Sunghyun Ahn

M.S. Student @ DELAB, Yonsei University

skd@yonsei.ac.kr | Tech Blog | GitHub | LinkedIn

Education

Yonsei University Seoul, Korea
M.S. in Computer Science 2023 - 2024
GPA: 4.31 / 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

M.S. Student Data Engineering LAB 2023 - 2024

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

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

- Conducted research on object detection for smart farm, involving labeling, training, and inference processes while studying computer vision and object detection methodologies. *[Project]*

International Papers

P1 **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]

P2 **Making Anomalies More Anomalous: Video Anomaly Detection Using a Novel Generator and Destroyer**
Seungkyun Hong*, Sunghyun Ahn*, Youngwan Jo, and Sanghyun Park. (*equally contributed)
SCI(E), IEEE Access, 2024 [Paper] [Github] [Project]

P3 **Dual Stream Fusion U-Net Transformers for 3D Medical Image Segmentation**
Seungkyun Hong*, Sunghyun Ahn*, Youngwan Jo, and Sanghyun Park. (*equally contributed)
IEEE International Conference on Big Data and Smart Computing (BigComp), Bangkok, Thailand, 2024 [Paper] [Github] [Project]

Domestic Papers

P1 **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]

P2 **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]

P3 **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]

P4 **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

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 2024
Reviewer, AAAI Conference on Artificial Intelligence (AAAI) 2023, 2024
Reviewer, IEEE International Conference on Big Data and Smart Computing (BigComp) 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

Sanghyun Park, Ph.D.
Professor, Yonsei University *sanghyun@yonsei.ac.kr*
Department of Computer Science