# Chanyoung Kim

**Curriculum Vitae**

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## RESEARCH INTERESTS

Vision-language alignment for visual dense prediction, Spectral and graph-theoretic approaches to vision representation, Task-specific crafting of image representations from foundation models

## 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**, D. Ju, W. Han, M. Yang, S. J. Hwang, "Distilling Spectral Graph for Object-Context Aware Open-Vocabulary Semantic Segmentation", *CVPR 2025* [PDF]

[2] W. Han, Y. Lee, **Chanyoung Kim**, S. J, Hwang, "Spatial Transport Optimization by Repositioning Attention Map for Training-Free Text-to-Image Synthesis", *CVPR 2025* [PDF]

[3] **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]

[4] 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]

[5] 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]

[6] 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]

[7] 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

[8] **Chanyoung Kim***, D. Ju*, J. Kim, W. Han, R. Alcover-Couso, S. J. Hwang, "Pathology-Aware Adaptive Watermarking for Text-Driven Medical Image Synthesis", *arXiv Preprint* [PDF]

[9] D. Kim, H. Ko, **Chanyoung Kim**, S. J. Hwang, "Fourier Decomposition for Explicit Representation of 3D Point Cloud Attributes", *arXiv Preprint* [PDF]

[10] 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

[11] **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*

[12] 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**
- *IEEE/CVF Computer Vision and Pattern Recognition Conference (CVPR) 2024, 2025*
- *IEEE/CVF International Conference on Computer Vision (ICCV) 2025*
- *European Conference on Computer Vision (ECCV) 2024*
- *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, 2025)
- 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

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| **Excellent Academic Paper Award (Fall 2024)** | *Yonsei University* | Jan. 2025 |
| **LAB Start-up 2022** | *1st / 12 teams* | Feb. 2022 |
| **Korea University $\pi$-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

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|---|---|
| **Prof. Seong Jae Hwang** *(PhD Advisor)* | Associate Professor at Yonsei University |
| **Prof. Ming-Hsuan Yang** | Research Scientist & Professor at Google DeepMind & UC Merced |
| **Dr. Wonmin Byeon** | Research Scientist at NVIDIA Research |
| **Dr. Roberto Alcover-Couso** | Applied Scientist at Amazon |