Eunchong Kim

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전문연구요원 보충역 편입 희망 (본인 T.O 보유)

RESEARCH INTEREST

Autonomous Driving: End-to-End Stack & Perception Systems

EDUCATION

Ulsan National Institute of Science and Technology (UNIST) Ulsan, Republic of Korea
M.S. in Artificial Intelligence *Sep. 2023 - Feb.2026*

- GPA: 4.05
- Advisor: Prof. Jeong hwan Jeon (Robotics and Mobility Lab.)
- Thesis: End-to-End Autonomous Driving: Deployment-Oriented and Rule-Conformant Design

Jacobs University Bremen (Currently Constructor Univeristy) Bremen, Germany
B.Sc. in Robotics and Intelligent Systems *Sep. 2020 - Jun. 2023*

- GPA: 1.52 / 1.0 (German Scale) ≈ 3.5 / 4.0 (U.S. GPA)
- Advisor: Prof. Francesco Maurelli
- Thesis: Event-Based Motion Segmentation and Stereo Feature Matching in Highly Cluttered Environments (Collaborative research with WasteAnt GmbH)
- Major Representative
- Merit-based Scholarship (€5,000 per year)

PUBLICATION

Eunchong Kim, Heedon Jeong, Sungjun Heo, Sunhwi Kim, Seongjae Lee, Jaichan Shin, Heecheol Yoo, and Jeong hwan Jeon, "Deployment-Oriented End-to-End Autonomous Driving: Enhancing Closed-Loop Stability with a Lightweight Camera-Only Framework," in Proc. of the IEEE Intelligent Vehicles Symposium (IV), 2026. (Accepted)

PROJECTS

2025 Hyundai Motor Group Autonomous Driving Challenge *Oct. 2024 - Sep. 2025*
1st Round: 3rd place (₩5M Reward)
2nd Round: 1st place (Team leader) (₩30M Reward, Recruitment perks, China Tech Tour)

- Continuous Optimization: Drove performance gains through a feedback loop: Performance Analysis → Data-driven and model-centric improvements → Re-training & Evaluation.
- Deployment-Oriented E2E Model Development: Developed an E2E model from scratch, targeted for NVIDIA Jetson AGX Orin. Balanced real-time performance and functionality by selectively integrating essential driving modules through trade-off analysis between computational cost and performance gains.
- Conflict-Free Multi-Task Learning: Developed a training-only auxiliary module to resolve task-wise prediction conflicts, ensuring physically plausible outputs without inference overhead.
- Latency-Compensated Labeling: Implemented a latency-aware labeling policy to compensate for the temporal gap between sensor input and actual actuation.
- Real-time Deployment: Achieved an inference speed of 16Hz on NVIDIA Jetson AGX Orin.
- Tech. Stacks: BEV Segmentation, 3D Object Detection, Vectorized Map Construction, Transformer-based Planning and Control.

BEV-based Lane Detection for ERP42 *Dec. 2023 - Feb. 2024*

- Real-time BEV-Centric Lane Detection: Developed a lightweight lane detection system to transform perspective inputs into a unified Bird's-Eye View. Ensured high-speed performance on ERP42's low-resource onboard system for downstream planning.

Multi-Teacher Knowledge Distillation based Pedestrian Detection *Aug. 2023 - Dec. 2023*

- Custom Data Generation via Pseudo-labeling: Synthesized high-quality Ground Truth for diverse domain-specific datasets using pseudo-labeling, maximizing data efficiency and minimizing labeling cost.
- Performance-Efficiency Optimization via MTKD: Resolved accuracy-speed trade-off by distilling knowledge from multiple domain-specific teachers into a lightweight student model. Achieved a 16% mAP gain over fine-tuning while maintaining real-time inference.

Truck-Discharging Waste Segmentation using Event Camera Data *Jan. 2023 - Jun. 2023*

- Spatio-temporal Segmentation: Developed an event-based segmentation algorithm to overcome motion blur in frame-based cameras. Leveraged temporal cues to ensure precise anomalous waste detection in incineration plants.
- Event-RGB Stereo Matching: Applied homography-based matching to project segmentation masks into RGB images for intuitive spatial visualization and evaluation.

Event-based Vehicle Tracking in Highway Surveillance System *Jun. 2022 - Aug. 2022*

- Efficient Tracking: Developed a low-cost, event-seeking clustering-based tracking algorithm for highway surveillance. Ensured energy efficiency and robust performance by overcoming RGB motion blur in high-speed scenarios.

AWARDS

Excellence Award | AI Tech Open Workshop (AI Graduate School) *Apr. 2025 - Sep. 2025*

- Project Title: Development of an End-to-End Autonomous Driving Framework Using a High-Fidelity Simulator.
- ₩ 2,500,000 Reward

ACADEMIC EXPERIENCE

Reviewer | 2026 IEEE Intelligent Vehicles Symposium (IV) *Nov. 2025*

WORK & TEACHING EXPERIENCES

Ulsan National Institute of Science and Technology

Teaching Assistant — Spring 2024, Spring 2025

- AI Programming I

Research Intern — Jun. 2022 - Aug. 2022

- Robotics and Mobility Lab.

WasteAnd GmbH Oct. 2022 - Jun. 2023

Working Student

Jacobs University Bremen (Currently Constructor University) 2021 - 2023

Teaching Assistant

- Algorithms and Data Structures (C++)
- Programming in C/C++
- Embedded Systems
- Introduction to Robotics and Intelligent Systems Lab (Arduino)

SKILLS

Languages

- Korean ●●●●●
- English ●●●●●
- German ●●○○○

Programming Languages

Python, C++

Frameworks & Libraries

PyTorch, OpenCV, Pandas, NumPy

Tools & Platform

ROS, Git, Docker, MORAI simulator