Minhyeok Lee

Computer Vision Engineer, ML/DL Researcher
E-mail: hydragon516@yonsei.ac.kr / Github: https://github.com/Hydragon516
/ Homepage: https://hydragon.co.kr

RESEARCH INTERESTS

Segmentation

- Salient Object Detection
- Video Object Segmentation
- Camouflaged Object Detection

Autonomous Driving

- Lane Detection
- Monocular Depth Estimation
- LiDAR Point Cloud

Detection & Recognition

- Video Anomaly Detection
- Skeleton based Action Recognition

Novel View Synthesis

- Neural Radiance Field

EDUCATION

Yonsei University | College of Engineering — ***Seoul, Korea***
Integrated M.S./Ph.D. in Electrical and Electronic Engineering — ***Mar. 2021-Present***
Image and Video Pattern Recognition Lab. (M.S/Ph.D 4th)

Yonsei University | College of Engineering — ***Seoul, Korea***
B.S. in Electrical and Electronic Engineering — ***Mar.2017-Feb.2021***

Hansung Science High School — ***Seoul, Korea***
Mar.2014-Feb.2017

PUBLICATIONS

Unsupervised Video Object Segmentation via Prototype Memory Network, *WACV'23*
- **Minhyeok Lee**, Suhwan Cho, Seunghoon Lee, Chaewon Park, Sangyoun Lee

Treating Motion as Option to Reduce Motion Dependency in Unsupervised Video Object Segmentation *WACV'23*
- Suhwan Cho, **Minhyeok Lee**, Seunghoon Lee, Chaewon Park, Donghyeong Kim, Sangyoun Lee

Global-Local Aggregation with Deformable Point Sampling for Camouflaged Object Detection, *arXiv'22*
-**Minhyeok Lee**, Suhwan Cho, Chaewon Park, Dogyoon Lee, Jungho Lee, Sangyoun Lee

Domain Alignment and Temporal Aggregation for Unsupervised Video Object Segmentation, *arXiv'22*
-Suhwan Cho*, **Minhyeok Lee***, Seunghoon Lee, Sangyoun Lee

Deblurred Neural Radiance Field with Physical Scene Priors, *arXiv'22*
-Dogyoon Lee, **Minhyeok Lee**, Chajin Shin, Sangyoun Lee

Hierarchically Decomposed Graph Convolutional Networks for Skeleton-Based Action Recognition, *arXiv'22*
- Jungho Lee, **Minhyeok Lee**, Dogyoon Lee, Sangyoon Lee

Pixel-Level Equalized Matching for Video Object Segmentation, *arXiv'22*
- Suhwan Cho, Woo Jin Kim, MyeongAh Cho, Seunghoon Lee, **Minhyeok Lee**, Chaewon Park, Sangyoun Lee

SPSN: Superpixel Prototype Sampling Network for RGB-D Salient Object Detection, ***ECCV'22***
- **Minhyeok Lee***, Chaewon Park*, Suhwan Cho, Sangyoun Lee

Tackling Background Distraction in Video Object Segmentation, ***ECCV'22***
- Suhwan Cho, Heansung Lee, **Minhyeok Lee**, Chaewon Park, Sungjun Jang, Minjung Kim, Sangyoun Lee

Saliency Detection via Global Context Enhanced Feature Fusion and Edge Weighted Loss, *ICIP'22*

- Chaewon Park*, **Minhyeok Lee***, MyeongAh Cho, Sangyoun Lee

Robust Lane Detection via Expanded Self Attention, *WACV'22*
- **Minhyeok Lee**, Junhyeop Lee, Dogyoon Lee, Woojin Kim, Sangwon Hwang, Sangyoun Lee

EdgeConv with Attention Module for Monocular Depth Estimation, *WACV'22*
- **Minhyeok Lee**, Sangwon Hwang, Chaewon Park, Sangyoun Lee

FastAno: Fast Anomaly Detection via Spatio-temporal Patch Transformation, *WACV'22*
- Chaewon Park, MyeongAh Cho, **Minhyeok Lee**, Sangyoun Lee

Multi-level Feature maps Attention for Monocular Depth Estimation, *ICCE-Asia'21*
- Seunghoon Lee, **Minhyeok Lee**, Sangyoun Lee

Regularization Strategy for Point Cloud via Rigidly Mixed Sample, ***CVPR'21***
- Dogyoon Lee, Jaeha Lee, Junhyeop Lee, Hyeongmin Lee, **Minhyeok Lee**, Sungmin Woo, Sangyoun Lee

PROJECTS

Development of degradation removal and video enhancement using artificial intelligence ***Yonsei University***
- Funded by Tech Incubator Program for startup Korea (TIPS) ***Nov.2022-Present***
- Deep learning researcher
- Video Enhancement, Video Super Resolution
- Development of an efficient intelligent image processing algorithm that is robust on complex degradation

Development of learning technology to improve classification performance based on LiDAR point cloud ***Yonsei University***
- Funded by Hyundai Motor Company ***Apr.2021-Mar.2022***
- Deep learning researcher
- Development of unsupervised and semi-supervised learning algorithms
- Development of lightweight models for point cloud classification

Road conditions and autonomous bus AI data ***Yonsei University***
- Funded by National Information society Agency (NIA) ***Sep.2020-Jun.2021***
- Deep learning researcher
- Crack and Obstacle Segmentation
- Development of Road anomaly detection algorithms and models