

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	[TPAMI '25] Sparse-DeRF: Deblurred Neural Radiance Fields from Sparse View <u>Dogyoon Lee</u> , Donghyeong Kim, Jungho Lee, Minhyeok Lee, Sangyoun Lee <i>IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI)</i> , 2025 5-year Impact Factor: 22.2 [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% [CVPRW '25] SMURF: Continuous Dynamics for Motion-Deblurring Radiance Fields Jungho Lee, <u>Dogyoon Lee</u> , Minhyeok Lee, Donghyeong Kim, Sangyoun Lee The 35th <i>IEEE Conference on Computer Vision and Pattern Recognition (CVPRW)</i> , 2025 • https://github.com/Jho-Yonsei/SMURF [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

Dogyoon Lee, Minhyeok Lee, Chajin Shin, Sangyoun Lee

The 33th *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, 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, **Dogyoon Lee**, Sangyoun Lee

The 19th *IEEE International Conference on Computer Vision (ICCV)*, 2023

Acceptance rate: 2155/8620 \approx 25.0%

- <https://github.com/Jho-Yonse/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

5-year Impact Factor: 7.5

[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 Vision (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,**
 - 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

- **SMURF**, <https://github.com/Jho-Yonse/SMURF>
- **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-Yonse/HD-GCN>
- **EASN**, <https://github.com/ChajinShin/EASN>
- **ESA**, <https://github.com/Hydragon516/ESA-official>
- **RSMix**, <https://github.com/dogyoonlee/RSMix>

PROJECT

EXPERIENCE

- On-device Efficient 3D Object/Scene Modeling based on 3D Gaussian Splatting** Jan, 2025 - Present
*Samsung Research
Researcher*
- Camera ISP Modeling for Tetra burst images based on Neural Network** Sep, 2024 - Dec, 2024
*Samsung Research
Researcher*
- Real-Time 4D Novel View Synthesis for Dynamic Scene from Sparse View Images** April, 2024 - Aug, 2024
*Yonsei University | Electronics and Telecommunications Research Institute (ETRI)
Project Leader / Researcher*
- Auto Labeling Real Point Cloud Data via Semi-supervised Classification** April, 2021 - April, 2022
*Yonsei University | Hyundai Motors
Project Leader / Researcher*
- 3D Recognition for Autonomous Driving with Sparse Single- and Multi-LiDAR** Mar, 2020 - Dec, 2021
*Yonsei University | Mando Halla Company
Project Leader / Researcher*
- Surface Reconstruction of Actual 3D Space from RGB Images for Augmented Reality** Jul, 2019 - Nov, 2020
*Yonsei University | Electronics and Telecommunications Research Institute (ETRI)
Researcher*
- Natural Dense 3D Map Generation from Multi Sensors for Smart Vehicle System** Jul, 2019 - Dec, 2021
Yonsei University | Institute of Information & Communications Technology Planning & Evaluation (IITP)

Research Assistant

TEACHING
EXPERIENCE

Digital Signal Processing (Instructor: Prof. Sang Y. Lee), Yonsei University

Teaching Assistant

Mar - Jun, 2019

Course Summary: Learning to describe signals mathematically and understand how to perform mathematical operations on signals.

RELEVANT
COURSEWORKS

Statistical Pattern Recognition

Machine Learning and Its Application

Probabilistic Robotics

Probability and Random Variables

Data Structure and Algorithms

Signal and Systems

Operating Systems

Neural Network

Digital Image Processing

Random Process

Digital Signal Processing

Computer Architecture

Special Topics in Deep Learning

Special Topics in Computer Vision