Gyeong-hyeon Kim

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Research Interest

Machine Learning, Deep Learning, Computer Vision, and Video Understanding.

Specific Research Interest:

- Temporal Action Segmentation, Action Anticipation
- Continual Learning, Multi-modal Learning, Efficient Model Training

Education

Chung-Ang University *Mar. 2023 - Present*
Ph.D. degree in Computer Science and Engineering *Seoul, South Korea*
- Supervised by Prof. Eunwoo Kim

Chung-Ang University *Mar. 2021 - Feb. 2023*
M.S. in Computer Science and Engineering. *Seoul, South Korea*
- Dissertation title: *"Temporal Action Segmentation with Alleviating Local Context Fading"*
- GPA: 4.39/4.5
- Supervised by Prof. Eunwoo Kim

Chung-Ang University *Mar. 2014 - Feb. 2021*
B.S. degree in Computer Science and Engineering *Seoul, South Korea*
- GPA: 3.81/4.5

Publications

(∗: Equal contributions)

Mitigating Class Confusion in Class-incremental Semantic Segmentation *2024*
Nayoung Ko∗, **Gyeong-hyeon Kim**∗, and Eunwoo Kim
Under Review

Action-incremental Learning for Temporal Action Segmentation *2024*
Gyeong-hyeon Kim, Hyundong Jin, Dongyoon Han, and Eunwoo Kim
Under Review

Similarity-Aware Class Discrimination in Class-Incremental Semantic Segmentation *Oct. 2024*
Gyeong-hyeon Kim∗, Nayoung Ko∗, and Eunwoo Kim
15th International Conference on Information and Communication Technology Convergence (*ICTC*), 2024

Growing a Brain with Sparsity-Inducing Generation for Continual Learning *Oct. 2023*
Hyundong Jin, **Gyeong-hyeon Kim**, Chanho Ahn, and Eunwoo Kim
Proceedings of the IEEE/CVF International Conference on Computer Vision (***ICCV***), 2023

GhostNeXt: Rethinking Module Configurations for Efficient Model Design *Mar. 2023*
Kiseong Hong, **Gyeong-hyeon Kim**, and Eunwoo Kim
Applied Sciences, vol. 13, no. 5, p. 3301

Stacked Encoder-Decoder Transformer with Boundary Smoothing for Action Segmentation *Dec. 2022*
Gyeong-hyeon Kim, and Eunwoo Kim
Electronics Letters, vol. 58, no. 25, pp. 972-974

Projects

Time-Series Action Prediction and Segmentation *Mar. 2023 - Jul. 2024*
Funded by HD Hyundai Construction Equipment
- This project aims to develop high-performing and parameter-efficient deep learning models to learn and segment time-series actions for various construction equipments.

Customized Neural Architecture Search and Proposal *Mar. 2021 - Oct. 2021*

Funded by Samsung SDS

- This project aims to develop customized neural architecture search technology for visual tasks.
- Co-worked with Samsung SDS AI Vision Lab.

Pose Estimation for Bin-Picking with a 3D Model *Oct. 2020 - Dec. 2020*

Funded by Doosan Digital Innovation

- This project develops exact 6D pose estimation and instance segmentation algorithms for a bin-picking problem of a robot.

Honors and Awards

1st Place, The 3rd Big Data Idea Competition by Doosan Enerbility *Dec. 2023*

2nd Place, The 2nd Big Data Idea Competition by HD Hyundai Site Solutions *Aug. 2023*

CAU GRS Scholarship for Ph.D. Course, Chung-Ang University *Mar. 2023 - Feb. 2025*

CAU GRS Scholarship for M.S. Course, Chung-Ang University *Mar. 2021 - Feb. 2023*

3rd Place, Artificial Intelligence Problem Solving Contest by National IT Industry Promotion Agency (NIPA) *Dec. 2020*

3rd Place, Davinci Open Source SW·AI Deep Learning Hackathon by Chung-Ang University *Sep. 2020*

Patents

Apparatus and Method for Classifying Motion of Objects in Video *May. 2023*

Eunwoo Kim, and **Gyeong-hyeon Kim**

- Korea patent (applied) No. 10-2023-0056528

Leadership and Volunteering

Samsung Junior Software Cup *Sep. 2020 - Nov. 2020*

College Student Mentor

- Mentored elementary, middle, and high school students as a college student mentor with an employee mentor.
- Conducted mentoring and feedback for the software implementation of mentee's ideas.

Teaching Experience

Teaching Assistant:

2025-Spring Advanced Artificial Intelligence (55697)

2024-Spring Machine Learning (54616)

2022-Spring Capstone Design (56120)

2021-Spring Algorithms (13601)

Skills

Languages:

Python, C/C++, Java

Machine Learning Tools:

PyTorch, TensorFlow

Communications:

Korean, English