DAHYE KIM

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RESEARCH INTERESTS

Image generation / Diffusion models

Interpretability / Safety

Video Understanding

EDUCATION

Boston University MA, United States
PhD Student in Computer Science *Sep. 2024 - Present*
- Advisor: Prof. Deepti Ghadiyaram

Yonsei University Seoul, South Korea
M.S. of Electrical & Electronic Engineering *Sep. 2022 - Aug. 2024*
- Advisor: Prof. Kwanghoon Sohn

Yonsei University Seoul, South Korea
B.S. of Electrical & Electronic Engineering *Mar. 2020 - Aug. 2022*
- Cumulative GPA: 4.0/4.0 (Class Rank: 2/224)

Hongik University Seoul, South Korea
Electronic & Electrical Engineering *Mar. 2018 - Feb. 2020*
- Cumulative GPA: 3.77/4.0

PREPRINTS

1. **Dahye Kim**, Deepti Ghadiyaram "Concept Steerers: Leveraging K-Sparse Autoencoders for Controllable Generations," *arXiv preprint arXiv:2501.19066*.

2. **Dahye Kim***, Xavier Thomas*, Deepti Ghadiyaram "*Revelio*: Interpreting and leveraging visual semantic information in diffusion models," *arXiv preprint arXiv:2411.16725*.

PUBLICATIONS

1. **Dahye Kim**, Jungin Park, Jiyoung Lee, Seongheon Park, and Kwanghoon Sohn (2023), "Language-free Training for Zero-shot Video Grounding," In *Proceedings of the IEEE/CVF Winter Conference on Applications of Computer Vision*.

2. Seongheon Park, Hanjae Kim, Minsu Kim, **Dahye Kim**, and Kwanghoon Sohn (2023), "Normality Guided Multiple Instance Learning for Weakly Supervised Video Anomaly Detection," In *Proceedings of the IEEE/CVF Winter Conference on Applications of Computer Vision*.

RESEARCH EXPERIENCES

Boston University *Sep. 2024 – Present*
Research Assistant (Advisor: Prof. Deepti Ghadiyaram)
- Interpretability in Generative Models

Digital Image Media Lab., Yonsei University *Sep. 2022 – Jul. 2024*
Research Assistant (Advisor: Prof. Kwanghoon Sohn)
- Multi-modal Learning with Visual and Textual Representation
- Anomaly Detection and Open-Set Recognition for Computer Vision

Digital Image Media Lab., Yonsei University *Jan. 2021 - Aug. 2022*
Undergraduate Research Assistant (Advisor: Prof. Kwanghoon Sohn)
- Human-object Interaction (HOI) Detection
- Video Understanding

HONORS AND SCHOLARSHIPS

Honors

- High Honors Student (Top 3% of department) *Fall 2020, Spring 2021, Fall 2021*
- Honors Student (Top 10% of department) *Spring 2020*

Scholarships

- Brain Korea 21 (BK21) Scholarship, National Research Foundation of Korea *Sep. 2022 - July. 2024*
- Automotive System IC Scholarship, *Sep. 2022 - July. 2024*
  Automotive System IC Fusion Human Resource Research Center
- Teaching Assistant Scholarship, Yonsei University ($ 3,500 total) *Fall 2022, Fall 2023*
- Graduate Student Research Assistant Scholarship, Yonsei University ($ 3,500) *Fall 2022*
- Academic Excellence Scholarship, Yonsei University ($ 3,600 total) *Spring 2021, Fall 2021*
- National Science and Technology Scholarship ($ 3,600), *Fall 2020*
  National Research Foundation of Korea
- Academic Excellence Scholarship, Hongik University ($ 6,300 total) *Fall 2018, Spring 2019, Fall 2019*

PROJECTS

Yonsei University-Yonsei Signature Research Cluster *Sep. 2022 - Jul. 2024*

- Project Title: Development of Multimodal-based General-purpose Social Artificial Intelligence Technology
- Scope: Multi-Modal Learning, Zero-Shot Learning, Meta-Learning

Ministry of Science and ICT, Mid-Level Research *Sep. 2022 - Aug. 2023*

- Project Title: Development of Complex Situational Awareness and Prediction Technology through Multi-Modal Data Fusion and Social Artificial Intelligence
- Scope: Multi-modal Learning, Video Understanding

Korea Institute of Science and Technology (KIST) *Sep. 2022 - Aug. 2023*

- Project Title: Deep Identification and Tracking of Missing Person in Heterogeneous CCTV
- Scope: Object Detection, Object Tracking, Person Re-Identification, Anomaly Detection

SERVICES

Workshop Organizer

- XAI4CV: Explainable Artificial Intelligence for Computer Vision (CVPR 2025)

PATENTS

Korean Patent No. 10-2023-0054355 (Video Moment Retrieval)

TEACHING EXPERIENCES

CS 541: Applied Machine Learning *Spring 2025*
EEE 3313: Introductory Digital Labs *Fall 2023*
EEE 2060: Signals and Systems *Fall 2022*

SELECTED COURSEWORK

Artificial Intelligence: Introduction Artificial Intelligence (A), Intelligent Control (A), Multimodal Deep Learning (A), Digital Image Processing (A), Medical Imaging System and its Application for Artificial Intelligence (A), Topics in Computer Vision (A), and Special Topics for Deep Learning (A)

Mathematics: Linear Algebra (A), Mathematical Statistics (A), Probability and Random Variables (A), Random Process (A), and Information Theory (A)

Programming: Data Structure and Algorithms (A), and Operating Systems (A)

OTHER SKILLS

Language and Tools: Python, MATLAB, C/C++, PyTorch, Linux Shell, LaTeX
Language Ability: English (fluent), Korean (native)