

# Taewoong Kim

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## ★ Research Interests

Embodied AI, Multimodal learning, Few-shot/zero-shot learning, Reinforcement learning

## 🎓 Education

**Yonsei University** Mar. 2023 – Aug. 2024

*M.S. in Artificial Intelligence* (Advisor: Prof. Jonghyun Choi)

- Overall GPA: 4.04/4.3
- Relevant Coursework : Multimodal Deep Learning, Machine Learning and Programming

**Yonsei University** Mar. 2016 – Aug. 2023

*B.S. in Mechanical Engineering*

- Major GPA: 4.16/4.3, Overall GPA: 3.83/4.3
- Relevant Coursework : Dynamics, Mechatronics, Mechanical System Control, Intelligent Control

## 📄 Research Papers

**A paper about zero-shot affordance grounding using GenAI** Under Review

*B. Kim, T. Kim, J. Nam, J. Min, J. Kim, J. Kim, H. Kim, H. Jeon, J. Choi*

**Multi-Modal Grounded Planning and Efficient Replanning For Learning Embodied Agents with A Few Examples** AAAI 2025  
(to appear)

*T. Kim, B. Kim, J. Choi*

**ReALFRED: An Embodied Instruction Following Benchmark in Photo-Realistic Environments** ECCV 2024

*T. Kim\*, C. Min\*, B. Kim, J. Kim, W. Jeong, J. Choi*

**ECLAIR: Event-Cognizant Language Interaction Embodied Robots** Workshop on LA4IRA  
IEEE RO-MAN 2023

*J. Kim, B. Kim, C. Min, Y. Kim, T. Kim, J. Choi*

## 📖 Research Experience

**SNU Machine Perception and Reasoning Lab** **Seoul National University**  
Sep. 2024 – Current

*Research Assistant* (Advisor: Prof. Jonghyun Choi)

- **Zero-shot affordance grounding**
  - Implemented image generation models to achieve zero-shot affordance grounding
  - Developed a framework that treats occlusions as interaction signals to identify affordance regions

**Yonsei Vision & Learning Lab** **Yonsei University**  
Mar. 2023 – Aug. 2024

*Graduate Research Assistant* (Advisor: Prof. Jonghyun Choi)

- **Large language models (LLMs) as few-shot planners for embodied agents**
  - Developed a multimodal planner with LLM for enhanced grounded planning capabilities
  - Designed an efficient replanning system that corrects partially misleading subgoals
- **Bridging the reality gap**
  - Proposed a photo-realistic benchmark with 3D-captured indoor scenes with interactive objects

## 🏢 Work Experience

**Samsung Electronics** **Suwon, Korea**  
Sep. 2022 - Jan. 2023

*Full-Time Engineer, Robot Business Team*

- Designed and developed mechanical components for exoskeleton robot

**Samsung Electronics** **Suwon, Korea**  
July. 2021 - Aug. 2021

*Intern, Mobile Experience Divison*

- Conducted personal project about foldable mobile devices

## Honors and Awards

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<b>Outstanding Paper Award (Silver Prize), IPIU 2024</b>	<i>Feb. 2024</i>
<b>1st Place Award, CVPRW 2023 Embodied AI Workshop Challenge</b>	<i>June 2023</i>
<b>Academic High Honors Award, Yonsei University</b>	<i>Fall 2019, Fall 2020</i>
<b>Academic Honors Award, Yonsei University</b>	<i>Spring 2019</i>
<b>Academic Scholarship, Gwacheon City</b>	<i>Spring 2020 - Fall 2020</i>
<b>Volunteer Scholarship, Yonsei University</b>	<i>Spring 2019 - Fall 2019</i>
<b>Veritas (Academic) Scholarship, Yonsei University</b>	<i>Fall 2019, Spring 2019, 2020, 2021, 2022</i>

## Leadership Experience

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<b>School of Mechanical Engineering at Yonsei University</b>	<i>Dec. 2018 - Dec. 2019</i>
<i>56th Student President</i>	
<ul style="list-style-type: none"><li>Organized, led, and made decisions for the department and student council</li></ul>	
<b>Military Service for Republic of Korea</b>	<i>Apr. 2017 - Jan. 2019</i>
<i>Sergeant</i>	
<ul style="list-style-type: none"><li>Served as machine gun shooter at The 17th Infantry Division, Republic of Korea Army</li></ul>	

## Teaching Experience

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<b>Teaching Assistant, Seoul National University</b>	<i>Fall 2024</i>
<i>TA for graduate AI seminar</i>	
<ul style="list-style-type: none"><li>Managed and addressed students' requests</li></ul>	

## Volunteer Experience

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<b>Korean University Mentors Union</b>	<i>Sept. 2020 - Feb. 2021</i>
<i>Mentor</i>	
<ul style="list-style-type: none"><li>Conducted major-specific information sessions and addressed high school students' questions</li></ul>	

## Academic Services

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**Reviewer:** RO-MAN'24

## Skills

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<b>Languages</b>	Korean (Native), English (Fluent)
<b>Programming</b>	Python, C, MATLAB
<b>CAD/CAE</b>	NX, Ansys, PTC Creo
<b>General</b>	GitHub, LaTeX, PyTorch