Sunghyun Ahn

AI Researcher @ DELAB, Yonsei University

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Education

Yonsei University Seoul, Korea
M.S. in Computer Science Graduated, 2025
GPA: 4.33 / 4.5

The Catholic University of Korea Seoul, Korea
B.S. in Computer Science Graduated, 2023
GPA: 4.17 / 4.5 (Rank: 4/51)

Experience

Researcher Data Engineering LAB 2022 - 2025

- Conducted research on deep learning, medical image segmentation, and video anomaly detection.
- **Graduation thesis:** VideoPatchCore: An Effective Method to Memorize Normality for Video Anomaly Detection *[Paper] [Presentation]*

Undergraduate Research Assistant Computer Vision and Machine Intelligence LAB 2021 - 2022

- Conducted research on object detection for smart farm while studying computer vision methodologies. *[Project]*

International Papers *(* Equal contribution)*

P1 **AnyAnomaly: Zero-shot Customizable Video Anomaly Detection with LVLM**
Sunghyun Ahn*, Youngwan Jo*, Kijung Lee, Sein Kwon, Inpyo Hong, and Sanghyun Park
arXiv, Preprint [Paper] [Github]

P2 **MDVAD: Multimodal Diffusion for Video Anomaly Detection**
Kijung Lee, Youngwan Jo, Sunghyun Ahn, and Sanghyun Park
Pacific-Asia Conference on Knowledge Discovery and Data Mining (PAKDD), Sydney, AUS, 2025 (BK list, IF=1)

P3 **Advanced Knowledge Transfer: Refined Feature Distillation for Zero-Shot Quantization in Edge Computing**
Inpyo Hong, Youngwan Jo, Hyojeong Lee, Sunghyun Ahn, and Sanghyun Park
ACM/SIGAPP Symposium On Applied Computing (SAC), Sicily, Italy, 2025 (BK list, IF=1) [Paper]

P4 **VideoPatchCore: An Effective Method to Memorize Normality for Video Anomaly Detection**
Sunghyun Ahn, Youngwan Jo, Kijung Lee, and Sanghyun Park
Asian Conference on Computer Vision (ACCV), Hanoi, Vietnam, 2024 (BK list, IF=1) [Paper] [Github] [Project]

P5 **Making Anomalies More Anomalous: Video Anomaly Detection Using a Novel Generator and Destroyer**
Seungkyun Hong*, Sunghyun Ahn*, Youngwan Jo, and Sanghyun Park
SCI(E), IEEE Access, 2024 [Paper] [Github] [Project]

P6 **Dual Stream Fusion U-Net Transformers for 3D Medical Image Segmentation**
Seungkyun Hong*, Sunghyun Ahn*, Youngwan Jo, and Sanghyun Park
IEEE International Conference on Big Data and Smart Computing (BigComp), Bangkok, Thailand, 2024 [Paper] [Github] [Project]

Domestic Papers

P1 **Anomaly LVLM: Customizable Video Anomaly Detection using Large Vision-Language Model**
Sunghyun Ahn, Youngwan Jo, Kijung Lee, Sein Kwon, and Sanghyun Park
Korea Software Congress, Yeosu, Korea, 2024 [Paper] [Project]

P2 **MSPD: A Multi-Scale PD Network for Self-Supervised Low-Dose CT Denoising**
Eunji Kim, Sunghyun Ahn, Hyojeong Lee, and Sanghyun Park
Korea Software Congress, Yeosu, Korea, 2024 [Paper]

P3 **DQ-ResUNet: Optimization Based on Dynamic Quantization for Improving the Efficiency of Medical Image Segmentation**
Inpyo Hong, Youngwan Jo, Sunghyun Ahn, Eunji Kim, Sein Kwon, and Sanghyun Park
Korea Computer Congress, Jeju, Korea, 2024 [Paper]

P4 **FFAE: Video frame pre-processing and Feature Fusion method for Anomaly Detection**
Kijung Lee, Sunghyun Ahn, Hyunjin Kim, and Sanghyun Park
Korea Software Congress, Pusan, Korea, 2023 [Paper]

P5 **C-Swin UNETR: Swin Transfomer with Channel Attention for 3D Medical Image Segmentation**
Sunghyun Ahn, Hwanhee Kim, Sein Kwon, and Sanghyun Park
Korea Computer Congress, Jeju, Korea, 2023 [Paper] [Project]

P6 **Attention based Single Object Tracking Model In Multiple Object Video**
Sunghyun Ahn, Youngwan Jo, and Sanghyun Park
Korea Software Congress, Jeju, Korea, 2022 [Paper] [Project]

Patents

P1 **Multi-Modal Diffusion-Based Video Anomaly Detection Method and device utilizing it**
Kijung Lee, Youngwan Jo, Sunghyun Ahn, and Sanghyun Park
Domestic patent, 10-2024-0055081, 2024

P2 **F2LM-Based Video Anomaly Detection Method and device utilizing it**
Seungkyun Hong, Sunghyun Ahn, Youngwan Jo, and Sanghyun Park
Domestic patent, 10-2024-0055080, 2024

P3 **Image segmentation method using dual attention and the device utilizing it**
Seungkyun Hong, Sunghyun Ahn, Youngwan Jo, and Sanghyun Park
International patent, PCT/KR2023/020370, 2023

Awards and Honors

Best Presentation Paper Award, Korea Software Congress *[Project]* 2025
Academic Excellence Award, The Catholic University of Korea 2023
Grand Award, Capstone Design Contest *[Project]* 2022
Top 9, University Financial Security Camp Idea Competition *[Project]* 2022

Academic Services

Reviewer, Pattern Recognition journal (PR) 2024
Reviewer, AAAI Conference on Artificial Intelligence (AAAI) 2023, 2024
Reviewer, IEEE International Conference on Big Data and Smart Computing (BigComp) 2023, 2024
Reviewer, Asia-Pacific Web Conference (APWeb) 2023

Teaching

Short Courses, Application In Database Systems, Yonsei University *[View]* 2024
Teaching Assistant, Introduction to Computer Science, Yonsei University 2023, 2024
Teaching Assistant, Deep Learning based Anomaly Detection Modeling, Yonsei University *[View]* 2023

Skills

Programming Languages: Python, Javascript, Java, C
Tools and Frameworks: PyTorch, Django, NodeJS, Spring, LaTeX
Languages: Korean (native), English (intermediate)

References

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