Gi-Cheon Kang

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EDUCATION	**Seoul National University**	Seoul, Korea
	Ph.D. in Artificial Intelligence	Sept. 2020 – Feb. 2025 (expected)

Advisor: Prof. Byoung-Tak Zhang
Thesis: Embodied language agents for real-world robotic tasks: visually-grounded interaction & skill learning
Committee: Jaeheung Park, Gunhee Kim, Jonghyun Choi, and Jin-Hwa Kim

	Seoul National University	Seoul, Korea
	M.S. in Cognitive Science	Mar. 2018 – Feb. 2020

Advisor: Prof. Byoung-Tak Zhang

	Ajou University	Suwon, Korea
	B.Eng. in Software and Computer Engineering	Mar. 2011 – Feb. 2018

INTERESTS Machine Learning, Natural Language Processing, Computer Vision, Robotics
My focus is connecting language with perception and action, enabling machines to understand the semantics of the physical world. Specific topics include:

- **Embodied AI**: Vision-language-action (VLA) models for generalist manipulation policies [5] or robots performing real-world tasks through language interaction [12, 13, 10]
- **Multimodal AI**: Vision-language models (VLMs) that can continuously communicate with humans about images [11, 9, 6] and videos [8]

EXPERIENCE	**SNU-NAVER Hyperscale AI Center**	Seoul, Korea
	Student Researcher	Sept. 2021 – May 2022

Hosts: Jin-Hwa Kim, Sungdong Kim, and Donghyun Kwak
Studied a semi-supervised learning approach for visual dialog. Published at CVPR 2023.

	Seoul National University (SNU)	Seoul, Korea
	Research Assistant	Sept. 2020 – Present

Advisor: Prof. 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).

	SK T-Brain	Seoul, Korea
	Research Intern	Jan. 2020 - March. 2020

Hosts: Jin-Hwa Kim and Hwaran Lee
Worked on discovering sparse structures in visual dialog. Published at Findings of EMNLP 2021.

HONORS &	Youlchon AI Star Fellowship	Aug. 2024
AWARDS	IPAI Ph.D. Fellowship	May 2024
	Daeha Scholarship	May 2022
	Ranked 3rd Place, Visual Dialog Challenge @ CVPR 2019	June 2019
	Software-Centered University Hackathon, Prize from Microsoft Korea	Sept. 2017
	Yeoju Honor Scholarship	May 2016

SELECTED PUBLICATIONS

[13] **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

[12] **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)**

[11] **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

[10] **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)**

[9] **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

[8] **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

[7] **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

[6] **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
ICCV Workshop on Video Turing Test (VTT), 2019 **(Spotlight Talk)**

WORKSHOP PAPERS

[5] **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

[4] **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

[3] **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

[2] C^3**: Contrastive Learning for Cross-domain Correspondence in Few-shot Image Generation**
Hyukgi Lee, Gi-Cheon Kang, Chang-Hoon Jeong, Hanwool Sul, Byoung-Tak Zhang
NeurIPS Workshop on Controllable Generative Modeling in Language and Vision (NeurIPSW), 2021

[1] **Contextualized Bilinear Attention Networks**
Gi-Cheon Kang, Seonil Son, Byoung-Tak Zhang
ECCV Workshop on VizWiz Grand Challenge (ECCVW), 2018

INVITED TALKS	*PROGrasp: Pragmatic Human-Robot Communication for Object Grasping* IEEE International Conference on Robotics and Automation (ICRA)	May 2024
	The Evolution of Language Models: From Basic NLP to ChatGPT and Beyond Dept. of Energy Resources Engineering, Seoul National University	Nov. 2023
	The Dialog Must Go On: Improving Visual Dialog via Generative Self-Training IEEE RO-MAN Workshop on Learning by Asking for Intelligent Robots and Agents	Aug. 2023

	Reasoning Visual Dialog with Sparse Graph Learning and Knowledge Transfer
	    KSC 2021 - Top-tier Conference Paper Presentation Session
	    Annual Conference on Human and Cognitive Language Technology
		Dec. 2021
		Oct. 2021

	Dual Attention Networks for Visual Reference Resolution in Visual Dialog
	    ICCV 2019 - Video Turing Test Workshop
	    SK Telecom AI Center
		Nov. 2019
		Sept. 2019

SERVICES	**Reviewing**	
	(ML) Neural Information Processing Systems (NeurIPS)	2023 – 2024
	(ML) International Conference on Machine Learning (ICML)	2024
	(ML) International Conference on Learning Representations (ICLR)	2024 – 2025
	(AI) AAAI Conference on Artificial Intelligence (AAAI)	2025
	(NLP) ACL Rolling Review (ARR)	2024
	(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) ICLR Workshop on Reliable and Responsible Foundation Models	2024
	(Workshop) ICML Workshop on Pre-training: Perspectives, Pitfalls, and Paths Forward	2022

EXTRA CURRICULAR ACTIVITIES	BI Lab Tennis Club	2023 – Present
	BI Lab Conference Deadline Site Administrator	2018 – Present
	Military Service in Republic of Korea Army	2012 – 2014