

Sunoh Lee

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Research Interests

Computer Vision

Open-World Perception, Open-Vocabulary Interaction, Representation Learning

Education

Gwangju Institute of Science and Technology (GIST)

Mar 2018 – Feb 2022

Bachelor of Science in Electrical Engineering and Computer Science

Minor in Economics

GPA: 4.2/4.5 (rank: 1/121)

Hansung Science High School

Mar 2015 – Feb 2018

Publications

* indicates equal contribution.

- **Open-World Object Detection with Instance Representation Learning** [[paper](#)]

[Sunoh Lee](#)*, Minsik Jeon*, Jihong Min, Junwon Seo

Submitted to IEEE International Conference on Robotics and Automation (ICRA), 2025

Accepted to IROS Workshop on Label Efficient Learning Paradigms for Autonomy at Scale, 2024

Work Experience

Republic of Korea Army (ROKA)

Jun 2022 – Present

First Lieutenant

Daejeon, Republic of Korea

- Selected as one of the 25 officers in Korea dedicated to science and technology research for national defense. Assigned to ADD for the development of defense technology.

Agency for Defense Development (ADD)

Jun 2022 – Present

Deep Learning Researcher

Daejeon, Republic of Korea

- **Project: Multi Robot Cooperative Autonomous Driving**
 - Developed a method to merge detection results, enabling multiple Unmanned Ground Vehicles (UGVs) to cooperate effectively while in motion, based on ROS2.
- **Project: Unmanned Reconnaissance Vehicles Development**
 - Developed a method to filter moving objects from LiDAR points using the Iterative Closest Point (ICP) algorithm, enabling robust path planning.
- **Project: Autonomous Tunnel Exploitation**
 - Developed an **unseen object detection** method for autonomous robotic exploration in subterranean environments using an **IP-camera and ROS2**.
 - Extracted **generalizable latent features** of previously unlearnable objects, enabling the system to recognize **similarities between objects** and detect hazardous materials.

- **Project: Deformable Object Recognition Technology**

- Constructed a dataset to enable the detection of deformable objects, such as animals, which may appear in **specific environments** like off-road terrain, rather than common objects like humans or vehicles.
- Developed a voxel-based **3D object detection** method using LiDAR to identify deformable objects.

Computer Vision Lab (GIST)

Researcher Intern

Advisor: Prof. Jonghyun Choi

Mar 2021 – Dec 2021

Gwangju, Republic of Korea

- **Project: Image Dataset occluded by various type of wires**

- Built an image dataset of objects occluded by various types of wires and validated it through object classification and segmentation.
- Conducted performance analysis on object recognition under wire occlusions using various augmentations and data preprocessing techniques.

Teaching Experience

Tutor, Linear Algebra, Gwangju Institute of Science and Technology

Selected Awards & Honors

- **2nd Place - Forest Public • Big Data Start-up Competition** Sep 2022
Won second place in a start-up competition organized by Korea Forest Service
IDEA: Customized hiking trail recommendation service
- **National Excellence Scholarship for Science and Engineering** Mar 2020 – Feb 2022
- **National Scholarship for Undergraduate Study** Mar 2018 – Feb 2020

Skills

Programming Languages: python, C/C++, MATLAB

Technologies: Pytorch, Docker, Git, OpenCV, ROS2, Ubuntu

Languages: Korean (Native), English (TOEIC: Will be uploaded)

Extracurricular Activities

Volunteer Activities

- **World Friends ICT Volunteers Program in Moldova** Jun 2019 – Jul 2019
Provided programming and Korean language education, along with cultural exchange activities.
- **Happy Move Global Youth Volunteer Program in India** Jul 2018
Developed appropriate desk technology for small spaces, participated in school facility maintenance, and engaged in cultural exchange initiatives.

The dormitory council

Sep 2018 – Feb 2020

Planned and organized various events and welfare programs