Jungin Park

Ph.D.

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Research Interests

Machine learning, computer vision, foundation model, video understanding, multimodal learning

Education

Yonsei University *Seoul, S.Korea*

Ph.D. in Department of Electrical and Electronic Engineering *Mar. 2018 - Feb. 2024*

- Dissertation: Language-guided spatiotemporal representation learning for video understanding
- Advised by Prof. Kwanghoon Sohn

Yonsei University *Seoul, S.Korea*

B.E. in School of Electrical and Electronic Engineering *Mar. 2012 - Feb. 2018*

Experience

Yonsei University *Seoul, S.Korea*

Postdoctoral Researcher *Sep. 2024 - Present*

- Advised by Prof. Kwanghoon Sohn

NAVER CLOUD AI LAB *Seongnam, S.Korea*

Visiting Researcher *Mar. 2024 - Sep. 2024*

- ML Research

Publication

Selected Publications

"Bridging Vision and Language Spaces with Assignment Prediction"

Jungin Park, Jiyoung Lee, and Kwanghoon Sohn *May. 2024*

- International Conference on Learning Representations (**ICLR**).

"Dual-path Adaptation from Image to Video Transformers"

Jungin Park, Jiyoung Lee, and Kwanghoon Sohn *Jun. 2023*

- IEEE/CVF Conference on Computer Vision and Pattern Recognition (**CVPR**).

"Probabilistic Representations for Video Contrastive Learning"

Jungin Park, Jiyoung Lee, Ig-Jae Kim, and Kwanghoon Sohn *Jun. 2022*

- IEEE/CVF Conference on Computer Vision and Pattern Recognition (**CVPR**).

"Bridge to Answer: Structure-aware Graph Interaction Network for Video Question Answering"

Jungin Park, Jiyoung Lee, and Kwanghoon Sohn *Jun. 2021*

- IEEE/CVF Conference on Computer Vision and Pattern Recognition (**CVPR**).

"SumGraph: Video Summarization via Recursive Graph Modeling"

Jungin Park, Jiyoung Lee, Ig-jae Kim, and Kwanghoon Sohn *Aug. 2020*

- European Conference on Computer Vision (**ECCV**).

"Language-Guided Recursive Spatiotemporal Graph Modeling for Video Summarization"

Jungin Park, Jiyoung Lee, and Kwanghoon Sohn *Mar. 2024 (Submitted)*

- International Journal of Computer Vision (**IJCV**). (Under Review)

International Conference

"Bridging Vision and Language Spaces with Assignment Prediction"

Jungin Park, Jiyoung Lee, and Kwanghoon Sohn *May. 2024*

- International Conference on Learning Representations (**ICLR**).

"Knowing Where to Focus: Event-aware Transformer for Video Grounding"

Jinhyun Jang, **Jungin Park**, Jin Kim, Hyeongjun Kwon, and Kwanghoon Sohn *Oct. 2023*

- IEEE/CVF International Conference on Computer Vision (**ICCV**).

"Dual-path Adaptation from Image to Video Transformers"

Jungin Park*, Jiyoung Lee*, and Kwanghoon Sohn *Jun. 2023*

- IEEE/CVF Conference on Computer Vision and Pattern Recognition (**CVPR**).

"PartMix: Regularization Strategy to Learn Part Discovery for Visible-Infrared Person Re-identification"

Minsu Kim, Seungryong Kim, **Jungin Park**, Seongheon Park, and Kwanghoon Sohn *Jun. 2023*

- IEEE/CVF Conference on Computer Vision and Pattern Recognition (**CVPR**).

"Language-free Training for Zero-shot Video Grounding"

Dahye Kim, **Jungin Park**, Jiyoung Lee, Seongheon Park, and Kwanghoon Sohn *Jan. 2023*

- IEEE/CVF Winter Conference on Applications of Computer Vision (**WACV**).

"PointFix: Learning to Fix Domian Bias for Robust Online Stereo Adaptation"

Kwonyoung Kim, **Jungin Park**, Jiyoung Lee, Dongbo Min, and Kwanghoon Sohn *Oct. 2022*

- European Conference on Computer Vision (**ECCV**).

"Probabilistic Representations for Video Contrastive Learning"

Jungin Park, Jiyoung Lee, Ig-Jae Kim, and Kwanghoon Sohn *Jun. 2022*

- IEEE/CVF Conference on Computer Vision and Pattern Recognition (**CVPR**).

"Pin the Memory: Learning to Generalize Semantic Segmentation"

Jin Kim, Jiyoung Lee, **Jungin Park**, Dongbo Min, and Kwanghoon Sohn *Jun. 2022*

- IEEE/CVF Conference on Computer Vision and Pattern Recognition (**CVPR**).

"Self-Balanced Learning for Domain Generalization"

Jin Kim, Jiyoung Lee, **Jungin Park**, Dongbo Min, and Kwanghoon Sohn *Sep. 2021*

- IEEE International Conference on Image Processing (**ICIP**).

"Bridge to Answer: Structure-aware Graph Interaction Network for Video Question Answering"

Jungin Park, Jiyoung Lee, and Kwanghoon Sohn *Jun. 2021*

- IEEE/CVF Conference on Computer Vision and Pattern Recognition (**CVPR**).

"Cross-Domain Grouping and Alignment for Domain Adaptive Semantic Segmentation"

Minsu Kim, Sunghun Joung, Seungryong Kim, **Jungin Park**, Ig-jae Kim, and Kwanghoon Sohn *Dec. 2020*

- Thirty-Fifth AAAI Conference on Artificial Intelligence (**AAAI**).

"SumGraph: Video Summarization via Recursive Graph Modeling"

Jungin Park*, Jiyoung Lee*, Ig-jae Kim, and Kwanghoon Sohn (* indicates equal contribution.) *Aug. 2020*

- European Conference on Computer Vision (**ECCV**).

"Context-Aware Emotion Recognition Networks"

Jiyoung Lee, Seungryong Kim, Sunok Kim, **Jungin Park**, and Kwanghoon Sohn *Oct. 2019*

- IEEE International Conference on Computer Vision (**ICCV**).

"Video Summarization by Learning Relationships between Action and Scene"

Jungin Park, Jiyoung Lee, Sangryul Jeon, Seungryong Kim, and Kwanghoon Sohn *Oct. 2019*

- IEEE International Conference on Computer Vision Workshop (**ICCV Workshop-CoVieW**).

"Graph Regularization Network with Semantic Affinity for Weakly-supervised Temporal Action Localization"

Jungin Park, Jiyoung Lee, Sangryul Jeon, Seungryong Kim, and Kwanghoon Sohn *Sep. 2019*

- IEEE International Conference on Image Processing (**ICIP**), Oral Presentation

"Learning to Detect, Associate, and Recognize Human Actions and Surrounding Scenes in Untrimmed Videos"

Jungin Park, Sangryul Jeon, Seungryong Kim, Jiyoung Lee, Sunok Kim, and Kwanghoon Sohn *Oct. 2018*

- ACM Multimedia Workshop - The 1st Workshop and Challenge on Comprehensive Video Understanding in the Wild (**ACMMM Workshop**).

Preprint

"Language-Guided Recursive Spatiotemporal Graph Modeling for Video Summarization"

Jungin Park, Jiyoung Lee, and Kwanghoon Sohn — *Mar. 2024 (Submitted)*

- International Journal of Computer Vision (**IJCV**). (Under Review)

"SimOn: A Simple Framework for Online Temporal Action Localization"

Tuan N. Tang, **Jungin Park**, Kwonyoung Kim, and Kwanghoon Sohn — *Nov. 2022*

- arXiv preprint arXiv:2211.04905

Honors & Awards

2023	**Academic Research Fellowship**,	*Yonsei University*
2019	**Outstanding 100 National Research Projects**, Research Assistant	*Ministry of Science and ICT, S. Korea*
2019	**3rd Award**, The 2nd Workshop and Challenge on Comprehensive Video Understanding in the Wild (CoVieW 2019 ICCV Challenge)	*ICCVW*
2019	**2nd Award**, Workshop on Frontiers of Electrical Engineering (FREE) 2019	*Yonsei University*

Talks

2024	**Invited Talk**, LIG Nex1	*LIG Nex1*
2023	**Spotlight Presentation**, Korea AI Summit	*Ministry of Science and ICT, S. Korea*
2023	**Poster Presentation**, Korean Conference on Computer Vision (KCCV)	*Korea Computer Vision Society*
2023	**Doctoral Colloquium**, Korean Conference on Computer Vision (KCCV)	*Korea Computer Vision Society*
2022	**Poster Presentation**, Korean Conference on Computer Vision (KCCV)	*Korea Computer Vision Society*
2022	**AI Tech Talk**, Naver CLOVA	*Naver Corporation*
2021	**AI Author Meetup**, Naver AI LAB	*Naver Corporation*
2021	**Online Presentation**, Korean Conference on Computer Vision (KCCV)	*Korea Computer Vision Society*

Project Experience

Development of Multimodal-based General-purpose Artificial Social Intelligence — *Seoul, S.Korea*

Funded by Yonsei University-Yonsei Signature Research Cluster. — *Apr. 2022 - Feb. 2024*

- Developed algorithms for multi-modal representation learning with foundation models.

Development of Multi-modal Data Fusion and Artificial Social Intelligence for Comprehensive Scene Understanding and Prediction — *Seoul, S.Korea*

Funded by Ministry of Science, Mid-level Research. — *Mar. 2021 - Feb. 2024*

- Developed artificial social intelligence based on scene recognition and reasoning for future prediction.

To Create AI Systems that Act Appropriately and Effectively in Novel Situations that Occur in Open Worlds — *Seoul, S.Korea*

Funded by Institute of Information & Communication Technology. — *Apr. 2020 - Mar. 2022*

- Developed algorithms for autonomous delivery robots that can perform computer vision tasks in real-world environments.
- Developed algorithms for domain generalization and online stereo adaptation using meta-learning.

Fundamental Research of Vision Algorithms for Comprehensive and Thorough Video Understanding — *Seoul, S.Korea*

Funded by Ministry of Science, ICT, and Future Planning. — *May. 2018 - Dec. 2020*

- Developed algorithms for scene understanding and reasoning from real-world videos.

Patent

"Video Question Answering Apparatus and Method based on Graph Interaction"

Jungin Park and Kwanghoon Sohn — *Jan. 2021*

- Korea Patent, 10-2022-0011919

“Video Summarization Apparatus and Method through Recursive Graph Modeling”

Jungin Park and Kwanghoon Sohn *Dec. 2020*

- Korea Patent, 10-2198480. PCT/KR2020/010755

“Video Action Recognition and Localization Apparatus and Method”

Jungin Park and Kwanghoon Sohn *Oct. 2020*

- Korea Patent, 10-2174658, PCT/KR2019/004798

Professional Activities

Reviewer

IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI)
IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)
IEEE/CVF International Conference on Computer Vision (ICCV)
International Conference on Learning Representations (ICLR)
European Conference on Computer Vision (ECCV)
AAAI Conference on Artificial Intelligence (AAAI)
IEEE/CVF Winter Conference on Applications of Computer Vision (WACV)
The British Machine Vision Conference (BMVC)

Teaching

Yonsei University, Dept. of Electrical and Electronic Engineering *Seoul, S.Korea*

Teaching Assistant. *Sep. 2018 - Jun. 2021*

- Electrical and electronic engineering experiments: fundamentals, Digital signal processing.
- Digital signal processing.
- Deep learning experiments.

Skills

Programming Python, C/C++, Ruby, MATLAB, OpenCV, LaTeX, Linux
Deep learning PyTorch, Tensorflow, Keras
Languages Korean, English