

Hyun-Kurl Jang

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RESEARCH SUMMARY

I am a Ph.D. candidate in the Department of Mechanical Engineering at KAIST, advised by Prof. Kuk-Jin Yoon in the Visual Intelligence Laboratory.

My research focuses on enabling **vision models to continuously learn and adapt beyond the lab**. I explore how models can leverage unlabeled real-world data to improve their own representations and predictions over time. My goal is to build robust perception systems across images, videos, and 3D environments that continuously evolve and become more reliable as they encounter the real world.

RESEARCH INTEREST

- 3D and Multi-Modal Scene Understanding
- Robustness under Distribution Shift
- Test-Time, Continual, and Domain Adaptation
- Vision Foundation Models

EDUCATION

- **Korea Advanced Institute of Science and Technology (KAIST)** Daejeon, South Korea
Integrated M.S./Ph.D. in Mechanical Engineering (GPA: 4.01/4.3) Sept. 2022 – Present
Advisor: Kuk-Jin Yoon, Visual Intelligence Laboratory
- **Korea Advanced Institute of Science and Technology (KAIST)** Daejeon, South Korea
B.S. in Mechanical Engineering (GPA: 3.57/4.3) March 2016 – August 2022

PUBLICATIONS

(* denotes equal contribution.)

- [NeurIPS 2026] **Hyun-Kurl Jang**, Jihun Kim, Kuk-Jin Yoon. “Preference-Guided Adaptation for Open-Vocabulary Semantic Segmentation via Prompt Disagreement”
Adapts open-vocabulary segmentation by exploiting disagreement across text prompts as a training signal.
- [ECCV 2026] **Hyun-Kurl Jang***, Jihun Kim*, Hyeokjun Kweon*, Kuk-Jin Yoon. “Distill Once, Adapt Life-Long: Exploring Dataset Distillation for Continual Test-Time Adaptation”
Uses distilled data to stabilize continual test-time adaptation against error accumulation and catastrophic forgetting.
- [ECCV 2026] Yuhwan Jeong*, Hyeonseong Kim*, Daehyun We*, Seonkyu Song*, Jinnyeong Yang*, **Hyun-Kurl Jang**, Youngho Yoon, Seokwoo Jung, Kuk-Jin Yoon. “FrozenDrive: Zero-Shot Text-Guided Driving Scene Generation and Data Augmentation with Parameter-Free Frozen Diffusion Model”
Generates multi-view, temporally coherent driving scenes on a frozen diffusion backbone, preserving text guidance.
- [ECCV 2026 CDEL Workshop, Oral] Jihun Kim*, **Hyun-Kurl Jang***, Hyemin Yang*, Jinnyeong Yang*, Hyeokjun Kweon*, Kuk-Jin Yoon. “Bootstrapping a 4D LiDAR Annotation Tool from Video Foundation Models”
Transfers video foundation models to 4D to cut manual annotation cost for 4D segmentation.
- [CVPR 2026] Hyeonseong Kim*, **Hyun-Kurl Jang***, Kuk-Jin Yoon. “Test-Time Training for LiDAR Semantic Segmentation under Corruption via Geometric Inlier Discrimination”
Restores LiDAR segmentation accuracy under real-world sensor corruption at test time.
- [NeurIPS 2024] **Hyun-Kurl Jang***, Jihun Kim*, Hyeokjun Kweon*, Kuk-Jin Yoon. “TALoS: Enhancing Semantic Scene Completion via Test-time Adaptation on the Line of Sight”
Turns observations available at inference into self-supervision for semantic scene completion.
- [ECCV 2024] Youngho Yoon*, **Hyun-Kurl Jang***, Kuk-Jin Yoon. “GMT: Enhancing Generalizable Neural Rendering via Geometry-Driven Multi-Reference Texture Transfer”
- [CVPR 2023, Highlight] Taewoo Kim, Yujeong Chae, **Hyun-Kurl Jang**, Kuk-Jin Yoon. “Event-based Video Frame Interpolation with Cross-Modal Asymmetric Bidirectional Motion Fields” (**Top 2.5% of submissions**)

RESEARCH PROJECTS (INDUSTRY & GOVERNMENT)

- **Autonomous Driving in Unstructured Off-Road Environments** 2025 – Present
Hanwha Aerospace.
- **Data Augmentation and Sensor Fusion for Robust Autonomous Driving** 2025
42dot.
- **2025 HMG Autonomous Driving Challenge** 2024
HMG. Advisor.
- **AI Research for Intelligent X-ray Luggage Scanning System** 2022 – 2024
Korea Customs Service.

PROFESSIONAL SERVICE

- Reviewer: **CVPR, ICCV, ECCV, NeurIPS**
- Selected as a **NeurIPS 2025 Top Reviewer**
- Selected as a **NeurIPS 2026 Top Reviewer**

HONORS AND AWARDS

- Gold Prize, Best Paper Awards, 35th Workshop on Image Processing and Image Understanding (IPIU) 2023