

# Gi-Cheon Kang

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| <b>Contact Information</b> | 205, Building 942<br>Seoul National University<br>1, Gwanak-ro, Gwanak-gu,<br>Seoul 08826, Republic of Korea   | <i>email:</i> chonkang@snu.ac.kr<br><i>website:</i> gicheonkang.com |
| <b>Education</b>           | <b>Seoul National University</b><br>Ph.D. Student in Artificial Intelligence<br><i>Advisor:</i> Prof. Byoung-Tak Zhang   | Seoul, Korea<br>Sept. 2020 – Present                                |
|                            | <b>Seoul National University</b><br>M.S. in Cognitive Science<br><i>Advisor:</i> Prof. Byoung-Tak Zhang<br><i>Thesis:</i> Deep Representation Learning for Visually-Grounded Dialogue  | Seoul, Korea<br>Mar. 2018 – Feb. 2020                               |
|                            | <b>Ajou University</b><br>B.Eng. in Software and Computer Engineering  | Suwon, Korea<br>Mar. 2011 – Feb. 2018                               |
| <b>Interests</b>           | Machine Learning, Natural Language Processing, Computer Vision, Robotics<br>Mostly, I am focusing on modeling algorithms that learn the physical world with natural language<br>The long-term goal of my research is to build machines that can <ul style="list-style-type: none"><li>• perceive their everyday surroundings through vision or other senses,</li><li>• communicate with humans via grounded natural language,</li><li>• make reliable decisions using language, vision, etc.</li></ul> |   |
| <b>Research Experience</b> | <b>SNU-NAVER Hyperscale AI Center</b><br>Student Researcher<br><i>With Dr. Jin-Hwa Kim and Sungdong Kim</i><br>Studied a semi-supervised learning approach for visual dialog, Generative Self-Training, which generates synthetic visual dialog data and trains a model on the data. Published at CVPR 2023.   | Seoul, Korea<br>Sept. 2021 – May 2022                               |
|                            | <b>Seoul National University (SNU)</b><br>Research Assistant<br><i>With Prof. Byoung-Tak Zhang</i><br>I have studied “grounded language learning”, which aims to connect language to non-linguistic experiences in the physical world, such as sensory perception and action. Recent research focuses on developing embodied dialog agents that can see, talk, and act.  | Seoul, Korea<br>Sept. 2020 – Present                                |
|                            | <b>SK Telecom AI Center</b><br>Research Intern<br><i>With Dr. Jin-Hwa Kim and Dr. Hwaran Lee</i><br>Developed Sparse Graph Learning (SGL) algorithm that discovers inherently sparse semantic structures of the human conversation. Published at Findings of EMNLP 2021.   | Seoul, Korea<br>Jan. 2020 - March. 2020                             |
| <b>Honors &amp; Awards</b> | Daeha Scholarship<br>Ranked 3rd Place, Visual Dialog Challenge @ CVPR 2019<br>Software-Centered University Hackathon, Prize from Microsoft Korea<br>Yeoju Honor Scholarship  | May 2022<br>June 2019<br>Sept. 2017<br>May 2016                     |

- Preprints**
- [12] **PGA: Learning Personal Objects with Single Human-Robot Interaction**  
Junghyun Kim, Gi-Cheon Kang\*, Jaein Kim\*, Seoyoon Yang, Minjoon Jung, Byoung-Tak Zhang  
*arXiv preprint 2310.12547*, 2023
  - [11] **PROGrasp: Pragmatic Human-Robot Communication for Object Grasping**  
Gi-Cheon Kang, Junghyun Kim, Jaein Kim, Byoung-Tak Zhang  
*arXiv preprint 2309.07759*, 2023
- Conference Publications**
- [10] **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
  - [9] **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 Presentation**
  - [8] **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
  - [7] **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
  - [6] **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
  - [5] **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**
- [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<sup>3</sup>: 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

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| <b>Invited<br/>Talks</b>                   | <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      |
|  | <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      |
| <b>Professional<br/>Activities</b>         | <i>Dual Attention Networks for Visual Reference Resolution in Visual Dialog</i>    |                |
|  | ICCV 2019 - Video Turing Test Workshop ( <b>Spotlight</b> )                        | Nov. 2019      |
|  | SK Telecom AI Center   | Sept. 2019     |
|  | <b>Reviewing</b>   |                |
|  | (ML) International Conference on Learning Representations (ICLR)                   | 2024           |
| <b>Extra<br/>Curricular<br/>Activities</b> | (ML) Neural Information Processing Systems (NeurIPS)                               | 2023           |
|  | (NLP) Annual Meeting of the Association for Computational Linguistics (ACL)        | 2023           |
|  | (NLP) Empirical Methods in Natural Language Processing (EMNLP)                     | 2022 – 2023    |
|  | BI Lab Conference Deadline Site Administrator                                      | 2018 – Present |
|  | Military Service in Republic of Korea Army   | 2012 – 2014    |