


NOKYUNG PARK

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EDUCATION

Korea university Seoul, South Korea Master student in Computer Science and Engineering GPA: 4.5 / 4.5 <i>Advisor: Prof. Jinkyu Kim</i>	Seoul, South Korea Mar 2022 -
Korea University Bachelor in Computer Science and Engineering Major GPA: 4.33 / 4.5, Cummlative GPA: 4.22 / 4.5	Seoul, South Korea Mar 2018 - Feb 2022

RESEARCH EXPERIENCE

Vision and AI Lab, Korea University <ul style="list-style-type: none">• Master Student (<i>Advisor: Prof. Jinkyu Kim</i>)• Researching on Domain Generalization• Participating in “<i>Bridging the Domain Gap by Clustering-based Image-Text Graph Matching (Under Review Status)</i>”	Mar 2022 -
NAVER Cloud, NAVER Corp. <ul style="list-style-type: none">• Worked for the Information Extraction team• Researching on Scene Graph Generation• Participating in “<i>EGTR: Extract Graph from Transformer for Scene Graph Generation (Under Review Status)</i>”	Sep 2022 - Mar 2023
Vision and AI Lab, Korea University <ul style="list-style-type: none">• Undergraduate Researcher (<i>Advisor: Prof. Jinkyu Kim</i>)• Researching on Domain Generalization• Participating in “<i>Grounding Visual Representations with Texts for Domain Generalization (ECCV 2022)</i>”	Jul 2021 - Feb 2022

TECHNICAL SKILLS

Programming Language:	Python3, C, JAVA, Shell Script
Tools:	PyTorch, TensorFlow, Linux, Git
Courses:	Computer Vision, Pattern Recognition, Artificial Intelligence, Machine Learning, Deep Learning, Natural Language Processing, Data Science, Linear Algebra, Probability and Statistics, Data Structure, Algorithm, Discrete Mathematics

INTEREST FIELDS

- **Domain Generalization.** When there is a difference in distribution between the training dataset and the test dataset, domain shift can occur, leading to a significant decrease in performance. Domain generalization is an essential area of research that seeks to mitigate this issue by developing models that can generalize well to unseen domains. This is crucial because it is impractical to collect data for all possible domains that exist in the world.

- **Multimodal Learning.** Just as humans use different senses to understand the world, by multimodal learning, deep learning models can process multiple types of data simultaneously, such as images and text. This helps us create more powerful models that better understand the relationships between different types of data.

PUBLICATION

EGTR: Extract Graph from Transformer for Scene Graph Generation

Under Review

Jinbae Im, Jeongyeon Nam, **Nokyung Park**, Hyungmin Lee, Seunghyun Park

This paper proposes lightweight Scene Graph Generation model which extracts relation graphs from the various relationships learned in each layer and head of the DETR decoder. By utilizing the self-attention of the DETR decoder, the relation graph can be effectively extracted. The proposed methodology outperforms state-of-the-art models on the Visual Genome and Open Image V6 datasets.

Bridging the Domain Gap by Clustering-based Image-Text Graph Matching

ICMLW 2023

Nokyung Park, Daewon Chae, Jeong Yong SHIM, Sangpil Kim, Eun-Sol Kim, Jinkyu Kim

This paper proposes a (image-text) multimodal graph representation approach to learn domain-invariant pivot embeddings for domain generalization problems. By representing image and text descriptions as graphs and clustering and matching image node features into textual graphs, the model can achieve state-of-the-art performance on large-scale public datasets, CUB-DG.

Grounding Visual Representations with Texts for Domain Generalization

ECCV 2022

Seonwoo Min, **Nokyung Park**, Siwon Kim, Seunghyun Park, Jinkyu Kim

This paper proposes a novel approach to domain generalization using natural language supervision. It includes a Visual and Textual Joint Embedder and a Textual Explanation Generator to learn image-text representations and generate explanations. The approach achieves state-of-the-art performance on CUB-DG and DomainBed benchmarks.

PROJECTS

Domain Generalization with Well-defined Pair

Apr 2022 - Jun 2022

- A project conducted in the Pattern Recognition course (AAA619)
- Modifying the dataloader to apply contrastive loss to the well-defined pair
- By simple modification of data loader and applying contrastive loss, can achieve good performance as MixUp and DANN without additional complex networks.
- **Tech Skills:** Python3, Pytorch, Computer Vision, Domain Generalization
- **Github:** [noparkee/DG-Pair](#)

Recolorization for Color Vision Deficiency

Apr 2022 - Jun 2022

- A project conducted in the Moonshot project course (AAA744)
- Designed filters for CVD to distinguish colors well.
- **Tech Skills:** Python3, Pytorch, Computer Vision

Speech Emotion Recognition with Text Features

Sep 2021 - Nov 2021

- A project conducted in the Natural Language Processing course (COSE461)
- About the importance of text information in the field of Speech Emotion Recognition.
- **Tech Skills:** Python3, Pytorch, Natural Language Process
- **Github:** [noparkee/Natural-Language-Process-Team-Project](#)

Currency Recognition Service for the Blind

Sep 2021 - Nov 2021

- A project conducted in the Capstone Design course (COSE489)

- Designed a model used in the app that tells the blind how much money it is when they show bills or coins with their cell phone cameras.
- **Tech Skills:** Python3, Pytorch, Computer Vision
- **Github:** [noparkee/Capstone-Design](#)

Smart Campus (COVID-19 Dashboard)

Jun 2021 - Nov 2021

- Made the dash board contents related to COVID-19.
- Collected data using API and analyzed the acquired data to get some hidden meaning
- Defined an equation for the risk of local districts was calculated through congestion or public transportation traffic.
- Defined an equation for the individual's risk of covid-19, using the route of movement, activity content, and the surrounding covid-19 situation.
- **Tech Skills:** Python3, Pytorch, Data Analysis

Junior Software Heroes

Jul 2020 - Sep 2020

- Acted as a mentor to SmartEcoSystem team.
- Informed the students in the SmartEcoSystem team that how get information from various sensor parts of Arduino, and make simple predictions (temperature of the next time step, etc.) through the information they got.
- **Tech Skills:** Python3, Tensorflow, Arduino
- **Github:** [noparkee/KUGifted](#)

AWARD/SCHOLARSHIP

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|---|------|
| • Excellence Award (Capstone-Design) | 2021 |
| • Scholarship for Outstanding Performance | 2020 |

EXTRA ACTIVITY

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|---|---------------------|
| • Computer Programming I (COSE101) Teaching Assistant | Mar 2023 - |
| • Computer Architecture (COSE222) Teaching Assistant | Mar 2022 - Jun 2022 |
| • App mentor of e-ICON World Contest | Jul 2020 - Sep 2020 |