

## Dogyoon Lee

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CONTACT INFORMATION	Geumho-ro 140, Seongdong-gu, Seoul 04727 Republic of Korea	<b>Voice:</b> (KOR) +82 10-4899-6866 <b>E-mail:</b> dogyoonlee@gmail.com <b>Website:</b> <a href="https://dogyoonlee.github.io">https://dogyoonlee.github.io</a> <b>LinkedIn:</b> <a href="https://www.linkedin.com/in/dogyoon-lee-9475b71b2/">https://www.linkedin.com/in/dogyoon-lee-9475b71b2/</a>
CURRENT POSITION	<b>Samsung Research</b> , Seoul, Republic of Korea <i>Staff Research Engineer</i>	<b>Sep 2024 - Present</b>
EDUCATION	<b>Yonsei University</b> , Seoul, Republic of Korea <i>College of Engineering</i> <b>M.S. /Ph.D.</b> Student in Electrical and Electronic Engineering <b>Advisor:</b> Professor Sang Y. Lee <b>Research Area:</b> 3D Computer Vision (Neural Rendering and Its Applications)  <b>Yonsei University</b> , Seoul, Republic of Korea <i>Department of Electrical and Electronic Engineering</i> <b>Bachelor of Science</b> in Electrical and Electronic Engineering	<b>Mar. 2019 - Aug. 2024</b>      <b>Mar. 2012 - Feb. 2019</b>
PUBLICATIONS	<b>[ECCV '24] ProDepth: Boosting Self-Supervised Multi-Frame Monocular Depth with Probabilistic Fusion</b> 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% • <a href="https://github.com/Sungmin-Woo/ProDepth">https://github.com/Sungmin-Woo/ProDepth</a>  <b>[CVPR '24] Dual Prototype Attention for Unsupervised Video Object Segmentation</b> 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% • <a href="https://github.com/Hydragon516/DPA">https://github.com/Hydragon516/DPA</a>  <b>[CVPR '24] Guided Slot Attention for Unsupervised Video Object Segmentation</b> 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% • <a href="https://github.com/Hydragon516/GSNet">https://github.com/Hydragon516/GSNet</a>  <b>[CVPR '23] DP-NeRF: Deblurred Neural Radiance Field with Physical Scene Priors</b> <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% • <a href="https://github.com/dogyoonlee/DP-NeRF">https://github.com/dogyoonlee/DP-NeRF</a>  <b>[ICCV '23] Hierarchically Decomposed Graph Convolutional Networks for Skeleton-Based Action Recognition</b> 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% • <a href="https://github.com/Jho-Yonsei/HD-GCN">https://github.com/Jho-Yonsei/HD-GCN</a>  <b>[ICIP '23] TSANet: Temporal and Scale Alignment for Unsupervised Video Object Segmentation</b> Seunghoon Lee, Suhwan Cho, <u>Dogyoon Lee</u> , Minhyeok Lee, Sangyoun Lee The 30th <i>IEEE International Conference on Image Processing (ICIP)</i> , 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 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>

**[ICCV '23] 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, Jax
- **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
- Large-Scale 3D Scene Reconstruction based on Neural Rendering with Noisy Data** Mar, 2024 - Aug, 2024  
Yonsei University | National Research Foundation of Korea (NRF)  
Project Leader / Researcher
- Real-Time Novel View Synthesis for Dynamic Scene from Sparse View** 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      | 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 |