

Gi-Cheon Kang

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EDUCATION	Seoul National University Ph.D. in Artificial Intelligence <i>Advisor:</i> Prof. Byoung-Tak Zhang <i>Thesis:</i> Embodied language agents for real-world robotic tasks: visually-grounded interaction & skill learning	Seoul, Korea Sept. 2020 – Feb. 2025
	Seoul National University M.S. in Cognitive Science <i>Advisor:</i> Prof. Byoung-Tak Zhang	Seoul, Korea Mar. 2018 – Feb. 2020
	Ajou University B.Eng. in Software and Computer Engineering	Suwon, Korea Mar. 2011 – Feb. 2018
INTERESTS	Machine Learning, Robot Learning, Natural Language Processing My research lies at the intersection of robot learning and natural language processing, where I explore how language can be used to teach robots and improve human-robot interaction. <ul style="list-style-type: none">• Language-driven robotics: Developing (1) vision-language-action (VLA) models that learn visuomotor policies from natural language supervision [6], and (2) robots that perform real-world tasks through language interaction with humans [13, 14, 11]• Visually-grounded interaction: Building vision-and-language models (VLMs) that can continuously communicate with humans about images [12, 10, 7] and videos [9]	
EXPERIENCE	AI Institute for SNU (AIIS) Postdoctoral Researcher <i>Hosts:</i> Jun Ki Lee and Byoung-Tak Zhang Studying foundation models for robotics.	Seoul, Korea March. 2025 – Sept. 2025 (expected)
	SNU-NAVER Hyperscale AI Center Student Researcher <i>Hosts:</i> Jin-Hwa Kim, Sungdong Kim, and Donghyun Kwak Studied a semi-supervised learning approach for visual dialog. Published at CVPR 2023.	Seoul, Korea Sept. 2021 – May 2022
	Seoul National University (SNU) Research Assistant <i>Advisor:</i> Byoung-Tak Zhang I have studied machine learning algorithms that connect natural language to perception and action. Developed interactive robots, grasping desired objects through dialog with users (ICRA 2024 Oral) and a lifelong learning framework for robots to adapt to real-world environments without human supervision (IROS 2023 Oral). Currently studying how non-experts can teach robotic skills only through natural language (CoRLW 2024).	Seoul, Korea Sept. 2020 – Feb. 2025
	SK T-Brain Research Intern <i>Hosts:</i> Jin-Hwa Kim and Hwaran Lee Worked on discovering sparse structures in visual dialog. Published at Findings of EMNLP 2021.	Seoul, Korea Jan. 2020 – March. 2020
	HONORS & AWARDS Youlchon AI Star Fellowship IPAI Ph.D. Fellowship Daeha Scholarship Ranked 3rd Place, Visual Dialog Challenge @ CVPR 2019 Software-Centered University Hackathon, Prize from Microsoft Korea Yeoju Honor Scholarship	Aug. 2024 May 2024 May 2022 June 2019 Sept. 2017 May 2016

**SELECTED
PUBLICA-
TIONS**

- [15] **Socratic Planner: Self-QA-Based Zero-Shot Planning for Embodied Instruction Following**
Suyeon Shin, Sujin Jeon*, Junghyun Kim*, Gi-Cheon Kang*, Byoung-Tak Zhang
IEEE International Conference on Robotics and Automation (ICRA), 2025
- [14] **PGA: Personalizing Grasping Agents with Single Human-Robot Interaction**
Junghyun Kim, Gi-Cheon Kang*, Jaein Kim*, Seoyoon Yang, Minjoon Jung, Byoung-Tak Zhang
IEEE/RSJ International Conference on Intelligent Robots and Systems, (IROS), 2024
- [13] **PROGrasp: Pragmatic Human-Robot Communication for Object Grasping**
Gi-Cheon Kang, Junghyun Kim, Jaein Kim, Byoung-Tak Zhang
IEEE International Conference on Robotics and Automation (ICRA), 2024 **(Oral)**
- [12] **The Dialog Must Go On: Improving Visual Dialog via Generative Self-Training**
Gi-Cheon Kang, Sungdong Kim*, Jin-Hwa Kim*, Donghyun Kwak*, Byoung-Tak Zhang
IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR), 2023
- [11] **GVCCI: Lifelong Learning of Visual Grounding for Language-Guided Robotic Manipulation**
Junghyun Kim, Gi-Cheon Kang*, Jaein Kim*, Suyeon Shin, Byoung-Tak Zhang
IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), 2023 **(Oral)**
- [10] **Reasoning Visual Dialog with Sparse Graph Learning and Knowledge Transfer**
Gi-Cheon Kang, Junseok Park, Hwaran Lee, Byoung-Tak Zhang*, Jin-Hwa Kim*
Findings of Empirical Methods in Natural Language Processing (EMNLP Findings), 2021
- [9] **Attend What You Need: Motion-Appearance Synergistic Networks for Video Question Answering**
Ahjeong Seo, Gi-Cheon Kang, Joonhan Park, Byoung-Tak Zhang
Annual Meeting of the Association for Computational Linguistics (ACL), 2021
- [8] **Label Propagation Adaptive Resonance Theory for Semi-Supervised Continuous Learning**
Taehyeong Kim, Injune Hwang, Gi-Cheon Kang, Won-Seok Choi, Hyunseo Kim, Byoung-Tak Zhang
IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP), 2020
- [7] **Dual Attention Networks for Visual Reference Resolution in Visual Dialog**
Gi-Cheon Kang, Jaeseo Lim, Byoung-Tak Zhang
Conference on Empirical Methods in Natural Language Processing (EMNLP), 2019

**WORKSHOP
PAPERS**

- [6] **CLIP-RT: Learning Language-Conditioned Robotic Policies from Natural Language Supervision**
Gi-Cheon Kang*, Junghyun Kim*, Kyuhwan Shim, Junki Lee†, Byoung-Tak Zhang†
CoRL Workshop on Language and Robot Learning (LangRob), 2024
- [5] **Generative Self-training Improves Pre-training for Visual Dialog**
Gi-Cheon Kang, Sungdong Kim*, Jin-Hwa Kim*, Donghyun Kwak*, Byoung-Tak Zhang
ICML Workshop on Pre-training: Perspectives, Pitfalls, and Paths Forward (ICMLW), 2022
- [4] **Improving Robustness to Texture Bias via Shape-focused Augmentation**
Sangjun Lee, Inwoo Hwang, Gi-Cheon Kang, Byoung-Tak Zhang
CVPR Workshop on Human-centered Intelligent Services: Safety and Trustworthy (CVPRW), 2022

	<p>[3] C³: Contrastive Learning for Cross-domain Correspondence in Few-shot Image Generation Hyukgi Lee, Gi-Cheon Kang, Chang-Hoon Jeong, Hanwool Sul, Byoung-Tak Zhang <i>NeurIPS Workshop on Controllable Generative Modeling in Language and Vision (NeurIPSW)</i>, 2021</p>	
	<p>[2] Contextualized Bilinear Attention Networks Gi-Cheon Kang, Seonil Son, Byoung-Tak Zhang <i>ECCV Workshop on VizWiz Grand Challenge (ECCVW)</i>, 2018</p>	
PREPRINTS	<p>[1] Continual Vision-and-Language Navigation Seongjun Jeong, <u>Gi-Cheon Kang</u>, Seongho Choi, Joochan Kim, Byoung-Tak Zhang <i>arXiv Preprint</i>, 2024</p>	
INVITED TALKS	<p><i>PROGrasp: Pragmatic Human-Robot Communication for Object Grasping</i> IEEE International Conference on Robotics and Automation (ICRA) May 2024</p> <p><i>The Evolution of Language Models: From Basic NLP to ChatGPT and Beyond</i> Dept. of Energy Resources Engineering, Seoul National University Nov. 2023</p> <p><i>The Dialog Must Go On: Improving Visual Dialog via Generative Self-Training</i> IEEE RO-MAN Workshop on Learning by Asking for Intelligent Robots and Agents Aug. 2023</p> <p><i>Reasoning Visual Dialog with Sparse Graph Learning and Knowledge Transfer</i> KSC 2021 - Top-tier Conference Paper Presentation Session Dec. 2021 Annual Conference on Human and Cognitive Language Technology Oct. 2021</p> <p><i>Dual Attention Networks for Visual Reference Resolution in Visual Dialog</i> ICCV 2019 - Video Turing Test Workshop Nov. 2019 SK Telecom AI Center Sept. 2019</p>	
SERVICES	<p>Reviewing</p> <p>(ML) Neural Information Processing Systems (NeurIPS) 2023 – 2024 (ML) International Conference on Machine Learning (ICML) 2024 – 2025 (ML) International Conference on Learning Representations (ICLR) 2024 – 2025 (AI) AAAI Conference on Artificial Intelligence (AAAI) 2025 (NLP) ACL Rolling Review (ARR) 2024 – 2025 (NLP) Annual Meeting of the Association for Computational Linguistics (ACL) 2023 – 2024 (NLP) Empirical Methods in Natural Language Processing (EMNLP) 2022 – 2023 (Robotics) IEEE Robotics and Automation Letters (RA-L) 2024 (Robotics) IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS) 2024 (Workshop) CoRL Workshop on Language and Robot Learning (LangRob) 2024 (Workshop) ICLR Workshop on Reliable and Responsible Foundation Models 2024 (Workshop) ICML Workshop on Pre-training: Perspectives, Pitfalls, and Paths Forward 2022</p>	
EXTRA CURRICULAR ACTIVITIES	<p>BI Lab Tennis Club 2023 – Present BI Lab Conference Deadline Site Administrator 2018 – Present Military Service in Republic of Korea Army 2012 – 2014</p>	