

Minkuk Kim

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CONTACT INFORMATION

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EDUCATION

Kyung Hee University	Aug. 2022 - Current
M.S. in Department of Artificial Intelligence	Yongin, Republic of Korea
· Advisor: Prof. Seong-Tae Kim	
Kyung Hee University	Mar. 2016 - Aug. 2022
B.S. in Department of Computer Science and Engineering	Yongin, Republic of Korea
· Advisor: Prof. Seong-Tae Kim	

RESEARCH KEYWORDS

Computer Vision and Natural Language Processing
Multi-Modal AI
Dense Video Captioning, Visual Question and Answering
Memory Augmented AI
Memory Retrieval, Memory-based Video Object Segmentation

RESEARCH EXPERIENCE

Long-form Dense Video Captioning	Nov. 2023 - Current
· We are working toward submission to the ICLR2024 conference.	
· We explore video localization and description for long-form video that can be considered with context.	

Dense Video Captioning

June. 2023 - Current

M. K. Kim, H. B. Kim, J. Y. Moon, J. W. Choi[†], and S. T. Kim[†]. “Do You Remember? Dense Video Captioning with Cross-Modal Memory Retrieval.” CVPR 2024, accepted.

- We propose a new dense video captioning model with cross-modal memory retrieval.
- We propose a novel structure that can learn cross-modal correlation.

Visual Question Answering

Feb. 2024 - Current

S. H. Lim, M. K. Kim, H. B. Kim, S. T. Kim[†]. “Retrieval-Augmented Natural Language Reasoning for Explainable Visual Question Answering.” IICIP workshop 2024, accepted.

- We propose a new VQA model with natural language explanation with memory retrieval for answer and explanation.

Video Object Segmentation

June. 2022 - June. 2023

E. K. Cho, M. K. Kim, H. I. Kim, J. Y. Moon and S. T. Kim[†]. “Exploiting recollection effects for memory-based video object segmentation.” Image and Vision Computing, published

- We propose a novel strategy for constructing and managing memory for video object segmentation.
- We proposed the method can be used as a plug-in-play manner.

PUBLICATIONS

International Conference Papers

[1] M. K. Kim, H. B. Kim, J. Y. Moon, J. W. Choi[†] and S. T. Kim[†]

“Do You Remember? Dense Video Captioning with Cross-Modal Memory Retrieval.”
Computer Vision and Pattern Recognition (**CVPR**), Seattle, U.S.A., Jun. 2024.

[2] S. H. Lim, M. K. Kim, H. B. Kim, S. T. Kim[†]

“Retrieval-Augmented Natural Language Reasoning for Explainable Visual Question Answering.” International Conference on Image Processing, Integrating Image Processing with Large-Scale Language/Vision Models for Advanced Visual Understanding Workshop, Abu Dhabi, UAE, Oct. 2024.

International Journal Papers

[1] E. K. Cho, M. K. Kim, H. I. Kim, J. Y. Moon and S. T. Kim[†]

“Exploiting recollection effects for memory-based video object segmentation.”
Image and Vision Computing, 140, 2023.

PATENTS

[1] M. K. Kim, E. K. Cho, J. U. Kim and S. T. Kim

“Deep neural network uncertainty prediction device and method.”
Korean Patent Application (10-2023-0110754), Aug. 23, 2023.

RESEARCH PROJECTS

Video spatio-temporal localization for long-term memory analysis
Participating Researcher

2023 - Current
Funding: ETRI

EXPERIENCES

GPU Server System Administrator

2023 - Current

- Management of Cluster servers that has 370 GPUs with DeepOps and Slurm.

Teaching Assistant

2022 - 2023

- Web and Python Programming (SWCON104)

SKILLS

Language Skills

- Korean(native), English

Programming Skills

- Python, C/C++, Shell script, Linux

Deep Learning Libraries

- PyTorch, TensorFlow

REFEREES

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