Yewon Song

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Research Interests

Autonomous Driving, 3D Perception, Cooperative Perception, Domain Adaptation

Education

M.S. **Hanyang University** | Automotive Engineering — Mar. 2025 – Present
- ▷ Advisor: Prof. Soonmin Hwang (Intelligent Robotics and Computer Vision Lab)

B.S. **Konkuk University** | Electrical and Electronic Engineering — Mar. 2020 – Feb. 2025
- ▷ Advisor: Prof. Wonjun Kim (Deep Computer Vision Lab)

Industry Experience

Skyautonet | Seoul, South Korea — Mar. 2024 – Jul. 2024

Internship, AI Researcher — Autonomous Driving Platform Team
- ▷ Developed a ROS2-based sensor platform with camera–radar fusion for the automotive middleware of an autonomous cleaning vehicle
- ▷ Optimized perception models on NVIDIA Jetson for real-time on-vehicle inference
- ▷ Validated the end-to-end pipeline through real-road field tests

Publications

[1] Rethinking BatchNorm Statistics for Robust Continual Test-Time Adaptation in LiDAR Semantic Segmentation — Preprint, 2026
Yewon Song, Yongjae Cho, Soonmin Hwang*

[2] Seeing the Unseen: Geometry-Aware Test-Time Adaptation for LiDAR Segmentation — ICAIIC, 2026
Yewon Song, Soonmin Hwang*

[4] Occlusion-Aware Pseudo Label Generation for LiDAR Semantic Segmentation via Z-Buffer-Guided 2D-to-3D Label Transfer — KSAE Fall Conf., 2025
Sumin Lee†, **Yewon Song**†, Soonmin Hwang* (†equal contribution)

[5] Understanding Cross-Domain Robustness in LiDAR Semantic Segmentation — ICTC, 2025
Yewon Song, Sumin Lee, Soonmin Hwang*

[6] Development of Test Scenarios for Evaluating Infrastructure-Connected Autonomous Driving Systems — SCS, 2025
Geonyeong Park, Byunghoon Park, Kyungmin Kim, **Yewon Song**, Nayoung Kim, Jeongtae Kim, Soonmin Hwang*

* = corresponding author, † = equal contribution

Selected Projects

Multi-Agent Cooperative Perception — Oct. 2025 – Present
The Global Leading Research Center (IRC)
- ▷ Multi-agent cooperative perception for autonomous driving

Development of test procedure standards for V2I connected automated driving system — Feb. 2024 – Feb. 2027
Ministry of Trade, Industry and Energy of Korea (MOTIE)

- Developed use cases, test cases, and test scenarios for V2I connected automated driving system.

Traversable Area Estimation for Off-Road Environments Dec. 2024 – Dec. 2025

ADD, Antlab

- LiDAR-Camera fusion-based traversability estimation for off-road autonomous driving
- Pseudo-GT generation via SLAM-based map alignment

FOD Detection System for Autonomous Cleaning Vehicle Mar. 2024 - Aug. 2024

SkyAutonet

- Real-time FOD detection using YOLOv8, SORT, and multi-camera fusion
- Optimized for small object detection on embedded platforms

Honors & Awards

Excellent Paper Award, Society for Standards, Certifications and Safety (SCS) Fall Conference 2025

Grand Prize, International Collegiate EV Autonomous Driving Contest 2023

Ministry of Transportation Research Director's Award

3rd Prize, Korean Society of Automotive Engineers (KSAE) Smart E-mobility Competition 2023

3rd Prize, International Collegiate EV Autonomous Driving Contest 2022

1st Prize, Konkuk University AI Worker Hackathon 2022

Technical Skills

Programming Languages	Python, C++, C
Frameworks	PyTorch, ROS1, ROS2
3D Vision	LiDAR Processing, 3D Perception
Simulators	CARLA, CarMaker, Gazebo, NVIDIA Isaac Sim
Tools	Docker, CUDA, Linux, Weights & Biases, Viser

Languages

Korean (Native) **English** (Fluent) **Chinese** (Basic) **Japanese** (Basic)