

Byeonghwi Kim

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Research Interest

Embodied AI, Robotics, Autonomous Agents, Multimodality

Experience

Allen Institute for AI (AI2) [🔗](#), Research Intern

- Mentor: [Dr. Roozbeh Mottaghi](#) [🔗](#)

Seattle, WA, USA
Sept. 2021 - Mar. 2022

Education

Ph.D. Seoul National University | Electrical and Computer Engineering

- Advisor: [Jonghyun Choi](#) [🔗](#)

Sept. 2024 - Present

Ph.D. Yonsei University | Artificial Intelligence

Course • Advisor: [Jonghyun Choi](#) [🔗](#)

Sept. 2022 - Aug. 2024

M.S. Gwangju Institute of Science and Technology (GIST) | Artificial Intelligence

- *GIST President Fellowship*
- Advisor: [Jonghyun Choi](#) [🔗](#)

Mar. 2020 - Aug. 2022

B.S. Kwangwoon University | Computer Engineering

- *Graduated with First-Class Honors* (GPA: 4.42/4.50, Rank: 1/74)
- Advisor: [Cheolsoo Park](#) [🔗](#)

Mar. 2013 - Feb. 2020

Publications

Multi-Modal Grounded Planning and Efficient Replanning for Learning Embodied Agents with A Few Examples [🔗](#)

Taewoong Kim, **Byeonghwi Kim**, Jonghyun Choi

AAAI 2025 (to appear)

Pre-emptive Action Revision by Environmental Feedback for Embodied Instruction Following Agents [🔗](#)

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

CoRL 2024

ReALFRED: An Embodied Instruction Following Benchmark in Photo-Realistic Environments [🔗](#)

Taewoong Kim*, Cheolhong Min*, **Byeonghwi Kim**, Jinyeon Kim, Wonje Jung, Jonghyun Choi

ECCV 2024

Online Continual Learning for Interactive Instruction Following Agents [🔗](#)

Byeonghwi Kim*, Minhyuk Seo*, Jonghyun Choi

ICLR 2024

Context-Aware Planning and Environment-Aware Memory for Instruction Following Embodied Agents [🔗](#)

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

ICCV 2023

Multi-Level Compositional Reasoning for Interactive Instruction Following [🔗](#)

Suvaansh Bhambri*, **Byeonghwi Kim***, Jonghyun Choi

AAAI 2023 (Oral)

Factorizing Perception and Policy for Interactive Instruction Following [🔗](#)

Kunal Pratap Singh*, Suvaansh Bhambri*, **Byeonghwi Kim***, Roozbeh Mottaghi, Jonghyun Choi

ICCV 2021

Agent with the Big Picture: Perceiving Surroundings for Interactive Instruction Following [🔗](#)

Byeonghwi Kim, Suvaansh Bhambri, Kunal Pratap Singh, Roozbeh Mottaghi, Jonghyun Choi

Embodied AI Workshop @ CVPR 2021

Automated White Blood Cell Counting in Nailfold Capillary Using Deep Learning Segmentation and Video Stabilization [↗](#)

Byeonghwi Kim*, Yuli Sun Hariyani*, Young-Ho Cho, Cheolsoo Park

Sensors 2020

Academic Service

Reviewer / Program Committee Member

- *Machine Learning*: ICLR (2024-2025), ICML (2024), NeurIPS (2023-2024), AISTATS (2025), AAAI (2024-2025)
- *Computer Vision*: IEEE T-PAMI, CVPR (2023-2025), ECCV (2024), WACV (2023-2025)
- *Robotics*: ICRA (2022, 2025), RO-MAN (2024)

Honors and Awards

- Silver Prize:** Graduate School Innovation Outstanding Paper Awards (Yonsei University) Jul. 2024
- *Context-Aware Planning and Environment-Aware Memory for Instruction Following Embodied Agents* [↗](#)
- Silver Prize:** Outstanding Paper Awards (IPIU 2024, South Korea) Feb. 2024
- *Multi-Modal Grounded Planning and Efficient Replanning for Learning Embodied Agents with A Few Examples* [↗](#)
- Bronze Prize:** Outstanding Paper Awards (IPIU 2024, South Korea) Feb. 2024
- *Online Continual Learning for Interactive Instruction Following Agents* [↗](#)
- Bronze Prize:** Graduate School Innovation Outstanding Paper Awards (Yonsei University) Jul. 2023
- *Multi-Level Compositional Reasoning for Interactive Instruction Following* [↗](#)
- 1st Place:** Generalist Language Grounding Agents Challenge (CVPRW'23) Jun. 2023
- *ECLAIR: Event-Cognizant Language Interaction Robots* [↗](#)
- 2nd Place:** ALFRED Challenge (CVPRW'21) Jun. 2021
- *Agent with the Big Picture: Perceiving Surroundings for Interactive Instruction Following* [↗](#)
- 2nd Place:** ALFRED Challenge (ECCVW'20) Aug. 2020
- *Improving Mask Prediction for Long Horizon Instruction Following* [↗](#)

Teaching Experience

Teaching Assistant @ Korea Telecom (KT)

- *KT-SNU AI Training Course - Computer Vision* Jul. 2024

Teaching Assistant @ Seoul National University

- *Deep Learning* Fall 2024
- *Introduction to Random Variables and Random Processes* Spring 2024

Teaching Assistant @ Yonsei University

- *Deep Learning - Theory and Practice* Fall 2022, Spring 2023, Fall 2023

Teaching Assistant @ LG Electronics

- *AI Advanced Course for CTO (Object Detection, Continual Learning)* Jul. 2023

Teaching Assistant @ Samsung Electronics

- *AI Expert Program (Continual Learning)* Jul. 2022, Jul. 2023, Sept. 2024
- *AI Expert Program (Object Detection)* Jul. 2023

Teaching Assistant @ Samsung Advanced Technology Training Institute

- *AI Academy for Application - Vision (Object Detection, Continual Learning)* Aug. 2022, Dec. 2022, Jul. 2023

Teaching Assistant @ Gwangju Institute of Science and Technology

- *Machine Learning and Deep Learning* Spring 2021

Presentation

- Poster presentation (Embodied AI) @ AI SEOUL 2024 Feb. 2024
- Invited talk (Embodied AI) @ LG AI Research Jun. 2023
- Invited talk (Embodied AI) @ Electronic & Information Research Information Center May 2023

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

Jonghyun Choi, **Byeonghwi Kim**, Jinyeon Kim, Cheolhong Min, Yuyeong Kim
KR 10-2675973-0000

References

References will be provided upon request.