

Sangkyu Lee

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RESEARCH INTEREST

Embodied AI, Early-fusion Multimodal Models, AI Alignment, Memory for Continual Learning

EDUCATION

Yonsei University	Mar. 2023 – Present
M.S. in Artificial Intelligence (Advisors: <u>Youngjae Yu</u> , <u>Jongmin Lee</u>)	Seoul, Korea
Yonsei University	Mar. 2021 – Feb. 2023
B.A. in Applied Statistics, B.S. in Computer Science and Engineering (CGPA: 4.06/4.30)	Seoul, Korea
Hanyang University	Mar. 2017 – Feb. 2021
Major in Economics and Finance (Transferred, Includes a 2-year mandatory military service)	Seoul, Korea

RESEARCH EXPERIENCE

Research Scientist Intern	Sep. 2025 – Present
Artificial Intelligence and Robotics Institute, KIST (Mentors: <u>Hwasup Lim</u> , <u>Tackgeun You</u>)	Seoul, Korea
<i>Researching the real-time execution of robotics policy that is capable of replanning in the case of failure</i>	
Research Assistant	Mar. 2023 – Aug. 2025
Multimodal Intelligence Research Lab, Yonsei University (PI: <u>Youngjae Yu</u>)	Seoul, Korea
<i>Participated as a founding member and took charge of topics related to robotics foundation models</i>	
Research Scientist Intern	Sep. 2024 – Aug. 2025
Language Lab, LG AI Research (Mentors: <u>Honglak Lee</u> , <u>Hosung Song</u> , <u>Janghoon Han</u>)	Seoul, Korea
<i>Researched for improving Direct Preference Optimization and autoregressive visual generations</i>	
Technical Lead	Jan. 2024 – May 2024
World Model for Robotics and Vehicle Control Team, maumAI	Seongnam, Korea
<i>Led the development project of the world foundation model for robotics and autonomous vehicles</i>	
Research Scientist Intern	Jul. 2023 – Jan. 2024
Foundation Research Team, Naver Cloud (Mentors: <u>Kang Min Yoo</u> , <u>Sungdong Kim</u>)	Seongnam, Korea
<i>Participated in the alignment of HyperCLOVA X and researched the self-alignment of large language models</i>	
Undergraduate Research Assistant	Jul. 2022 – Aug. 2022
Big Data Analytics and Learning Lab, Yonsei University (PI: <u>Noseong Park</u>)	Seoul, Korea
<i>Researched Neural Operator and Stratonovich SDE for the reverse-time process of diffusion models</i>	

PUBLICATIONS

Conference Papers

- [C4] KL Penalty Control via Perturbation for Direct Preference Optimization
Sangkyu Lee, Janghoon Han, Hosung Song, Stanley Jungkyu Choi, Honglak Lee, Youngjae Yu
NeurIPS 2025

[C3] Speaking Beyond Language: A Large-Scale Multimodal Dataset for Learning Nonverbal Cues from Video-Grounded Dialogues
Youngmin Kim*, Jiwan Chung*, Jisoo Kim, Sunghyun Lee, **Sangkyu Lee**, Junhyeok Kim, Cheoljong Yang, Youngjae Yu
ACL 2025

[C2] MASS: Overcoming Language Bias in Image-Text Matching
Jiwan Chung, Seungwon Lim, **Sangkyu Lee**, Youngjae Yu
AAAI 2025

[C1] Aligning Large Language Models by On-Policy Self-Judgment
Sangkyu Lee, Sungdong Kim*, Ashkan Yousefpour, Minjoon Seo, Kang Min Yoo, Youngjae Yu*
ACL 2024

Preprints & Technical Reports

[P2] Spanning Tree Autoregressive Visual Generation
Sangkyu Lee, Changho Lee, Janghoon Han, Hosung Song, Tackgeun You, Hwasup Lim, Stanley Jungkyu Choi, Honglak Lee, Youngjae Yu
arXiv

[P1] SEAL: Entangled White-box Watermarks on Low-Rank Adaptation
Giyeong Oh, Saejin Kim, Woohyun Cho, **Sangkyu Lee**, Jiwan Chung, Dokyung Song, Youngjae Yu
arXiv

[T1] HyperCLOVA X Techinal Report
HyperCLOVA X Team (Contributor; **Sangkyu Lee**)
arXiv

HONORS AND AWARDS

Partial Scholarship, Yonsei University (Spring 2023)
Academic Honors, Yonsei University (Fall 2021)

ACADEMIC SERVICES

Reviewer, ICLR (2025, 2026)

TEACHING EXPERIENCE

Teaching Assistant, AAI5012: Advanced Video Processing (Fall 2023)
Lecture Instructor, Samsung AI Specialist Course (Jul. 2023)

EXTRACURRICULAR ACTIVITIES

Student Society: Lead of Data Science Team, YBIGTA, Yonsei University (Mar. 2022 – Feb. 2023)
Club Activity: Band Leader (Lead Vocalist), SRGB, Hanyang University (Mar. 2017 – Feb. 2019)

SKILLS

Programming Languages: Python, C++, Java, R, MATLAB
Frameworks: PyTorch, PyTorch Lightning, JAX
Libraries: Transformers, TRL, Accelerate, DeepSpeed, vLLM, Diffusers, scikit-learn, Optuna
Math Coursework: Real Analysis, Mathematical Statistics, Linear Algebra, Numerical Analysis
Language Proficiency: Korean (Native), English (Fluent), Japanese (Fluent)