

SeongRae Noh

rhosunr99@korea.ac.kr | seongraenoh.github.io | linkedin.com/in/seongrae-noh | github.com/SeongRaeNoh

TECHNICAL SKILLS

Programming: Python, C++

Frameworks & Tools: PyTorch, HuggingFace, LangChain, OpenRouter, OpenCV, Git, WandB, Docker, UnrealEngine5

Language: Korean (Native), English (Advanced), Japanese (Intermediate)

EXPERIENCE

Undergraduate Researcher

Dec. 2021 – Feb. 2024

KyungHee University, IIIXR Lab (Advisor: Prof. HyeongYeop Kang)

Yongin, South Korea

- Developed an LLM-based multi-agent system in the VirtualHome environment for embodied task planning and interaction.
- Synthesized urban layouts using generative models and visualized them in Unreal Engine.

SELECTED PUBLICATIONS

(CVPR 2026) Edit-As-Act: Goal-Regressive Planning for Open-Vocabulary 3D Indoor Scene Editing

SeongRae Noh, SeungWon Seo, Gyeong-Moon Park, HyeongYeop Kang

- Improved instruction fidelity by 20% and semantic consistency by 43.1% over prior methods; introduced the E2A Benchmark.
- Reframed open-vocabulary 3D scene editing as goal-regressive world-state planning for verifiable and physically consistent edits.

(ICLR 2026) From Assumptions to Actions: Turning LLM Reasoning into Uncertainty-Aware Planning for Embodied Agents

SeungWon Seo*, SooBin Lim*, **SeongRae Noh***, Haneul Kim, HyeongYeop Kang

- Reduced inter-agent communication by 71.1% while improving task performance by 8.6%.
- Proposed uncertainty-aware scenario tree planning to convert latent LLM assumptions into robust multi-agent decisions.

(AAAI 2025 Oral) REVECA: Adaptive Planning and Trajectory-Based Validation in Cooperative Language Agents Using Information Relevance and Relative Proximity

SeungWon Seo*, **SeongRae Noh***, Junhyeok Lee, SooBin Lim, Won Hee Lee, HyeongYeop Kang

- Achieved 47% performance improvement in noisy environments and increased user preference by 73%.
- Enabled robust cooperation via relevance-filtered memory, proximity-aware planning, and trajectory-based validation.

SELECTED PROJECTS

Development of a Multimodal Information-Driven Service Agent Framework (LG Electronics)

2025 – 2026

- Developed a multimodal HVAC service agent framework that integrates LLM reasoning with visual and structured data to support context-aware engineer assistance.

Understanding Multimodal PDF Documents Using LLMs (LG Electronics)

2025

- Built an LLM-based system for understanding multimodal HVAC PDF documents, enabling structured extraction and cross-modal reasoning over text, tables, and figures.

EDUCATION

KyungHee University

Yongin, South Korea

Integrated MS-Ph.D. in Computer Science, IIIXR LAB (Advisor: Prof. HyeongYeop Kang)

2024 – Present

KyungHee University

Yongin, South Korea

B.S. in Computer Science

2020 – 2024

HONORS & AWARDS

2025 – AAAI Student Scholarship, AAAI

2024 – Teaching Assistance Scholarship, Kyung Hee Univ. (Computer Graphics, Game Engine Basics)

2023 – Pearl Abyss Fellowship (Project: Urban Building Block Generation)

2022 – 2nd place on KHU Software Convergence Inter-Club Competition for COVID-19 Recovery Initiatives

2021 – Pearl Abyss Fellowship (Project: Procedural Village Generation)

ACADEMIC SERVICE

Reviewer: ICML (2026), ACM MM (2025), Scientific Reports (2025)

Student Volunteer: AAAI (2025)