# Sangkyu Lee

\* oddqueue.github.io

# Research Interest

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

# EDUCATION

Yonsei University

Mar. 2023 – Present

M.S. in Artificial Intelligence (Advisor: Youngjae Yu, CGPA: 4.15/4.30)

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 Assistant

Mar. 2023 – Present

Multimodal Intelligence Research Lab, Yonsei University (Advisor: Youngjae Yu)

Seoul, Korea

Participating as a founding member and researching topics for robotics foundation models

Research Intern

Sep. 2024 – Present

Language Lab, LG AI Research (Mentors: Honglak Lee, Hosung Song, Janghoon Han)

Seoul, Korea

Researching direct alignment algorithms and autoregressive modeling for the vision modality

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 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 (Advisor: Noseong Park)

Seoul, Korea

Researched Neural Operators and Stratonovich SDE for the reverse-time process of diffusion models

### Publications

#### **Conference Papers**

[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 and 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] KL Penalty Control via Perturbation for Direct Preference Optimization Sangkyu Lee, Janghoon Han, Hosung Song, Stanley Jungkyu Choi, Honglak Lee, Youngjae Yu $\underbrace{arXiv}$ 

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

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

# Honors and Awards

Partial Scholarship, Yonsei University (Mar. 2023) Academic Honors, Yonsei University (Jan. 2022)

# Academic Services

Reviewer, ICLR (2025)

## Teaching Experience

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

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)