Kibum Kim

PH.D STUDENT

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Experience with Computer Vision/LLM

Computer Vision (Multimodal Learning)

- I have primarily conducted research in scene graph generation task in the computer vision [3][5][7][8][10], which is highly related to multimodal learning. Recently, I expanded my research to the video domain [11], especially on video scene graph generation task.
- (**Ongoing Work**), I am exploring ways to improve compositional reasoning in the video domain by integrating video scene graphs with *video-language* models, aiming to enhance the understanding of interactions between humans and objects.

LLM

- In scene understanding (i.e., scene graph generation task) within computer vision, I have experience in leveraging LLMs to jointly address long-tail challenges and improve data scalability. [7]
- (**Recent Work**), I have been working with open-source Large Language Models (e.g., LLaMA-3-8B) to develop a foundational model for personalization, specifically focusing on *Multimodal Large Language Model*-based recommender systems [13][14].

Research Interest

Machine Learning/Deep Learning

SCENE UNDERSTANDING, RECOMMENDATION SYSTEM, GRAPH NEURAL NETWORKS

- With the advancement of machine learning, fundamental challenges continue to arise, compromising the model's generalizability. In this regard, my research aims to address the fundamental challenges to improve the generalization power of the model. The fundamental challenges of interest, but are not limited, are the following:
  - *Long-tailedness*: [2], [3], [4], [5], [7], [8], [10]
  - *Data Scarcity*: [7], [11]
  - *Adversarial Attacks*: [6], [9], [12]
- As fundamental challenges arise across various domains, my research areas are diverse and include the following:
  - *Image/Video Scene Understanding*
  - *Recommender Systems*
  - *Graph Neural Networks*

Education

Korea Advanced Institute of Science and Technology (KAIST) — *Daejeon, South Korea*

PH.D IN INDUSTRIAL & SYSTEMS ENGINEERING — *Sep 2023 - Present*

- Research Interest: Scene Understanding, Recommender systems, Large Language Model
- Advisor: Prof. Chanyoung Park

Korea Advanced Institute of Science and Technology (KAIST) — *Daejeon, South Korea*

M.S IN INDUSTRIAL & SYSTEMS ENGINEERING — *Aug 2021 - Jul 2023*

- Research Interest: Scene Understanding, Recommender systems, Graph Neural Network
- Advisor: Prof. Chanyoung Park

Hanyang University — *Seoul, South Korea*

B.S. IN INDUSTRIAL ENGINEERING — *Mar 2016 - Jul 2021*

- GPA: 4.09/4.5
- Early Graduation
- The period includes two years of military service, required for all Korean men

Publications

Preprint

[15] (Under Review at ARR'25) Yeonjun In, Wonjoong Kim, Kanghoon Yoon, Sungchul Kim, Mehrab Tanjim, Kibum Kim, Chanyoung Park. Is Safety Standard Same for Everyone? User-Specific Safety Evaluation of Large Language Models [Paper] [Code]

[14] (Under Review at KDD'25) Sein Kim, HongSeok Kang, Kibum Kim, Jiwan Kim, Donghyun Kim, Minchul Yang, Kwangjin Oh, Julian McAuley, Chanyoung Park. Lost in Sequence: Do Large Language Models Understand Sequential Recommendation? [Paper] [Code]

[13] (Under Review at KDD'25) Kibum Kim, Sein Kim, HongSeok Kang, Jiwan Kim, Heewoong Noh, Yeonjun In, Kanghoon Yoon, Jinoh Oh, Chanyoung Park. Image is All You Need: Towards Efficient and Effective Large Language Model-Based Recommender Systems.

[12] (Under Review at ICML'25) Yeonjun In, Kanghoon Yoon, Sukwon Yun, Kibum Kim, Sungchul Kim, Chanyoung Park. Noise Robust Graph Learning under Feature-Dependent Graph-Noise.

Conference

[11] (**ICLR 2025**) Kibum Kim, Kanghoon Yoon, Yeonjun In, Jaehyeong Jeon , Jinyoung Moon, Donghyun Kim, Chanyoung Park. Weakly supervised Video Scene Graph Generation with Natural Language Supervision. [Paper]

[10] (**AAAI 2025**) Kanghoon Yoon, Kibum Kim, Jaehyeong Jeon, Yeonjun In, Donghyun Kim, Chanyoung Park. ReTAG: Retrieval-Augmented Scene Graph Generation via Multi-Prototype Learning. The 39th Association for the Advancement of Artificial Intelligence. [Paper] [Code]

[9] (**CIKM 2024**) Kanghoon Yoon, Yeonjun In, Namkyeong Lee, Kibum Kim, Chanyoung Park. Debiased Graph Poisoning Attack via Contrastive Surrogate Objective. ACM International Conference on Information and Knowledge Management.[Paper] [Code]

[8] (**ECCV 2024**) Jaehyeong Jeon, Kibum Kim, Kanghoon Yoon, Chanyoung Park. Semantic Diversity-aware Prototye-based Learning for Unbiased Scene Graph Generation. The 18th European Conference on Computer Vision ECCV 2024. [Paper] [Code]

[7] (**CVPR 2024**) Kibum Kim, Kanghoon Yoon, Jaehyeong Jeon, Yeonjun In, Jinyoung Moon, Donghyun Kim, Chanyoung Park. LLM4SGG: Large Language Model for Weakly Supervised Scene Graph Generation. [Paper] [Code]

[6] (**WWW 2024 (Oral)**) Yeonjun In, Kanghoon Yoon, Kibum Kim, Kijung Shin, Chanyoung Park. Self-guided Robust Graph Structure Refinement. The 2024 ACM Web Conference. [Paper] [Code]

[5] (**ICLR 2024**) Kibum Kim*, Kanghoon Yoon*, Yeonjun In, Jinyoung Moon, Donghyun Kim, Chanyoung Park. Adaptive Self-training Framework for Fine-grained Scene Graph Generation. The Twelfth International Conference on Learning Representations. [Paper] [Code]

[4] (**SIGIR 2023**) Kibum Kim, Dongmin Hyun, Sukwon Yun, Chanyoung Park. MELT: Mutual Enhancement of Long-Tailed User and Item for Sequential Recommendation. The 46th International ACM SIGIR Conference on Research and Development in Information Retrieval. [Paper] [Code]

[3] (**AAAI 2023**) Kanghoon Yoon*, Kibum Kim*, Jinyoung Moon, Chanyoung Park. Unbiased Heterogeneous Scene Graph Generation with Relation-aware Message Passing Neural Network. Proceedings of the AAAI Conference on Artificial Intelligence 2023. [Paper] [Code]

[2] (**CIKM 2022**) Sukwon Yun, Kibum Kim, Kanghoon Yoon, Chanyoung Park. LTE4G: Long-Tail Experts for Graph Neural Networks. Proceedings of the 31st ACM International Conference on Information & Knowledge Management. [Paper] [Code]

Workshop

[1] (**WWW'24 (Oral)**) Yeonjun In, Kanghoon Yoon, Sukwon Yun, Kibum Kim, Sungchul Kim, Chanyoung Park. Noise Robust Graph Learning under Feature-Dependent Graph-Noise. The Web Conference, Data-Centric Artificial Intelligence (DCAI) Workshop.

Projects

2024.06-Present **NAVER·Intel·KAIST (NIK) AI Collaboration Project for building a new AI ecosystem**
Collaboration with NAVER & Intel

2022.06-Present **AI Development for reasoning, extraction, understanding of common-sense**
Collaboration with **I**nstitute for **I**nformation & communications **T**echnology **P**lanning & evaluation (IITP)

2021.06-Present **Visual Intelligence Technique Development**
Collaboration with **E**lectronics and **T**elecommunications **R**esearch **I**nstitute (ETRI)

2020.12-2021.06 **Recommending Financial Product based on Graph Embeddings**
Collaboration with Hana Bank

Awards & Scholarship

2022 **Poster Competition Excellence Award**
Awarded at Industrial/Social Problem Solving Session held by Department of ISysE, KAIST

2022 **Hanyang Academic Achievement Award**
Awarded within the top 3% among the College of Engineering, Hanyang Univ.

2020 **Hanyang Brain Scholarship**
Scholarship for excellent top 5% grade in Industrial Engineering department, Hanyang Univ.

2020 **Outstanding Learning Activities Scholarship**
Outstanding learning activities in communities held by University Innovation Support

2017 **Hanyang Brain Scholarship**
Scholarship for excellent top 5% grade in Industrial Engineering department, Hanyang Univ.

Professional Services

Conference Review

- 2025 - ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD)
- 2025 - The International Conference on Learning Representations (ICLR)
- 2025 - AAAI Conference on Artificial Intelligence (AAAI)
- 2024 - AAAI Conference on Artificial Intelligence (AAAI)
- 2024 - Conference on Information and Knowledge Management (CIKM)

Workshop Review

- 2025 - PAKDD Workshop: Graph Learning with Foundation Models (GLFM)
- 2025 - ICLR Workshop: Towards Robots with Human-Level Abilities (WRL)

Journal Review

- 2024 ∼ 2025 - IEEE Transactions on Knowledge and Data Engineering (TKDE) (2 times)
- 2023 ∼ 2025 - IEEE Transactions on Neural Networks and Learning Systems (TNNLS) (5 times)

Teaching Experience

Spring 2022 **KSE527: Machine Learning for Knowledge Service**
Teaching Assistant

Fall 2022 **KSE801: Recommender System and Graph Machine Learning**
Teaching Assistant

Talks & Seminars

Jun 2023 **MELT: Mutual Enhancement of Long-Tailed User and Item for Sequential Recommendation**
Top Conference Session of Korea Computer Congress (KCC) 2023

Activities

2021.12-2022.02 **Research intern in Data Science & Artificial Intelligence Lab (DSAIL)**
Implementing key papers on Graph Neural Networks and Recommender Systems (link)

2018.06-2018.07 **Short-term Language Study Program in China**
Cultural exchange activities at Changchun University

References

Prof. Chanyoung Park, Assistant professor, KAIST
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