Dogyoon Lee

CONTACT INFORMATION

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CURRENT POSITION

Samsung Research, Seoul, Republic of Korea   **Sep 2024 - Present**
Staff Research Engineer

EDUCATION

Yonsei University, Seoul, Republic of Korea   **Mar. 2019 - Aug. 2024**
College of Engineering

> **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   **Mar. 2012 - Feb. 2019**
Department of Electrical and Electronic Engineering

> **Bachelor of Science** in Electrical and Electronic Engineering

PUBLICATIONS

[TPAMI '25] Sparse-DeRF: Deblurred Neural Radiance Fields from Sparse View
Dogyoon Lee, Donghyeong Kim, Jungho Lee, Minhyeok Lee, Sangyoun Lee
IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI), 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, **Dogyoon Lee**, Sangyoun Lee
The 35th *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, 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, **Dogyoon Lee**, Sangyoun Lee
The 18th *European Conference on Computer Vision (ECCV)*, 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, **Dogyoon Lee**, Sangyoun Lee
The 34th *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, 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, **Dogyoon Lee**, Chaewon Park, Jungho Lee, Sangyoun Lee
The 34th *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, 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 ≈ 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*

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

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	Neural Network
	Machine Learning and Its Application	Digital Image Processing
	Probabilistic Robotics	Random Process
	Probability and Random Variables	Digital Signal Processing
	Data Structure and Algorithms	Computer Architecture
	Signal and Systems	Special Topics in Deep Learning
	Operating Systems	Special Topics in Computer Vision