

# Hongje Seong

## Contact

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## Languages

Korean, English

## Interests

Computer vision, scene recognition, video object segmentation, and video matting

## Education

- 03/18 - Present **Ph.D. student** School of Electrical & Electronic Engineering Yonsei University  
Advisor: [Prof. Euntai Kim](#)
- 03/12 - 02/18 **B.S.** School of Electrical & Electronic Engineering Yonsei University

## Experience

- 03/21 - 12/21 **Adobe Research** San Jose, CA, USA (remote)  
*Research Intern*  
Mentors: [Joon-Young Lee](#), [Seoung Wug Oh](#), and [Brian Price](#)
- 03/18 - Present **Yonsei University** Seoul, Korea  
*Research Assistant @ CILAB*  
Participation in several research projects
- 03/18 - 12/18 **Yonsei University** Seoul, Korea  
*Teaching Assistant*
  - Data Structure and Algorithms
  - Introduction Artificial Intelligence

## Publications

### Journal

Indoor Place Category Recognition for a Cleaning Robot by Fusing a Probabilistic Approach and Deep Learning

Soowook Choe\*, [Hongje Seong\\*](#), and Euntai Kim (\*equal contribution)

IEEE Transactions on Cybernetics (TCYB), 2021. (Accepted)

Universal Pooling - A New Pooling Method for Convolutional Neural Networks

Junhyuk Hyun, [Hongje Seong](#), and Euntai Kim

Expert Systems With Applications (ESWA), vol. 180, pp. 115084, October, 2021.

FOSNet: An End-to-End Trainable Deep Neural Network for Scene Recognition

[Hongje Seong](#), Junhyuk Hyun, and Euntai Kim

IEEE Access, vol. 8, pp. 82066-82077, December, 2020.

### Conference

Iteratively Selecting an Easy Reference Frame Makes Unsupervised Video Object Segmentation Easier

Youngjo Lee, [Hongje Seong](#), and Euntai Kim

AAAI Conference on Artificial Intelligence (AAAI), February, 2022.

Graph-Based Point Tracker for 3D Object Tracking in Point Clouds

Minseong Park, [Hongje Seong](#), Wonje Jang, and Euntai Kim

AAAI Conference on Artificial Intelligence (AAAI), February, 2022.

Hierarchical Memory Matching Network for Video Object Segmentation

[Hongje Seong](#), Seoung Wug Oh, Joon-Young Lee, Seongwon Lee, Suhyeon Lee, and Euntai Kim

IEEE/CVF International Conference on Computer Vision (ICCV), October, 2021.

Unsupervised Domain Adaptation for Semantic Segmentation by Content Transfer  
Suhyeon Lee, Junhyuk Hyun, Hongje Seong, and Euntai Kim  
AAAI Conference on Artificial Intelligence (AAAI), February, 2021.

Kernelized Memory Network for Video Object Segmentation  
Hongje Seong, Junhyuk Hyun, and Euntai Kim  
European Conference on Computer Vision (ECCV), August, 2020.

A Kernel-based Approach for Video Object Segmentation  
Hongje Seong, Junhyuk Hyun, and Euntai Kim  
IEEE/CVF Conference on Computer Vision and Pattern Recognition Workshops (CVPRW, DAVIS'20), June, 2020.

Video Multitask Transformer Network  
Hongje Seong, Junhyuk Hyun, and Euntai Kim  
IEEE/CVF International Conference on Computer Vision Workshops (ICCVW, CoVieW'19), October, 2019.

Scene Recognition via Object-to-Scene Class Conversion: End-to-End Training  
Hongje Seong, Junhyuk Hyun, Hyunbae Chang, Suhyeon Lee, Suhan Woo, and Euntai Kim  
International Joint Conference on Neural Networks (IJCNN), July, 2019.

Improving Nighttime Object Detection by Generating Synthetic Nighttime Dataset from Daytime Dataset  
Youngjo Lee, Suhyeon Lee, Hongje Seong, and Euntai Kim  
International Conference on Control, Automation and Systems (ICCAS), October, 2021.

Loop Closure Detection in Crowded Place  
Seongwon Lee, HyungGi Jo, Hongje Seong, and Euntai Kim  
IEEE Region 10 Symposium (TENSYP), August, 2021.

Metric Learning in Mini-batch for Robust 6-DoF Camera Relocalization in Outdoor Environments  
Gyuhyeon Pak, Hongje Seong, and Euntai Kim  
International Conference on Ubiquitous Robots (UR), June, 2021.

The Effective Method for 3D LiDAR Point Clouds Processing  
Youngjoo Kim, Hongje Seong, Wonje Jang, and Euntai Kim  
International Conference on Ubiquitous Robots (UR), June, 2021.

Is Whole Object Information Helpful for Scene Recognition?  
Hongje Seong, Junhyuk Hyun, and Euntai Kim  
International Conference on Ubiquitous Robots (UR), June, 2020.

Partial Convolution for Scene Recognition  
Hongje Seong, Junhyuk Hyun, Seongwon Lee, and Euntai Kim  
International Conference on Control, Automation and Systems (ICCAS), October, 2019.

Weakly Supervised Temporal Localization in Video Scene Recognition  
Junhyuk Hyun, Hongje Seong, Suhyeon Lee, Suhan Woo, and Euntai Kim  
International Conference on Control, Automation and Systems (ICCAS), October, 2018.

New Feature-level Video Classification via Temporal Attention Model  
Hongje Seong, Junhyuk Hyun, Suhyeon Lee, Suhan Woo, Hyunbae Chang, and Euntai Kim  
The 1st Workshop and Challenge on Comprehensive Video Understanding in the Wild (ACM MM Workshop, CoVieW'18), October, 2018.

## Awards

2020	<b>3rd Place Award</b>	DAVIS'20 (CVPR Workshop) The 2020 DAVIS Challenge on Video Object Segmentation (DAVIS 2020)
2019	<b>Best Poster Award 3rd Place</b>	School of Electrical & Electronic Engineering, Yonsei University Workshop on Frontiers of Electrical Engineering (FREE) 2019
2018	<b>2nd Place Award</b>	CoVieW'18 (ACM MM Workshop) The 1st Workshop and Challenge on Comprehensive Video Understanding in the Wild (CoVieW 2018)
2017	<b>4th Place Award</b>	Korea Transportation Safety Authority (TS) & Korea Auto-Vehicle Safety Association (KASA) Autonomous Car Racing in 2017 International Student Car Competition

## Patents

Apparatus and method for domain adaptation using zero style loss

Euntai Kim, Suhyeon Lee, Junhyuk Hyun, and Hongje Seong

Korea - Application No. 10-2021-0003078

Apparatus and method for solving class imbalance problem of domain adaptation using content transfer

Euntai Kim, Suhyeon Lee, Hongje Seong, and Junhyuk Hyun

Korea - Application No. 10-2021-0003077

Apparatus for predicting traffic line of box-level multiple object using only position information of box-level multiple object

Euntai Kim, Youngjo Lee, Hongje Seong, and Junhyuk Hyun

Korea - Application No. 10-2020-0149533

Apparatus for predicting movement of box-level object using only position information of box-level object

Euntai Kim, Youngjo Lee, Hongje Seong, and Junhyuk Hyun

Korea - Application No. 10-2020-0149532

Pixel Level Video Object Tracking Apparatus Using Box Level Object Position Information

Euntai Kim, Hongje Seong, Youngjo Lee, and Junhyuk Hyun

Korea - Application No. 10-2020-0030214

International (PCT) - Application No. PCT/KR2020/005383

Action Recognition Method and Apparatus in Untrimmed Videos Based on Artificial Neural Network

Euntai Kim, Hongje Seong, and Junhyuk Hyun

Korea - Application No. 10-2020-0029743

Apparatus for Recognizing a Place based on Artificial Neural Network and Learning Method thereof

Euntai Kim, Hongje Seong, Junhyuk Hyun, Suhyeon Lee, Suhan Woo, and Hyunbae Chang

Korea - Application No. 10-2019-0041544

Korea - Registration No. 10-2211842

International (PCT) - Application No. PCT/KR2020/001018

Apparatus and Method for Detecting Object based on Heterogeneous Sensor

Euntai Kim, Junhyuk Hyun, Suhyeon Lee, Suhan Woo, and Hongje Seong

Korea - Application No. 10-2018-0055179

Korea - Registration No. 10-2138681

Method and Apparatus for Generating Scene Situation Information of Video Using Differentiation of Image Feature and Supervised Learning

Euntai Kim, Junhyuk Hyun, Suhyeon Lee, Suhan Woo, and Hongje Seong

Korea - Application No. 10-2018-0049520

Korea - Registration No. 10-2120453

## Projects

(09/17-12/20) Research on Fundamental Technology for Deep Learning-Based Semantic State Understanding

National Research Foundation of Korea (NRF)

(09/17-05/19) Development of part-based pedestrian detection and tracking system for autonomous vehicle

National Research Foundation of Korea (NRF)

## **Activities**

### **Reviewer**

Elsevier Pattern Recognition

Elsevier Knowledge-Based Systems

Elsevier Applied Soft Computing

Last updated: 1st December 2021