

# Sangkyu Lee

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## RESEARCH INTEREST

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**Embodied Agents, Multimodal Models, AI Alignment, Long-context Modeling, Continual Learning**

## EDUCATION

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**Yonsei University** Mar. 2023 – Present  
*M.S. in Artificial Intelligence (Advisor: Youngjae Yu, CGPA: 4.16/4.3)* Seoul, Korea

**Yonsei University** Mar. 2021 – Feb. 2023  
*B.A. in Applied Statistics, B.S. in Computer Science and Engineering (CGPA: 4.06/4.3)* 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

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**Graduate Research Assistant** Mar. 2023 – Present  
*Multimodal Intelligence Research Lab, Yonsei University (Advisor: Youngjae Yu)* Seoul, Korea

- Researching alignment of large language models and tokenized visual representation for embodied agents
- Participated as a starting member and assisted with grant proposals for robotics foundation models

**Research Scientist Intern** Sep. 2024 – Present  
*Language Lab, LG AI Research (Mentors: Hosung Song, Janghoon Han)* Seoul, Korea

- Researching adaptive length tokenization of visual modality for efficient autoregressive representations
- Investigating self-improvement of language models that do not require training for self-assessment

**Technical Lead** Jan. 2024 – May 2024  
*World Model for Robotics and Vehicle Control Team, maumAI* Seongnam, Korea

- Led the development project of a world model for robotics agents and autonomous vehicles
- Researched visual tokenizers aligned with text representations for fast adaptation of language models

**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, a large language model specialized in Korean
- Researched self-improvement of language models through a self-assessment process by LLM-as-a-judge

**Undergraduate Research Assistant** Jul. 2022 – Aug. 2022  
*Big Data Analytics and Learning Lab, Yonsei University (Advisor: Noseong Park)* Seoul, Korea

- Researched Neural Operators for the vision models to achieve resolution-free generative models
- Investigated Stratonovich SDE for accelerating the reverse-time process of diffusion models

## PUBLICATIONS

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### **SEAL: Entangled White-box Watermarks on Low-Rank Adaptation**

Under Review

*Giyeong Oh, Saejin Kim, Woohyun Cho, Sangkyu Lee, Jiwan Chung, Dokyung Song, Youngjae Yu*

### **MASS: Overcoming Language Bias in Image-Text Matching**

Under Review

*Jiwan Chung, Seungwon Lim, Sangkyu Lee, Youngjae Yu*

### **HyperCLOVA X Techinal Report**

arXiv

*HyperCLOVA X Team*

### **Aligning Large Language Models by On-Policy Self-Judgment**

**ACL 2024**

*Sangkyu Lee, Sungdong Kim, Ashkan Yousefpour, Minjoon Seo, Kang Min Yoo, Youngjae Yu*

## HONORS AND AWARDS

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**Partial Scholarship**, Yonsei University (Mar. 2023)

**Academic Honors**, Yonsei University (Jan. 2022)

## ACADEMIC SERVICES

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**Reviewer**, ICLR (2025)

## TEACHING EXPERIENCE

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**Teaching Assistant**, AAI5012: Advanced Video Processing (Sep. 2023 – Dec. 2023)

**Lecture Instructor**, Samsung AI Specialist Course (Jul. 2023)

## TECHNICAL SKILLS

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**Programming Languages**: Python, C++, Java, R, MATLAB

**Frameworks**: PyTorch, PyTorch Lightning

**Libraries**: Transformers, TRL, Accelerate, DeepSpeed, vLLM, Diffusers, scikit-learn, Optuna

**Math Coursework**: Real Analysis, Mathematical Statistics, Linear Algebra, Numerical Analysis

## LANGUAGE PROFICIENCY

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**Korean**: Native

**English**: Fluent

**Japanese**: Fluent