

RESEARCH INTERESTS

- **Multimodal:** Vision-Language, Audio-Visual, Interleaved modalities
- **Agentic reasoning:** Tool-integrated agents, Information-seeking
- **Efficiency:** Data selection, Token reduction, Model compression

EDUCATION

University of North Carolina at Chapel Hill
Ph.D. in Computer Science (Advisor: Mohit Bansal)

NC, United States
Aug. 2025 – Current

Korea Advanced Institute of Science and Technology (KAIST)
M.S. in Artificial Intelligence (Advisor: Sung Ju Hwang)

Seoul, South Korea
Mar. 2023 – Aug. 2024

Korea Advanced Institute of Science and Technology (KAIST)
B.S. in Electrical Engineering (Summa Cum Laude)

Daejeon, South Korea
Mar. 2020 – Feb. 2023

PUBLICATIONS

* denotes the equal contribution and ^denotes the equal advising

[P1] **PRInTS: Reward Modeling for Long-Horizon Information Seeking**
[Jaewoo Lee](#), Archiki Prasad, Justin Chih-Yao Chen, Zaid Khan, Elias Stengel-Eskin, Mohit Bansal
Preprint

[C5] **Unified Multimodal Interleaved Document Representation for Retrieval**
[Jaewoo Lee*](#), Joonho Ko*, Jinheon Baek*, Soyeong Jeong, Sung Ju Hwang
European Chapter of the Association for Computational Linguistics (EACL Findings, 2026)

[C4] **TAMP: Token-Adaptive Layerwise Pruning in Multimodal Large Language Models**
[Jaewoo Lee](#), Keyang Xuan, Chanakya Ekbot, Sandeep Polisetty, Yi R. Fung, Paul Pu Liang
Annual Meeting of the Association for Computational Linguistics (ACL Findings, 2025)

[C3] **Concept-skill Transferability-based Data Selection for Large Vision-Language Models**
[Jaewoo Lee](#), Boyang Li^, Sung Ju Hwang^
Conference on Empirical Methods in Natural Language Processing (EMNLP, 2024)

[C2] **STELLA: Continual Audio-Video Pre-training with Spatio-Temporal Localized Alignment**
[Jaewoo Lee*](#), Jaehong Yoon*, Wonjae Kim, Yunji Kim, Sung Ju Hwang
International Conference on Machine Learning (ICML, 2024)

[C1] **Sound-based drone fault classification using multitask learning**
Wonjun Yi, Jung-Woo Choi, [Jaewoo Lee](#)
International Congress on Sound and Vibration (ICSV, 2023)

RESEARCH EXPERIENCES

MURGe Lab-UNC Chapel Hill
Ph.D. Student Researcher (Advisor: Mohit Bansal)

NC, United States
Aug. 2025 - Current

- [P1] Developed a generative process reward model that provides step-level guidance for long-horizon information-seeking.

MIT Media Lab
Research Intern (Advisor: Paul Pu Liang)

MA, United States
Nov. 2024 - Feb. 2025

- [C4] Proposed a MLLM pruning pipeline that leverages multimodal token attributes for weight & layer importance.

DeepAuto.ai

AI Researcher

- Worked on LangGraph-based retrieval augmented generation framework with unified query refinement.

Seoul, South Korea

Aug. 2024 - Mar. 2025

Nanyang Technological University (NTU)

Research collaborator (Advisor: Boyang Li)

Singapore

Jan. 2024 - Jun. 2024

- [C3] Proposed a visual instruction tuning data selection method using concept-skill clustering.

MLAI Lab-KAIST

M.S. Student Researcher (Advisor: Sung Ju Hwang)

Seoul, South Korea

Mar. 2023 - Aug. 2024

- [C5] Suggested a retrieval framework that unifies interleaved multimodal contents within a document.
- [C2] Developed an audio-visual patch selection method that addresses dynamic multimodal semantics in continual pre-training.

Smart Sound Systems Lab-KAIST

Undergraduate Research Intern (Advisor: Jung-Woo Choi)

Daejeon, South Korea

Sep. 2021 - Jun. 2022

- [C1] Introduced a multitask learning approach and audio datasets ([link](#)) for UAV anomaly detection.

Urban Robotics Lab-KAIST

Undergraduate Research Intern (Advisor: Hyun Myung)

Daejeon, South Korea

Jun. 2021 - Aug. 2021

- Worked on Simultaneous localization and mapping (SLAM) for autonomous navigation of self-driving cars.

ACADEMIC SERVICES

- Reviewer: NeurIPS Workshop on Continual Foundation Model 2024, ACL Rolling Review - 2024 October

AWARDS & HONORS

Summa Cum Laude Award

Graduated with highest honors and a 4.11/4.3 GPA.

KAIST

Feb. 2023

National Scholarship for Science & Engineering

Awarded for outstanding academics and potential impact in science and technology.

Korea Student Aid Foundation

Sep. 2022 - Feb. 2023

Encouragement Award for the Undergraduate Research Program

Earned a top ranking in the Undergraduate Research Program, competing against 65 teams.

KAIST

Aug. 2022

College of Engineering Dean's List

Achieved within the top 3% of academic performance in the Electrical Engineering Department.

KAIST

Aug. 2022

School of Freshman Dean's List

Achieved within the top 2% in academic excellence among Freshman.

KAIST

Aug. 2020

SKILLS

Programming Ability - Python, C, MATLAB, R, Pytorch, Tensorflow, Git, Linux, L^AT_EX, Markdown

Language Ability - Native in Korean, Fluent in English (IBT TOEFL: 110)

REFERENCES

Mohit Bansal Professor at UNC Chapel Hill  mbansal@cs.unc.edu

Sung Ju Hwang Professor at KAIST  sungju.hwang@kaist.ac.kr

Boyang Li Professor at NTU  boyang.li@ntu.edu.sg

Jung-Woo Choi Professor at KAIST  jwoo@kaist.ac.kr