

Mincheol Kwon

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Research Interest

My research goal is to develop general-purpose and reliable AI agents. To accomplish this, my current work focuses on effectively integrating multimodal and external information into generative models. Recently, my research has concentrated on leveraging image modality information associated with queries to enhance the efficiency and accuracy of AI systems. Previously, I conducted research on improving the reliability of large language models (LLMs) by retrieving and augmenting fragmented data from multiple external sources.

Education

Korea University

Mar. 2025 – Present

M.S. in Computer Science and Engineering

- Advisor : Prof. Jinkyu Kim & Prof. Jungbeom Lee
- Overall GPA: 4.36/4.50

Kwangwoon University

Mar. 2019 - Feb. 2025

B.E. in Computer Science and Engineering

- Overall GPA: 4.29/4.50, Major GPA: 4.41/4.50
- Academic Rank : Top 3 out of 96 students

Publications

* : equal contributions

[P7] When Cropping Hurts: Risk-Controlled Visual Zooming for Vision-Language Models

Daekeun Kim, Mincheol Kwon, Jungbeom Lee

Under Review at Association for the Advancement of Artificial Intelligence (AAAI), 2027

[P6] SubVideo: A Benchmark for Subtitle-Aware Video Understanding

Mincheol Kwon, Yongjoo Kim, Yunsu Choi, Hyunyoung Lee, Seunghyun Park, Jungbeom Lee

Under Review at Association for the Advancement of Artificial Intelligence (AAAI), 2027

[P5] SAGE: Semantic Attribute Graphs for Multi-Entity Visual Retrieval

Yongjoo Kim*, Mincheol Kwon*, Seonga Choi, Minseung Lee, KyeongJin Oh, Hyunyoung Lee, Yunsu Choi, Jungbeom Lee

Empirical Methods in Natural Language Processing (EMNLP), 2026

[P4] The Truth Stays in the Family: Enhancing Contextual Truthfulness via Inherited Heads in Model Lineages

Miso Choi, Seonga Choi, Mincheol Kwon, Woosung Jung, Jinkyu Kim, Jungbeom Lee

International Conference on Machine Learning (ICML), 2026

[P3] Focus, Don't Prune: Identifying Instruction-Relevant Regions for Information-Rich Image Understanding

Mincheol Kwon, Minseung Lee, Seonga Choi, Miso Choi, Kyeong-Jin Oh, Hyunyoung Lee, Cheonyoung Park, Yongho Song, Seunghyun Park, Jinkyu Kim

The IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR), 2026

[P2] Watermarking for Factuality: Guiding Vision-Language Models Toward Truth via Tri-layer Contrastive Decoding

Kyungryl Back, Seongbeom Park, Milim Kim, Mincheol Kwon, SangHyeok Lee, Hyuyoung Lee, Junhee Cho, Seunghyun Park, Jinkyu Kim

Empirical Methods in Natural Language Processing (EMNLP Findings), 2025

[P1] A Dynamic-Selection-Based, Retrieval-Augmented Generation Framework: Enhancing Multi-Documnt Question-Answering for Commercial Applications

Mincheol Kwon*, Jimin Bang*, Seyoung Hwang*, Junghoon Jang, Woosin Lee

Electronics, vol.14, MDPI, 2025

Experience

Vision and AI Lab, Korea University

July 2024 - Present

Graduate Research Assistant (Advisor: Prof. Jinkyu Kim)

- Conducting research on domain-specific Vision-Language Model (VLM) ([P2 - P7])

Lab of Medical Imaging and Computation, Harvard Medical School

June. 2025 - Aug. 2025

Research Intern (Advisor: Prof. Synho Do)

- Conducted research on a model for predicting biological age using microbiome abundance data

Growth Technology Research Center, Wisenut

Jan. 2024 - June. 2024

Research Student (Mentor: Junghoon Jang)

- Conducted Research on Multi-Documnt Retrieval-Augmented Generation (RAG) ([P1])

AI Decision-Making Lab, Kwangwoon University

Sep. 2023 - June. 2024

Research Intern (Advisor: Prof. Woosin Lee)

- Conducted Research on Multi-Documnt Retrieval-Augmented Generation (RAG) ([P1])

Bio-Computing & Machine Learning Lab, Kwangwoon University

Jan. 2023 - Sep. 2023

Research Intern (Advisor: Prof. Cheolsoo Park)

- Conducted Research on time-series data restoration

Academic Service

Program Committee Member, The 41st Annual AAAI Conference on Artificial Intelligence (AAAI 2027)

2027

Honors and Awards

Scholarship

Woonhae Scholarship

2024

SNT Group Woonhae Scholarship Foundation

- Full tuition and living expenses support for undergraduate studies

Academic Excellence Scholarship

2019 - 2024

Kwangwoon University

- Full tuition and living expenses support awarded for academic excellence

Hospi Scholarship

2019

Hospi Group

- Full tuition and living expenses support for undergraduate studies

Awards

LLM Innovators Challenge, 2nd place (\$5000 as awards) Upstage	2024
Industry-Academia Software Development Project, 1st place (\$500 as awards) Kwangwoon University	2024
Chambit Performance Presentation, President's Award(1st) (\$500 as awards) Kwangwoon University	2023
Academic Excellence Award (Dean's List) Kwangwoon University	2019 - 2024

Teaching Experience

Teaching Assistant: Data Structure (COSE213), Korea University	Spring 2025
Teaching Assistant: Mathematics for Computer Science(COSE112), Korea Univ	Fall 2025
Teaching Assistant: Fundamentals of AI (CSAI201), Korea Univ	Spring 2026