

Seungjae Kim

M.S. Student in Software Convergence

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Research Interests

Video Understanding

- Multi-Object Tracking, Motion Prediction

2D/3D Perception

- Cross-Domain Few-Shot Object Detection, 3D Object Detection

Novel View Synthesis

- 3D Gaussian Splatting, Multi-View Representation Learning

Education

Kyung Hee University

M.S. IN SOFTWARE CONVERGENCE

- Visual Science Lab
- Advisor: Prof. Myeong-Ah Cho

Gyeonggi, South Korea

Sep. 2025 – Aug. 2027 (Expected)

Hanshin University

B.S. IN INFORMATION AND COMMUNICATION ENGINEERING

- Completed mandatory military service (2020 – 2021)

Gyeonggi, South Korea

Mar. 2019 – Aug. 2025

Research Experience

Visual Science Lab, Kyung Hee University

UNDERGRADUATE INTERN

- Research topics: Multi-Object Tracking, Few-Shot Object Detection, and 3D Object Detection
- Advisor: Prof. Myeong-Ah Cho

Gyeonggi, South Korea

Jul. 2024 – Aug. 2025

Projects

AI Technology for Recognizing Abnormal Situations in Night and Bad Weather

DEEP LEARNING RESEARCHER

- Image restoration and Data pre-processing under adverse visual conditions

Korea Evaluation Institute of Industrial Technology (KEIT)

Jul. 2024 – Present

Anomaly Pre-Detection for Intelligent Surveillance via Vision-Language Fusion

DEEP LEARNING RESEARCHER

- Vision-language model integration for surveillance anomaly interpretation and response

National Research Foundation of Korea (NRF)

Sep. 2024 – Present

Development of an AGI Platform for a Multisensory Social Robot

DEEP LEARNING RESEARCHER

- Few-shot object detection and cross-domain adaptation for robotic perception

Institute for Information & Communications Technology Promotion (IITP)

Apr. 2025 – Jan. 2026

Multimodal Alignment-Based 3D Perception Foundation Model for Autonomous Driving

DEEP LEARNING RESEARCHER

- 3D object detection and LiDAR-RGB sensor fusion

National IT Industry Promotion Agency (NIPA)

Sep. 2025 – Dec. 2025

Publications

International Conference

[1] Rethinking Prototype-based Similarity Learning for Few-Shot Object Detection

KunHo Heo*, **Seungjae Kim***, Wongyu Lee*, SuYeon Kim, MyeongAh Cho *Equal contribution

Under Review

- [2] **DB-Fusion: Dual-Balanced Sensor Fusion for Multimodal 3D Object Detection**
SeungJoon Lee*, Taeyoung Kim*, Useok Choi*, **Seungjae Kim**, Chanse Oh, MyeongAh Cho **Equal contribution*
Under Review
- [3] **PlugTrack: Multi-Perceptive Motion Analysis for Adaptive Fusion in Multi-Object Tracking**
Seungjae Kim, SeungJoon Lee, MyeongAh Cho
Proceedings of the AAAI Conference on Artificial Intelligence (AAAI), 2026

Domestic Conference

- [1] **Efficient 3D Gaussian Splatting with Adaptive Depth Refinement in High-Confidence Regions**
Seungjae Kim, Taeyoung Kim, YongHyun Gwon, MyeongAh Cho
Korea Software Congress (KSC), 2025
- [2] **Explainable Intelligent Surveillance Video System Using Spatial Localization**
MyoungChul Kim, **Seungjae Kim**, SuYeon Kim, MyeongAh Cho
Korea Software Congress (KSC), 2025
- [3] **BEV Segmentation Prior-Guided Class-Wise Attention for 3D Object Detection in Autonomous Driving**
SeungJoon Lee, Taeyoung Kim, **Seungjae Kim**, MyeongAh Cho
Korea Software Congress (KSC), 2025
- [4] **Future-Aware Nonlinear Prediction Module for Real-Time Multi-Object Tracking**
Seungjae Kim, Useok Choi, Hayoung Lee, MyeongAh Cho
Korea Computer Congress (KCC), 2025
- [5] **Improving Latent Space in Consistency Distillation via Self-Generated Targets**
Useok Choi, **Seungjae Kim**, Chanse Oh, MyeongAh Cho
Korea Computer Congress (KCC), 2025
- [6] **Analysis of Key Conditions for Generalizable Generated Video Detection**
Junhee Lee, **Seungjae Kim**, Seungjae Choi, Wongyu Lee, MyeongAh Cho
Korea Software Congress (KSC), 2024

Patents

Domestic Patent

- [1] **Method and Apparatus for Generating 3D Scene Graph**
KR Registration No. 10-2025-0188361, South Korea, Dec. 2025

Software Copyright

- [1] **Improved Sound Source Localization Model through Audio Signal Enhancement**
C-2025-035472, South Korea, 2025

Reference

Prof. Myeong-Ah Cho

M.S. ADVISOR

- Assistant Professor, Visual Science Lab
- Email: maycho@khu.ac.kr

Kyung Hee University