Jinyeon Kim

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Summary

I am a Post-Master Researcher at the Machine Perception and Reasoning Lab (SNUMPR), Seoul National University (SNU), under the supervision of Prof. Jonghyun Choi. My research focuses on Embodied AI, particularly in perception and planning/replanning. Prior to my M.S. studies, I worked as a researcher at the Korea Electronics Technology Institute (KETI)'s Intelligent Image Processing Research Center from 2020 to 2021 as a researcher. I am currently seeking an internship or a full-time position in embodied agent research.

Research Interest

Embodied AI, Robotics, Autonomous Agents, Multimodality

Education

MS **Yonsei University** — Sep. 2022 – Feb. 2025
Department of Artificial Intelligence (Advisor : Jonghyun Choi)
CGPA (Major): 4.17 (4.19)/4.3

BS **Kwangwoon University** — Mar. 2014 – Feb. 2019
Division of Robotics (Information Control), School of Robotics (Advisor : Juhoon Back)
CGPA (Major): 4.01 (4.08)/4.5

Research Experience

Automation and Systems Research Institute (ASRI), SNU, Researcher — Mar. 2025 – Present, Seoul, South Korea

- Researched action replanning for embodied agents using LLMs to prevent task failure.
- Designed memory systems to track object changes, allowing the agent to recall actions and predict next steps.

Korea Electronic Technology Institute (KETI), Researcher — Sep. 2020 – Dec. 2021, Seongnam, South Korea

- Designed an image detection network to accommodate lighting changes and object poses.
- Implemented and operated quantized networks on board in embedded systems using C.
- Optimizing inference using TensorRT on Jetson boards.

Luxrobo, Firmware Developer Intern and Freelancer — Jul. 2017 – Sep. 2017, Seoul, South Korea

- Developed educational firmware coding content.
- Instructed elementary school teachers on firmware coding and the principles of hardware mechanisms.

Publications

Pre-emptive Action Revision by Environmental Feedback for Embodied Instruction Following Agents — 2024
Jinyeon Kim*, Cheolhong Min*, Byeonghwi Kim, Jonghyun Choi
Conference on Robot Learning (CoRL) (* Equal Contribution)

ReALFRED: An Embodied Instruction Following Benchmark in Photo-Realistic Environments — 2024
Taewoong Kim*, Cheolhong Min*, Byeonghwi Kim, ***Jinyeon Kim***, Wonje Jeung, Jonghyun Choi
European Conference on Computer Vision (ECCV) (* Equal Contribution)

Context-Aware Planning and Environment-Aware Memory for Instruction Following Embodied Agents — 2023
Byeonghwi Kim, ***Jinyeon Kim***, Cheolhong Min, Yuyeong Kim, Jonghyun Choi
International Conference on Computer Vision (ICCV)

Awards

Gold Prize: Outstanding Paper Awards (IPIU 2025, South Korea) Feb. 2025

Byeonghwi Kim, Taewoong Kim, Jimin Nam, Jaehong Min, ***Jinyeon Kim***, Jaehong Kim, Jaehong Kim, Hyoeun Kim, hyejeong jeon, Jonghyun Choi

- A zero-shot affordance prediction method using generative models.

1st Place in Generalist Language Grounding Agents Challenge (CVPRW) Jul. 2023

Jinyeon Kim, Byeonghwi Kim, Cheolhong Min, Yuyeong Kim, Taewoong Kim, Jonghyun Choi

- ECLAIR: Event-Cognizant Language Interaction Embodied Robots
- A memory system to track object changes, helping the agent recall past actions and predict next steps.

3rd Place in the 19th Korea Intelligent Robot Contest (KIRC) Oct. 2018

Jinyeon Kim, Hwanseok Kwon, Jaeseok Yoo, Hoiman Kim

- VICTER : Very Intelligent Coding TeachER
- An educational robot that teaches coding principles by controlling a cart's movements through blocks or a mobile application.

Patents

METHOD FOR PERFORMING TASKS ACCORDING TO CAPEAM MODEL INCLUDING CONTEXT-AWARE PLANNING MODULE AND ENVIRONMENT-AWARE MEMORY MODULE AND AI AGENT USING THE SAME 2024

Jonghyun Choi, Byeonghwi Kim, ***Jinyeon Kim***, Cheolhong Min, Yuyeong Kim

KR 10-2675973

Skills

Programming: Python (+6 yrs), C/C++(+6 yrs), Matlab(+4 yrs)

Hardware: Nvidia Jetson board, AVR studio

Language: English (IELTS 6.5, OPIc IH), Korean (Native)

ECT: Knitting, iPad drawing