

Sangkyu Lee

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RESEARCH INTEREST

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

EDUCATION

Yonsei University Mar. 2023 – Present
M.S. in Artificial Intelligence (Advisors: [Youngjae Yu](#), [Jongmin Lee](#)) 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: [Hwasup Lim](#), [Tackgeun You](#)) Seoul, Korea
Researching the real-time execution of robotics policy that is capable of replanning in the case of failure

Research Assistant Mar. 2023 – Aug. 2025
Multimodal Intelligence Research Lab, Yonsei University (PI: [Youngjae Yu](#)) Seoul, Korea
Participated as a founding member and took charge of topics related to robotics foundation models

Research Scientist Intern Sep. 2024 – Aug. 2025
Language Lab, LG AI Research (Mentors: [Honglak Lee](#), [Hosung Song](#), [Janghoon Han](#)) Seoul, Korea
Researched for improving Direct Preference Optimization and autoregressive visual generations

Technical Lead Jan. 2024 – May 2024
World Model for Robotics and Vehicle Control Team, maumAI Seongnam, Korea
Led the development project of the world foundation model for robotics and autonomous vehicles

Research Scientist Intern Jul. 2023 – Jan. 2024
Foundation Research Team, Naver Cloud (Mentors: [Kang Min Yoo](#), [Sungdong Kim](#)) Seongnam, Korea
Participated in the alignment of HyperCLOVA X and researched the self-alignment of large language models

Undergraduate Research Assistant Jul. 2022 – Aug. 2022
Big Data Analytics and Learning Lab, Yonsei University (PI: [Noseong Park](#)) Seoul, Korea
Researched Neural Operator and Stratonovich SDE for the reverse-time process of diffusion models

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)