

Seoha Kim

✉ seoha.kim@student.unimelb.edu.au | 🏠 seoha-kim.github.io | 📧 seoha-kim | 📺 kseoha7

Summary

Research Interest Dynamic 3D Understanding/Reconstruction, Vision-Language Models, Multimodal Large Language Models, Scene Graphs
Current Focus Feed-forward dynamic 3D gaussian splatting for egocentric videos

Education

University of Melbourne

PhD Student in Computing and Information Systems co-supervised by [Prof. Taehyun Rhee](#) and [Prof. Kris Ehinger](#)

2026.2 -

Melbourne, Australia

Yonsei University

Master in Artificial Intelligence supervised by [Prof. Youngjung Uh](#)

2022.3 - 2024.8

Seoul, South Korea

Yonsei University

Bachelor in Business Administration and Cognitive Science, Double Major

2015.3 - 2021.2

Seoul, South Korea

Selected Papers

Hand-4DGS: Feed-Forward 3D Gaussian Splatting for 4D Hand Reconstruction from Egocentric Videos

Under Review

SEOHA KIM*, JEONGMIN BAE*, YOUNGJUNG UH, MARC POLLEFEYS, MADHI RAD, TAEIN KWON

- This paper proposes a shared network for egocentric hand reconstruction without per-scene optimization

Per-Gaussian Embedding based Deformation for Deformable 3D Gaussian Splatting

ECCV 2024

JEONGMIN BAE*, SEOHA KIM*, YOUNGSIK YUN, HAHYUN LEE, GUN BANG, YOUNGJUNG UH

- This paper demonstrates that existing deformable 3D Gaussian Splatting models fail to reconstruct complex dynamic scenes and addresses this by replacing the input of the deformation function with learnable embeddings

Optimizing Dynamic NeRF and 3DGS with No Video Synchronization

ECCV 2024 Wild3D

SEOHA KIM*, JEONGMIN BAE*, YOUNGSIK YUN, HAHYUN LEE, GUN BANG, YOUNGJUNG UH

- This paper is an extension of 'Sync-NeRF' with the addition of 3D Gaussian Splatting based methods

Sync-NeRF: Generalizing Dynamic NeRFs to Unsynchronized Videos

AAAI 2024

SEOHA KIM*, JEONGMIN BAE*, YOUNGSIK YUN, HAHYUN LEE, GUN BANG, YOUNGJUNG UH

- This paper demonstrates the failure of existing models in dynamic scene reconstruction from *unsynchronized* multi-view videos and proposes a solution by introducing per-camera time offsets to model calibrated time-dependent representations

Co-author Papers

Efficient 4D Scaffold Gaussian Splatting with Dynamic-Aware Anchor Growing

AAAI 2026

WOONG OH CHO, IN CHO, SEOHA KIM, JEONGMIN BAE, YOUNGJUNG UH, SEON JOO KIM

- This paper reveals temporal redundancy in existing 4D Gaussian Splatting and proposes a dynamic-aware anchor growing method for efficiency

Compensating Spatiotemporally Inconsistent Observations for Online Dynamic 3D Gaussian Splatting

SIGGRAPH 2025

YOUNGSIK YUN, JEONGMIN BAE, HYUNSEUNG SON, SEOHA KIM, HAHYUN LEE, GUN BANG, YOUNGJUNG UH

- This paper identifies temporal inconsistency in online dynamic reconstruction and addresses them using a learnable spatio-temporal map

Rethinking Open-Vocabulary Segmentation of Radiance Fields in 3D Space

AAAI 2025

HYUNJEE LEE*, YOUNGSIK YUN*, JEONGMIN BAE, SEOHA KIM, YOUNGJUNG UH

- This paper aims to perform open-vocabulary semantic segmentation *in 3D space* and proposes an evaluation protocol that assesses 3D geometry and segmentation simultaneously

Research Collaboration

Meta Reality Labs & Microsoft Zurich	2024.9 -
<ul style="list-style-type: none">Proposed feed-forward Gaussian Splatting for dynamic 3D hand reconstruction from egocentric videos.	Remote
Electronics and Telecommunications Research Institute (ETRI)	2023.1 - 2024.6
<ul style="list-style-type: none">Proposed novel dynamic Gaussian Splatting representation for high-quality view synthesis in dynamic scenes.Developed method for training dynamic NeRFs on unsynchronized multi-view videos	Seoul, South Korea
LG Display	2022.2 - 2022.12
<ul style="list-style-type: none">Developed knowledge distillation method for panel defect classification using patch-level feature similarity.	Seoul, South Korea

Work Experience

Post-Master' s Research Fellow, ETRI	2025.2 – 2025.12
<ul style="list-style-type: none">Enhancing dynamic 3D hand reconstruction and pose accuracy with multiple egocentric hand videos	
Machine Learning Engineer, Plask	2021.3 – 2021.8
<ul style="list-style-type: none">Improving the accuracy of 3D pose estimation from videos, reviewing and implementing State-of-the-Art papers	
Data Scientist Intern, Hyundai Mobis	2019.9 – 2020.2
<ul style="list-style-type: none">Improving the accuracy of defect classification on structured factory datasets: motor noise, CT pattern, and solder line	

Scholarships

Melbourne Research Scholarship, University of Melbourne	2026
<ul style="list-style-type: none">Full PhD funding including tuition waiver and living stipend	

Awards

1st place Minister’s Award, AID Korea	2021
<ul style="list-style-type: none">Animal Datathon Korea - Cow keypoint detection	
Top 2% Silver Medal, Kaggle	2021
<ul style="list-style-type: none">Cassava leaf disease classification - Image classification	
5th place, Seoul National University Hospital	2021
<ul style="list-style-type: none">Sleep AI Challenge - Sleep stages classification through polysomnography result images	

Patents

KR 10-2024-0043684	Method and apparatus for dynamic Gaussian splatting using embedding-based deformation	2024
KR 10-2023-0105173	Method and apparatus for representing dynamic neural radiance fields from unsynchronized videos	2023
KR 10-2020-0022362	Apparatus of diagnosing noise quality of motor	2020