

Dogyoon Lee

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CURRENT POSITION	Samsung Research , Seoul, Republic of Korea <i>Staff Research Engineer</i>	Sep 2024 - Present
EDUCATION	Yonsei University , Seoul, Republic of Korea <i>College of Engineering</i> M.S. /Ph.D. Student in Electrical and Electronic Engineering Advisor: Professor Sang Y. Lee Research Area: 3D Computer Vision (Neural Rendering and Its Applications) Yonsei University , Seoul, Republic of Korea <i>Department of Electrical and Electronic Engineering</i> Bachelor of Science in Electrical and Electronic Engineering	Mar. 2019 - Aug. 2024 Mar. 2012 - Feb. 2019
PUBLICATIONS	[CVPR '25] CoCoGaussian: Leveraging Circle of Confusion for Gaussian Splatting from Defocused Images Jungho Lee, Suhwan Cho, Taeoh Kim, Ho-Deok Jang, Minhyeok Lee, Geonho Cha, Dongyoon Wee, <u>Dogyoon Lee</u> , Sangyoun Lee The 35th <i>IEEE Conference on Computer Vision and Pattern Recognition (CVPR)</i> , 2025 Acceptance rate: 2878/13008 \approx 22.1% [ECCV '24] ProDepth: Boosting Self-Supervised Multi-Frame Monocular Depth with Probabilistic Fusion Sungmin Woo*, Wonjoon Lee*, WooJin Kim, <u>Dogyoon Lee</u> , Sangyoun Lee The 18th <i>European Conference on Computer Vision (ECCV)</i> , 2024 Acceptance rate: 2395/8585 \approx 27.9% • https://github.com/Sungmin-Woo/ProDepth [CVPR '24] Dual Prototype Attention for Unsupervised Video Object Segmentation Suhwan Cho, Minhyeok Lee, Seunghoon Lee, <u>Dogyoon Lee</u> , Sangyoun Lee The 34th <i>IEEE Conference on Computer Vision and Pattern Recognition (CVPR)</i> , 2024 Acceptance rate: 2719/11532 \approx 23.58% • https://github.com/Hydragon516/DPA [CVPR '24] Guided Slot Attention for Unsupervised Video Object Segmentation Minhyeok Lee, Suhwan Cho, <u>Dogyoon Lee</u> , Chaewon Park, Jungho Lee, Sangyoun Lee The 34th <i>IEEE Conference on Computer Vision and Pattern Recognition (CVPR)</i> , 2024 Acceptance rate: 2719/11532 \approx 23.58% • https://github.com/Hydragon516/GSANet [CVPR '23] DP-NeRF: Deblurred Neural Radiance Field with Physical Scene Priors <u>Dogyoon Lee</u> , Minhyeok Lee, Chajin Shin, Sangyoun Lee The 33th <i>IEEE Conference on Computer Vision and Pattern Recognition (CVPR)</i> , 2023 Acceptance rate: 2359/9155 \approx 25.8% • https://github.com/dogyoonlee/DP-NeRF [ICCV '23] Hierarchically Decomposed Graph Convolutional Networks for Skeleton-Based Action Recognition Jungho Lee, Minhyeok Lee, <u>Dogyoon Lee</u> , Sangyoun Lee The 19th <i>IEEE International Conference on Computer Vision (ICCV)</i> , 2023 Acceptance rate: 2155/8620 \approx 25.0%	

- <https://github.com/Jho-Yonsei/HD-GCN>

[ICIP '23] TSANet: Temporal and Scale Alignment for Unsupervised Video Object Segmentation

Seunghoon Lee, Suhwan Cho, Dogyoon Lee, Minhyeok Lee, Sangyoun Lee

The 30th *IEEE International Conference on Image Processing (ICIP)*, 2023

[PR '23] Multidimensional Feature Representation for Point Cloud Analysis

Sungmin Woo, Dogyoon Lee, Sangwon Hwang, Sangyoun Lee

Pattern Recognition (PR), 2023

[ECCV '22] Expanded Adaptive Scaling Normalization for End-to-End Image Compression

Chajin Shin, Hyeongmin Lee, Hanbin Son, Sangjin Lee, Dogyoon Lee, Sangyoun Lee

The 17th *European Conference on Computer Vision (ECCV)*, 2022

Acceptance rate: 1645/6773 \approx 28.0%

- <https://github.com/ChajinShin/EASN>

[WACV '22] Robust Lane Detection via Expanded Self attention

Minhyeok Lee, Junhyeop Lee, Dogyoon Lee, Woojin Kim, Sangwon Hwang, Sangyoun Lee

The 26th *IEEE Winter Conference on Applications of Computer Visio (WACV)*, 2022

Acceptance rate: 406/1172 \approx 34.64%

- <https://github.com/Hydragon516/ESA-official>

[CVPR '21] Regularization Strategy for Point Cloud via Rigidly Mixed Sample

Dogyoon Lee, Jaeha Lee, Junhyeop Lee, Hyeongmin Lee, Minhyeok Lee, Sungmin Woo, Sangyoun Lee

The 31st *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, 2021

Acceptance rate: 1661/7015 \approx 23.7%

- <https://github.com/dogyoonlee/RSMix>

[ICT '21] 3D Mesh Transformation Preprocessing System in the Real Space for Augmented Reality Services

Young-Suk Yoon, Sangwon Hwang, Dogyoon Lee, Sangyoun Lee, Jae-Won Suh, Sung-Uk Jung

ICT Express (ICT Express), 2021

[ICIP '20] False Positive Removal For 3D Vehicle Detection with Penetrated Point Classifier

Sungmin Woo, Sangwon Hwang, Woojin Kim, Junhyeop Lee, Dogyoon Lee, Sangyoun Lee

The 27th *IEEE International Conference on Image Processing (ICIP)*, 2020

SKILLS

- **Languages:** Python, C++, MATLAB
- **Frameworks:** TensorFlow, Pytorch, CUDA, OpenCL
- **Platforms:** Linux, Windows, GPU

PATENTS

DOMESTIC

- **Apparatus for Data Augmentation and Training Strategy on Point Cloud. (Registration - No. 10-2637318)**
with Sangyoun Lee, Sangwon Hwang, Sungmin Woo, Junhyeop Lee, Woojin Kim
- **Apparatus and Method for Depth Inpainting method on LiDAR Point Cloud (Registration - No. 10-2433632)**
with Sangwon Hwang, Sangyoun Lee, Junhyeop Lee, Woojin Kim, Sungmin Woo
- **Apparatus and Method for Moving Object Detection using Background Modeling based on Inpainting (Pending - Application No. 10-2021-0165052)**
with Woojin Kim, Sangyoun Lee, Sangwon Hwang, Junhyeop Lee, Sungmin Woo
- **Apparatus and Method for Correcting Errors of Detected Objects Based on Point Cloud (Registration - No. 10-2310790)**
with Sungmin Woo, Woojin Kim, Sangyoun Lee, Sangwon Hwang, Junhyeop Lee,

SERVICES

- **Program Committee & Reviewer,**

	<ul style="list-style-type: none"> ◦ IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR) 2022 ~ ◦ IEEE/CVF International Conference on Computer Vision (ICCV) 2023 ~ ◦ European Conference on Computer Vision (ECCV) 2022 ~ ◦ AAAI conference on Artificial Intelligence (AAAI) 2025 ~ ◦ IEEE International Conference on Robotics and Automation (ICRA) 2025 ~ ◦ IEEE/CVF Winter Conference on Applications of Computer Vision (WACV) 2023 ~ ◦ IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI) 2024 ~ ◦ IEEE Transactions on Circuits and Systems for Video Technology (TCSVT) 2023 ~ 	
OPEN-SOURCE	<ul style="list-style-type: none"> • ProDepth, https://github.com/Sungmin-Woo/ProDepth • DPA, https://github.com/Hydragon516/DPA • GSANet, https://github.com/Hydragon516/GSANet • DP-NeRF, https://github.com/dogyoonlee/DP-NeRF • HD-GCN, https://github.com/Jho-Yonsei/HD-GCN • EASN, https://github.com/ChajinShin/EASN • ESA, https://github.com/Hydragon516/ESA-official • RSMix, https://github.com/dogyoonlee/RSMix 	
PROJECT EXPERIENCE	<p>On-device Efficient 3D Object/Scene Modeling based on 3D Gaussian Splatting Jan, 2025 - Present <i>Samsung Research Researcher</i></p> <p>Camera ISP Modeling for Tetra burst images based on Neural Network Sep, 2024 - Dec, 2024 <i>Samsung Research Researcher</i></p> <p>Real-Time 4D Novel View Synthesis for Dynamic Scene from Sparse View Images April, 2024 - Aug, 2024 <i>Yonsei University Electronics and Telecommunications Research Institute (ETRI) Project Leader / Researcher</i></p> <p>Auto Labeling Real Point Cloud Data via Semi-supervised Classification April, 2021 - April, 2022 <i>Yonsei University Hyundai Motors Project Leader / Researcher</i></p> <p>3D Recognition for Autonomous Driving with Sparse Single- and Multi-LiDAR Mar, 2020 - Dec, 2021 <i>Yonsei University Mando Halla Company Project Leader / Researcher</i></p> <p>Surface Reconstruction of Actual 3D Space from RGB Images for Augmented Reality Jul, 2019 - Nov, 2020 <i>Yonsei University Electronics and Telecommunications Research Institute (ETRI) Researcher</i></p> <p>Natural Dense 3D Map Generation from Multi Sensors for Smart Vehicle System Jul, 2019 - Dec, 2021 <i>Yonsei University Institute of Information & Communications Technology Planning & Evaluation (IITP) Research Assistant</i></p>	
TEACHING EXPERIENCE	<p>Digital Signal Processing (Instructor: Prof. Sang Y. Lee), Yonsei University</p> <p><i>Teaching Assistant</i></p> <p>Course Summary: Learning to describe signals mathematically and understand how to perform mathematical operations on signals.</p>	Mar - Jun, 2019
RELEVANT COURSEWORKS	<p>Statistical Pattern Recognition</p> <p>Machine Learning and Its Application</p> <p>Probabilistic Robotics</p>	<p>Neural Network</p> <p>Digital Image Processing</p> <p>Random Process</p>

Probability and Random Variables

Data Structure and Algorithms

Signal and Systems

Operating Systems

Digital Signal Processing

Computer Architecture

Special Topics in Deep Learning

Special Topics in Computer Vision