Suhan Woo

Ph.D candidate, Yonsei University, Korea

wsh112@yonsei.ac.kr suhan-woo.github.io suhanwoo suhan-woo

Education

Yonsei University (Advisor: Prof. Euntai Kim) — Seoul,Korea
Ph.D. in Electronic and Electrical Engineering — Sept 2017 – Present

Yonsei University — Seoul,Korea
B.S. in Electronic and Electrical Engineering — Mar 2013 – Aug 2017

Publications

International Journal

Location-Aware Transformer Network for Bird's Eye View Semantic Segmentation — Dec 2024
Suhan Woo, Minseong Park, Youngjo Lee, Seongwon Lee, Euntai Kim
IEEE Transactions on Intelligent Vehicles, Ealry Access (IF: 14.0 in JCR 2023)
Page

Street Floor Segmentation for a Wheeled Mobile Robot — Dec 2022
Junhyuk Hyun, ***Suhan Woo***, Euntai Kim
IEEE Access, vol. 10, pp. 127601-127609 (IF: 3.5 in JCR 2021)
Page

International Conference

Decomposition of Neural Discrete Representations for Large-Scale 3D Mapping — Sep 2024
Minseong Park, ***Suhan Woo***, Euntai Kim
Proc. of the European Conference on Computer Vision (ECCV 2024), Milano, Italy
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Tilted Image Problem in Outdoor Semantic Segmentation — July 2022
Suhan Woo, Sungjin Jo, Minho Cho, Junhyuk Hyun, Euntai Kim
Proc. of the 19th International Conference on Ubiquitous Robots (UR 2022), Jeju, Korea

Multi-Modal Object Detection with Grid-Attention for YOLOv3 — July 2021
Jangyoon Kim, ***Suhan Woo***, Euntai Kim
Proc. of the 18th International Conference on Ubiquitous Robots (UR 2021), Gangneung, Korea

3D-DEEP: 3-Dimensional Deep-Learning Based on Elevation Patterns for Road Scene Interpretation — Oct 2020
A. H. Saz, ***Suhan Woo***, H. C. Schez, I. P. Alonso, Euntai Kim, D. F. Llorca, M. A. Sotelo
Proc. of the IEEE Intelligent Vehicle Symposium (IV 2020), Las Vegas, United States
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Scene Recognition via Object-to-Scene Class Conversion: End-to-End Training — July 2019
Hongje Seong, Junhyuk Hyun, Hyunbae Chang, Suhyeon Lee, ***Suhan Woo***, Euntai Kim
Proc. of The International Joint Conference on Neural Networks (IJCNN 2019), Budapest, Hungary

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Weakly Supervised Temporal Localization in Video Scene Recognition Oct 2018

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

Proc. of the 18th International Conference on Control, Automation and Systems (ICCAS 2018), GangWon, Korea

New Feature-level Video Classification via Temporal Attention Model Oct 2018

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

The 1st Workshop and Challenge on Comprehensive Video Understanding in the Wild (CoVieW'18, ACM MM Workshop), Seoul, Korea

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Projects

Development of Cooperate Mapping, Environment Recognition and Autonomous Driving Technology for Multi Mobile Robots Operating in Large-scale Indoor Workspace Apr 1, 2023 - Present

- Funded by Korea Evaluation Institute Of Industrial Technology
- Development of BEV semantic segmentation technology for efficient operation of multirobots.

Development of 3D indoor map service May 1, 2022 - Sep 30, 2022

- Funded by LG Electronics, Korea
- Development of 3D indoor mapping technology using semantic information.

Development of artificial intelligence robot autonomous navigation technology for agile movement in crowded space Apr 1, 2019 - Dec 31, 2022

- Funded by Ministry of Trade, Industry and Energy, Korea
- Development of real-time traversability estimation technology based on semantic segmentation in various environments (season, day and night)

Scene parsing and static local map generation using RGBD image in outdoor environment Mar 18, 2019 - Oct 31, 2019

- Funded by LG Electronics, Korea
- Development of real-time semantic segmentation algorithm using RGB and RGBD sensors

Development of robust detection and tracking system for accident prevention in autonomous vehicle Mar 1, 2019 - Feb 28, 2022

- Funded by National Research Foundation of Korea
- Corner case data augmentation algorithm research for robust object detection

Development of real-time object recognition technology based on deep learning for autonomous vehicles Aug 1, 2017 - Dec 31, 2020

- Funded by National Research Foundation of Korea
- Deep learning algorithm research using video data

Development of real-time object recognition technology based on deep learning for autonomous vehicles Aug 1, 2017 - Sept 30, 2018

- Funded by Hyundai MNSoft, Korea
- Development of real-time traffic signs, traffic lights, and lane detection algorithms in driving vehicles

Patents

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

Technologies

Languages: C, Python, Matlab