Chanyoung Kim

Curriculum Vitae

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Research Interests

Computer Vision, Unsupervised Open-Vocabulary Image and Video Semantic Segmentation,
Multi-modal Image Synthesis, Audio-Visual Representation

Education

Yonsei University — Seoul, Republic of Korea
Ph.D. Student in Artificial Intelligence — *Sep. 2023 – Aug. 2028 (Exp.)*
Advisor : Prof. Seong Jae Hwang

Sejong University — Seoul, Republic of Korea
B.S. in Intelligent Mechatronics Engineering — *Mar. 2017 – Feb. 2023*

Publications *(* Equal contribution)*

[1] **Chanyoung Kim***, W. Han*, D. Ju, S. J. Hwang, "EAGLE: Eigen Aggregation Learning for Object-Centric Unsupervised Semantic Segmentation", *CVPR 2024* (Highlight, AR $\leq$ 2.8%) [PDF]
[2] W. Han*, **Chanyoung Kim***, D. Ju, Y. Shim, S. J. Hwang, "Advancing Text-Driven Chest X-Ray Generation with Policy-Based Reinforcement Learning", *MICCAI 2024* (Spotlight, AR $\leq$ 3.4%) [PDF]
[3] W. Roh, G. Chang, S. Moon, G. Nam, **Chanyoung Kim**, Y. Kim, J. Kim, S. Kim, "ORA3D: Overlap Region Aware Multi-view 3D Object Detection", *BMVC 2022* [PDF]
[4] S. H. Lee, G. Oh, W. Byeon, **Chanyoung Kim**, W. Ryoo, S. H. Yoon, H. Cho, J. Bae, J. Kim, S. Kim, "Sound-Guided Semantic Video Generation", *ECCV 2022* [PDF]
[5] S. H. Lee, W. Roh, W. Byeon, S. H. Yoon, **Chanyoung Kim**, J. Kim, S. Kim, "Sound-Guided Semantic Image Manipulation", *CVPR 2022* [PDF]

Preprints

[6] **Chanyoung Kim**, D. Ju, W. Han, M. Yang, S. J. Hwang,"Distilling Spectral Graph for Object-Context Aware Open-Vocabulary Semantic Segmentation", *arXiv Preprint* [PDF]
[7] S. H. Lee*, **Chanyoung Kim***, W. Byeon, S. H. Yoon, J. Kim, S. Kim,"LISA: Localized Image Stylization with Audio via Implicit Neural Representation", *arXiv Preprint* [PDF]

Workshop Publications

[8] **Chanyoung Kim***, W. Han*, D. Ju, S. J. Hwang, "EAGLE: Eigen Aggregation Learning for Object-Centric Unsupervised Semantic Segmentation", *CVPRW 2024 - Causal and Object-Centric Representations for Robotics*
[9] S. H. Lee, N. Lee, **Chanyoung Kim**, W. Ryoo, J. Kim, S. H. Yoon, S. Kim, "Audio-Guided Image Manipulation for Artistic Paintings", *NeurIPSW 2022 - ML for Creativity and Design*

Research Experience

Medical Imaging & Computer Vision Lab @ Yonsei University — Mar. 2023 – Present
Advisor: Prof. Seong Jae Hwang

- Semantic Segmentation *(collaborating with Prof. Ming-Hsuan Yang @ UC Merced & Google DeepMind)*
- Multi-modal Image Synthesis

Computer Vision Lab @ Korea University — Feb. 2021 – Dec. 2022
Undergrad Research Intern

- Multi-modal Representation Learning *(collaborated with Dr. Wonmin Byeon @ NVIDIA Research)*
- 3D Computer Vision with Event Camera *(collaborated with Dr. Giljoo Nam @ Meta Reality Lab)*

Academic Service

Conference (Workshop) Organizer

- *MICCAI 2025 Student Board - Local Student Liaison Officer*

Conference Reviewer

- *European Conference on Computer Vision (ECCV) 2024*
- *IEEE/CVF Computer Vision and Pattern Recognition Conference (CVPR) 2024, 2025*
- *IEEE/CVF Winter Conference on Applications of Computer Vision (WACV) 2023, 2025*

Skills

Programming

- Fluent in Python, Deep Learning Frameworks (Pytorch, Pytorch Lightning, TensorFlow), Python Libraries (Diffusers, Hugging Face, MMCV, Scikit-Learn, etc), Shell Script, Git, LaTeX
- Have foundation for C, Photoshop

Languages

- Native speaker in Korean
- Fluent in English *(2 years at Mckinley School, Pasadena, CA, United States (2006 – 2008))*

Teaching Experience

Yonsei University Sep. 2023 – Present

- Teaching Assistant: "Deep Learning Introduction and Applications" (Spring 2024)
- Teaching Assistant: "Computer Vision" (Fall 2023)

Project Experiences

Detecting TMJ MRI Abnormalities Using TMJ Tomographic Imaging Sep. 2023 – Present

- Won the Best Oral Presentation Award at The American Academy of Orofacial Pain Conference 2024.
- Funded by *National Research Foundation of Korea (NRF)* and *Yonsei University.*

Personal Privacy Free Autonomous Flight Drone Platform with Event Camera Jul. 2021 – Feb.2022

- Funded by *National Research Foundation of Korea (NRF)* and *George Washington University.*

Ultra-Light Weight Image Classification Model for Edge Computing Systems Feb. 2021 – Jun. 2021

- Developed light weight food image classification model for GE Appliances oven.
- Funded by *GE Appliances.*

Awards & Honors

Excellent Academic Paper Award (Fall 2024) *Yonsei University* Jan. 2025
LAB Start-up 2022 *1st / 12 teams* Feb. 2022
Korea University π-ville Demo Day 2021 *2nd / 13 teams* Sep. 2021
Sejong Scholarship for Outstanding GPA *3rd / 142 people* Sep. 2021
Seoul PM Hackathon *5th / 62 teams* Jun. 2019
XXIII Pyeongchang Olympic Winter Games *Medal of Contribution* Feb. 2018

References

Prof. Seong Jae Hwang *(PhD Advisor)* Assistant Professor at Yonsei University, Seoul, S.Korea
Prof. Ming-Hsuan Yang Research Scientist & Professor at UC Merced & Google DeepMind
Dr. Wonmin Byeon Research Scientist at NVIDIA Research, Santa Clara, CA