SANGHO LEE

sanghol@allenai.org | https://sangho-vision.github.io | sanghol | Scholar

RESEARCH INTERESTS

Computer Vision, Machine Learning
Multimodal representation learning, especially for high-level video understanding and reasoning

EMPLOYMENT

PRIOR @ Allen Institute for AI *Aug. 2024 - Present*
Research Scientist

PRIOR @ Allen Institute for AI *Jan. 2023 - Jul. 2024*
Postdoctoral Researcher (Young Investigator)

PRIOR @ Allen Institue for AI
Research Intern *Mar. 2022 - Jun. 2022, Aug. 2022 - Dec. 2022*

EDUCATION

Seoul National University *Mar. 2017 - Feb. 2023*
Doctor of Philosophy (Ph.D) Overall GPA: 4.27 / 4.3
Department of Computer Science and Engineering
Advisor: Prof. Gunhee Kim
Thesis: Improving Efficiency in Large-Scale Self-Supervised Video Representation Learning

Seoul National University *Mar. 2010 - Feb. 2017*
Bachelor of Science Overall GPA: 4.04 / 4.3
Department of Computer Science and Engineering
Minor in Statistics
Graudated *summa cum laude*

PUBLICATIONS

One Diffusion to Generate Them All
Duong H. Le*, Tuan Pham*, **Sangho Lee**, Christopher Clark, Aniruddha Kembhavi, Stephan Mandt, Ranjay Krishna, and Jiasen Lu (*: equal contribution)
preprint

Molmo and PixMo: Open Weights and Open Data for State-of-the-Art Multimodal Models
Matt Deitke*, Christopher Clark*, **Sangho Lee**, Rohun Tripathi, Yue Yang, Jae Sung Park, Mohammadreza Salehi, Niklas Muennighoff, Kyle Lo, Luca Soldaini, Jiasen Lu, Taira Anderson, Erin Bransom, Kiana Ehsani, Huong Ngo, YenSung Chen, Ajay Patel, Mark Yatskar, Chris Callison-Burch, Andrew Head, Rose Hendrix, Favyen Bastani, Eli VanderBilt, Nathan Lambert, Yvonne Chou, Arnavi Chheda, Jenna Sparks, Sam Skjonsberg, Michael Schmitz, Aaron Sarnat, Byron Bischoff, Pete Walsh, Chris Newell, Piper Wolters, Tanmay Gupta, Kuo-Hao Zeng, Jon Borchardt, Dirk Groeneveld, Jen Dumas, Crystal Nam, Sophie Lebrecht, Caitlin Wittlif, Carissa Schoenick, Oscar Michel, Ranjay Krishna, Luca Weihs, Noah A. Smith, Hannaneh Hajishirzi, Ross Girshick, Ali Farhadi, and Aniruddha Kembhavi (*: equal contribution)
preprint

Finding NeMo: Negative-mined Mosaic Augmentation for Referring Image Segmentation
Seongsu Ha*, Chaeyun Kim*, Donghwa Kim*, Junho Lee, **Sangho Lee**, and Joonseok Lee (*: equal

contribution)
The 18th European Conference on Computer Vision (ECCV 2024)

Unified-IO 2: Scaling Autoregressive Multimodal Models with Vision, Language, Audio, and Action
Jiasen Lu*, Christopher Clark*, **Sangho Lee***, Zichen Zhang*, Savya Khosla, Ryan Marten, Derek Hoiem, and Aniruddha Kembhavi (*: equal contribution)
Conference on Computer Vision and Pattern Recognition 2024 (CVPR 2024)

Can Language Models Laugh at YouTube Short-form Videos?
Dayoon Ko, **Sangho Lee**, and Gunhee Kim
The 2023 Conference on Empirical Methods in Natural Language Processing (EMNLP 2023)

ACAV100M: Automatic Curation of Large-Scale Datasets for Audio-Visual Video Representation Learning
Sangho Lee*, Jiwan Chung*, Youngjae Yu, Gunhee Kim, Thomas Breuel, Gal Chechik, and Yale Song (*: equal contribution)
International Conference on Computer Vision 2021 (ICCV 2021)
CVPR 2021: The Third Workshop on Learning from Unlabeled Videos

Unsupervised Representation Learning via Neural Activation Coding
Yookoon Park, **Sangho Lee**, Gunhee Kim, and David Blei
The Thirty-eighth International Conference on Machine Learning (ICML 2021)

Parameter Efficient Multimodal Transformers for Video Representation Learning
Sangho Lee, Youngjae Yu, Gunhee Kim, Thomas Breuel, Jan Kautz, and Yale Song
The Ninth International Conference on Learning Representations (ICLR 2021)
CVPR 2021: The Second Intertional Workshop on Large Scale Holistic Video Understanding

Self-Supervised Learning of Compressed Video Representations
Youngjae Yu*, **Sangho Lee***, Gunhee Kim, and Yale Song (*: equal contribution)
The Ninth International Conference on Learning Representations (ICLR 2021)

A Memory Network Approach for Story-based Temporal Summarization of 360° Videos
Sangho Lee, Jinyoung Sung, Youngjae Yu, and Gunhee Kim
Conference on Computer Vision and Pattern Recognition 2018 (CVPR 2018)
ECCV 2018 Workshop on 360° Perception and Interaction

A Deep Ranking Model for Spatio-temporal Highlight Detection from a 360° Video
Youngjae Yu, **Sangho Lee**, Joonil Na, Jaeyoun Kang, and Gunhee Kim
The Thirty-Second AAAI Conference on Artificial Intelligence (AAAI-18)

A Read-Write Memory Network for Movie Story Understanding
Seil Na, **Sangho Lee**, Jisung Kim, and Gunhee Kim
International Conference on Computer Vision 2017 (ICCV 2017)
ICCV 2017: The Joint Video and Language Understanding Workshop

Encoding Video and Label Priors for Multi-label Video Classification on YouTube-8M dataset
Seil Na, Youngjae Yu, **Sangho Lee**, Jisung Kim, and Gunhee Kim
CVPR 2017 Workshop on YouTube-8M Large-Scale Video Understanding

PROFESSIONAL ACTIVITIES

Workshop Organization and Committee
Workshop on on Video-Language Models at NeurIPS 2024 (1st)

Journal Review
Transactions on Machine Learning Research (TMLR) 2024/2023

Conference Review
CVPR 2024/2022/2021
ICCV 2023
ECCV 2024/2022
NeurIPS 2024/2023
ICML 2024
ICLR 2025/2024/2023/2021
AAAI 2023

Workshop Paper Review
NeurIPS Workshop on Self-Supervised Learning – Theory and Practice 2024/2023/2022

AWARDS

Excellent Ph.D. Thesis Award *Feb. 2023*
Selected as the best doctoral thesis by Department of Computer Science and Engineering, Seoul National University

Naver Ph.D. Fellowship *Dec. 2021*
Awarded to outstanding graduate students in the field of Computer Science for their exceptional academic research

Youlchon AI Star Fellowship *Sep. 2021*
An award for those who made distinguished research achievements in core AI fields

MovieQA Challenge @ ICCV 2017 Workshop *Oct. 2017*
ICCV 2017 Workshop on the Joint Video and Language Understanding Workshop
Ranked 2nd place

Google Cloud & YouTube-8M Video Understanding Challenge *Jul. 2017*
CVPR 2017 Workshop on YouTube-8M Large-Scale Video Understanding
Ranked 8th place out of 655 teams (Top 2%)

ACADEMIC EXPERIENCE

Graduate Teaching Assistant at SNU

Knowledge Representation and Reasoning (M1522.001300)	Fall 2018
Probabilistic Graphical Models (M1522.001300)	Fall 2017
Discrete Mathematics (4190.101)	Spring 2017