min Kim

Deep convolutional bidirectional LSTM based transportation mode recognition

HASCA 2018

Vikranth Jeyakumar, **Eun Sun Lee** et al.

Given the machine a hand: A Boolean time-based decision-tree template for rapidly finding animal behaviours in multi-sensor data

Methods in Ecology and Evolution 2018

Rory P. Wilson et al. (including **Eun Sun Lee**)

AquaMote-Ultra Low Power Sensor Tag for Animal Localization and Fine Motion Tracking
Eun Sun Lee Vikranth Jeyakumar Bharathan Balaji and Mani Srivastava

ACM SenSys Poster
2017

Projector-camera based remote assistance device for the elderly: design issues and implementation

IEEE/SICE SII 2016

Jin Uk Kwon, **Eun Sun Lee**, and Sang Chul Ahn

Relevant Skills

Programming Languages: Python, PyTorch, Matlab, C, C++

Tools & Frameworks: Habitat Simulator, ROS, Altium Designer

Languages: Korean and English (fluent), Spanish (basic proficiency)

Academic Activities

- Selected participant, **ICRA Doctoral Consortium**, May 2025
- Invited lecture on generative AI at colloquium "**AI Robotics in the Humanities and Arts**", Nov 2023
- Talk at the **MLAD Workshop** (Map-based Localization for Autonomous Driving), **ECCV**, Oct 2022