Jungho Kim

Ph.D. Student

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Research Interests

- Safety-Oriented End-to-End Autonomous Driving
- 3D Scene Understanding and Occupancy Prediction
- Motion Prediction and Planning
- Autonomous Driving Foundation Models

Education

Ph.D. in Interdisciplinary Program in Artificial Intelligence — Mar 2025 – Present
Seoul National University, Seoul, South Korea
Advisor: Prof. Jun Won Choi

M.S. in Artificial Intelligence — Mar 2022 – Feb 2025
Hanyang University, Seoul, South Korea
Advisor: Prof. Jun Won Choi

B.S. in Automotive Engineering — Mar 2015 – Feb 2022
Kookmin University, Seoul, South Korea
Minor: Computer Science

Publications (* : Equal Contributions)

SafeDrive: Fine-Grained Safety Reasoning for End-to-End Driving in a Sparse World
Jungho Kim, Jiyong Oh, Seunghoon Yu, Hongjae Shin, Donghyuk Kwak, and Jun Won Choi
*The IEEE/CVF Conference on Computer Vision and Pattern Recognition (**CVPR** **Highlight**), 2026.*

STONE Dataset: Scalable 3D Traversability Dataset with Multi-sensor Surround-View for Robot Navigation in Off-road Environments
Konyul Park*, Daehun Kim*, Jiyong Oh, Seunghoon Yu, Junseo Park, Jaehyun Park, Hongjae Shin, Hyungchan Cho, **Jungho Kim**, and Jun Won Choi
*IEEE International Conference on Robotics & Automation (**ICRA**), 2026.*

OnlineBEV: Recurrent Temporal Fusion in Bird's Eye View Representations for Multi-Camera 3D Perception
Junho Koh*, Youngwoo Lee*, **Jungho Kim**, Dongyoung Lee, and Jun Won Choi
*IEEE Transactions on Intelligent Transportation Systems (**T-ITS**), 2025.*

ProtoOcc: Accurate, Efficient 3D Occupancy Prediction Using Dual Branch Encoder-Prototype Query Decoder

Jungho Kim*, Changwon Kang*, Dongyoung Lee*, Sehwan Choi, and Jun Won Choi

*AAAI Conference on Artificial Intelligence (**AAAI**), 2025.*

Mask2Map: Vectorized HD Map Construction Using Bird's Eye View Segmentation Masks

Sehwan Choi*, **Jungho Kim***, Hongjae Shin, and Jun Won Choi

*European Conference on Computer Vision (**ECCV** **Oral**), 2024.*

SiT Dataset: Socially Interactive Pedestrian Trajectory Dataset for Social Navigation Robots

Jong Wook Bae*, **Jungho Kim***, Junyong Yun*, Changwon Kang*, Jeongseon Choi, Chanhyeok Kim, Junho Lee, Jungwook Choi, Chanhyeok Kim, Junho Lee, Jungwook Choi, and Jun Won Choi

*Neural Information Processing Systems (**NeurIPS**), 2023.*

R-Pred: Two-Stage Motion Prediction Via Tube-Query Attention-Based Trajectory Refinement

Sehwan Choi, **Jungho Kim**, Junyong Yun, and Jun Won Choi

*IEEE/CVF International Conference on Computer Vision (**ICCV**), 2023.*

CarPLAN: Context-Adaptive and Robust Planning with Dynamic Scene Awareness for Autonomous Driving

Junyong Yun*, **Jungho Kim***, ByungHyun Lee, Dongyoung Lee, Sehwan Choi, Seunghyeop Nam, Kichun Jo, and Jun Won Choi

Submitted, 2025.

Competition

NAVSIM v2 End-to-End Driving Challenge 2025 (CVPR)

Team SNU

Travel Grant Recipient

Research Projects

Development of Reference Data and Core Technologies for End-to-End Autonomous Driving

Government-Funded National Research Project · Jul. 2025 – Dec. 2028

- Develop reference datasets and end-to-end autonomous driving models for real-vehicle deployment.
- Develop perception components that support downstream prediction, planning, and control in an integrated driving system.

Large-Model-Based Global Map Generation Technology Development

Hyundai Motors Group · Dec. 2025 – Nov. 2026

- Develop global map generation methods leveraging large models and diverse driving data.
- Improve map consistency and scalability across long driving trajectories and large-scale environments.

Exploratory Development of Planning Networks for Autonomous Driving

Hyundai Mobis · Jan. 2026 – Dec. 2026

- Investigate learning-based planning network architectures for autonomous driving.
- Develop training objectives and evaluation methods for safe planning in dynamic traffic scenarios.

Mobility Technologies for Rapid and Safe Autonomous Driving in Unstructured Terrain

Government-Funded National Research Project · Apr. 2024 – Dec. 2025

- Develop environment-recognition technologies for unstructured off-road driving scenarios.
- Develop safety-aware mobility technologies for robust autonomous navigation on diverse terrains.

Deep Network Development for Camera-Based Multi-Task Object Detection

Hyundai Motors Group · Jun. 2023 – May 2024

- Develop deep neural networks for camera-based multi-purpose object detection.
- Improve robust recognition of surrounding road users and objects under diverse driving conditions.

Patent

Method for Occupancy State Prediction of Semantic Objects Based on Multi-View Images for Surrounding-Environment Recognition, and Computer Device Therefor

Republic of Korea Patent Application No. 10-2024-0182281
Jun Won Choi, Sehwan Choi, and **Jungho Kim**.

Method for Generating a Voxel Feature Map Based on a Bird's-Eye-View Feature Map, Vehicle, and Computer-Readable Storage Medium Storing Instructions for Performing the Method

Republic of Korea Patent Application No. 10-2025-0109147
Jun Won Choi and **Jungho Kim**.