Sungjun Heo

Ulsan, Republic of Korea https://rml.unist.ac.kr/ Sungjun Heo

Education

Integrated M.S.–Ph.D. — **Ulsan National Institute of Science and Technology (UNIST)** — Mar 2024 -
- Graduate School of Artificial Intelligence
- Robotics & Mobility Laboratory of Prof.J Jeon
- Research Field : End-to-End Autonomous Driving, Reinforcement Learning based Planning, Robotics.

B.S — **Ulsan National Institute of Science and Technology (UNIST)** — Mar 2021 - Fed 2024
- Department of Electrical Engineering
- Early Graduation(by one year)

Publications

Sungjun Heo and J. Jeon, **"Predicted State-Based Hierarchical Reinforcement Learning for Long-Term Decision Making in Urban Dynamic Scenarios"** - Proceeding in IEEE Int. Veh. Sym. (Flagship Conference of IEEE ITSS - IV 2025), pp. 1164–1170. — Fed 2025

Sungjun Heo*, H. Jeong*, E. Kim*, H. Lee*, J. Lee*, S. Lee*, at el., **"Rule-Conformant End-to-End Autonomous Driving: Safer Intersection Behavior via Enforced Cue Representation"** - (Preparing submission) — May 2025

Sungjun Heo and J. Jeon, **"SHIFT-RL: Sensor-driven Hierarchical Information Fusion Transformer for BEV-based Maneuvering in Dense Multi-lane Environments"** - Under Review in IEEE Int. Conf. Robot. Autom. (Major Conference of IEEE RAS - ICRA 2026) — Sep 2025

H. Jeong, E. Kim, **Sungjun Heo**, S. Kim, S. Lee, J. Shin at el., **"Deployment-Oriented End-to-End Autonomous Driving: Enhancing Closed-Loop Stability with a Lightweight Framework"** - Accepted in IEEE Int. Veh. Sym. (Flagship Conference of IEEE ITSS - IV 2026) — Oct 2025

Ongoing Publications, Project

Sungjun Heo and J. Jeon, **"DOAU-Flow: Constrained Distribution Optimization with Bellman Flow Consistency for Mixed-Dataset Offline RL "** — Nov 2025 - Current

Awards and Honors

Academic Achievement Award — 2021
- Undergraduate academic achievement excellence award in 2021

Undergraduate Research Award (Top 5 / All graduation students) — Dec 2023
- Research Title : Autonomous Driving Waypoint-generation based on Vehicle Kinematics.

3rd place in Preliminary Round (3 / 16 teams) — Mar 2025
- Preliminary Round of 2025 Hyundai Motor Group's Autonomous Driving Challenge
- RGB camera based End-to-End Mission-based Autonomous driving challenge in K-City

1st place in 2025 Hyundai Motor Group's Autonomous Driving Challenge (1 / 16 teams) — Sep 2025
- Final 2025 Hyundai Motor Group's Autonomous Driving Challenge
- RGB camera based End-to-End Full-Self-Driving in K-City

Grand Prize - Brain To Society, U-Challenge Festival (1 / 96 teams) Dec 2025

- Brain To Society : Future Mobility part
- Title : Sensor-driven Hierarchical Information Fusion Transformer for BEV-based Maneuvering in Dense Multi-lane Environments

Work Experience

Paper Reviewer

- 3 Papers in 2025 IEEE INTELLIGENT VEHICLES SYMPOSIUM
- 2 Papers in 2025 IEEE International Conference on Intelligent Transportation Systems
- 2 Papers in 2026 IEEE INTELLIGENT VEHICLES SYMPOSIUM

AI Innovation Park Internship Jul - Sep 2024

- Development of a time-series-based AI model for power prediction

Project

Preliminary Round : 2025 Hyundai Motor Group's Autonomous Driving Challenge Sep 2024 - Mar 2025

- Position : Team Member(model framework, dataset)
- RGB camera based End-to-End Mission-based Autonomous driving challenge in K-City

Final Round : 2025 Hyundai Motor Group's Autonomous Driving Challenge Apr 2025 - Oct 2025

- Position : Team Member(rule-based expert driving dataset, model framework)
- RGB camera based End-to-End Full-Self-Driving in K-City

Brain to Society : Future mobility Jul - Dec 2025

- Position : Team Leader
- Title : Sensor-driven Hierarchical Information Fusion Transformer for BEV-based Maneuvering in Dense Multi-lane Environments