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

[ICCV '25] CoMoGaussian: Continuous Motion-Aware Gaussian Splatting from Motion-Blurred Images
Jungho Lee, Donghyeong Kim, **Dogyoon Lee**, Suhwan Cho, Minhyeok Lee, Wonjoon Lee, Taeoh Kim, Dongyoon Wee, Sangyoun Lee
The 20th *IEEE International Conference on Computer Vision* (**ICCV**), 2025
Acceptance rate: 2698/11152 ≈ 24.19%
• https://github.com/Jho-Yonsei/CoMoGaussian

[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 ≈ 22.1%

[CVPRW '25] SMURF: Continuous Dynamics for Motion-Deblurring Radiance Fields
Jungho Lee, **Dogyoon Lee**, Minhyeok Lee, Donghyeong Kim, Sangyoun Lee
The 35th *IEEE Conference on Computer Vision and Pattern Recognition (**CVPRW**), 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, **Dogyoon Lee**, Sangyoun Lee
The 18th *European Conference on Computer Vision (**ECCV**), 2024*
Acceptance rate: 2395/8585 ≈ 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 ≈ 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 ≈ 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 ≈ 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** ∼
  - Pattern Recognition (**PR**) **2025** ∼

Open-source

- **CoMoGaussian**, https://github.com/Jho-Yonsei/CoMoGaussian
- **SMURF**, https://github.com/Jho-Yonsei/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-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 **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