Curriculum Vitae

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Name : Donggeun Yoo (유동근)

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Google Scholar : https://scholar.google.co.kr/citations?user=10f-fEYAAAAJ

Education

2013. 3. – 2019. 2. Ph.D. in School of Electrical Engineering, KAIST, Daejeon, South Korea.

Thesis Deep Learning Based Visual Recognition Robust Against Background Clutters

Advisor Prof. In So Kweon

2011. 2. – 2013. 2. MS in School of Electrical Engineering, KAIST, Daejeon, South Korea.

Thesis Learning Codeword Characteristics for Image Retrieval Using Very High Dimensional Bag-of-Words Representation

Advisor Prof. In So Kweon

2006. 3. – 2011. 1. BS in School of Electrical Engineering, KAIST, Daejeon, South Korea.

Work Experience

2020. 1. – Present Co-founder & Chief of Research at Lunit Inc., Seoul, South Korea.

2018. 3. – 2019. 12. Co-founder & Head of Research at Lunit Inc., Seoul, South Korea.

2017. 3. – 2018. 2. Co-founder & Research Scientist at Lunit Inc., Seoul, South Korea.

2016. 5. – 2016. 8. Research intern at Adobe Research, San Jose, CA, USA.

Topic Large-Scale Video Representation Learning

Advisor Hailin Jin and Joon-Young Lee

Research Interest

Machine Learning Deep learning, unsupervised learning, semi-supervised learning, representation learning, active learning, domain generalization, large-scale learning method, information retrieval, ML-based biomarker, ML-based scientific discovery.

Computer Vision Visual recognition, image classification, object detection, semantic segmentation, image retrieval, medical image analysis.

Technical Achievements

2017. – Present — Has led AI model development of commercialized products including the **Lunit INSIGHT** series and the **Lunit SCOPE** series being used in **2,000+** hospitals and research institutions around the world.

2019. 11. — Visual Domain Adaptation Challenge (VisDA) in ICCV 2019
Team Lunit won the **1st place** in the semi-supervised domain adaptation task.
Method: Reducing Domain Gap via Style-Agnostic Networks

2017. 3. — A transfer learning method, Multi-Scale Pyramid Pooling (MPP), was employed to **Samsung Galaxy S8 Bixby Vision** for fine-grained object classification and product retrieval.

2015. 12. — ImageNet Large Scale Visual Recognition Challenge (**ILSVRC**) in ICCV 2015
Team Lunit-KAIST won the **5th place** at the main track (classification and localization) among 23 participants including Google, Microsoft Research, Samsung Electronics, and Qualcomm.
Invited to the ILSVRC Workshop to provide a talk about "Multi-Class AttentionNet", which was selected as one of top 3 novel localization approaches.

2009. 2. — Won KAIST Undergraduate Research Program (URP)

Topic Portable Noncontact Heartbeat Sensor Using LC Oscillation

Advisor Prof. Songcheol Hong

Academic Activities

2017. – Present — Reviewer in CVPR, ICCV, ECCV, and other conferences.

2023. 09. — Organizing a medical AI Challenge in MICCAI 2023: Cell Detection from Cell-Tissue Interaction (OCELOT 2023)

Organizers Jeongun Ryu, Aaron Valero Puche, JaeWoong Shin, Seonwook Park, Biagio Brattoli, Mohammad Mostafavi, Jinhee Lee, Wonkyung Jung, Soo Ick Cho, Chan-Young Ock, Kyunghyun Paeng, Donggeun Yoo, Sérgio Pereira (All from Lunit)

2022. 09. — Organizing a MICCAI 2022 Tutorial: Tutorial on AI for Medical Image Analysis in Practice

Organizers Thijs Kooi, Minuk Ma, Taesoo Kim, Sérgio Pereira, Subok Park, Donggeun Yoo (All from Lunit)

2021. 02. — Invited talk at Image Processing and Image Understanding (IPIU)

Topic Conquer Cancer with AI: Challenges and Limitations

2019. 11. — Invited talk at Annual Symposium of the Korea Endocrine Society (medical conference)

Topic The Potential of AI in Medicine: From Diagnostic AI to Predictive Biomarker

2019. 10. — Organizing an ICCV 2019 Workshop: Visual Recognition for Medical Images (VRMI'19)

Organizers Hoo-Chang Shin (NVIDIA), Kyunghyun Cho (NYU&FAIR), and Donggeun Yoo (Lunit)

2019. 10. Invited talk at MICCAI 2019 Workshop: Medical Informatics in Medical Image Analytics (MIMIA'19)

Topic Reducing Annotation Cost in Medical Image Analysis

2019. 4. Invited talk at Korea International Gastric Cancer Week 2019 (medical conference)

Topic The Potential of AI in Medicine: From Diagnostic AI to Predictive Biomarker

2015. 12. Invited talk at ICCV 2015 Workshop: ImageNet and MS COCO Visual Recognition Challenges Joint Workshop (ILSVRC)

Topic Multi-class AttentionNet

Publications (Selected)

1. HyunJae Lee*, Heon Song*, Hyeonsoo Lee*, Gi-hyeon Lee, Suyeong Park, **Donggeun Yoo**, *Bayesian Optimization Meets Self-Distillation*, IEEE/CVF International Conference on Computer Vision (ICCV), 2023.
2. Jeongun Ryu*, Aaron Valero Puche*, JaeWoong Shin*, Seonwook Park, Biagio Brattoli, Jinhee Lee, Wonkyung Jung, Soo Ick Cho, Kyunghyun Paeng, Chan-Young Ock, **Donggeun Yoo**, Sérgio Pereira, *OCELOT: Overlapped Cell on Tissue Dataset for Histopathology*, IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR), 2023.
3. Mingu Kang*, Heon Song*, Seonwook Park, **Donggeun Yoo**, Sérgio Pereira, *Benchmarking Self-Supervised Learning on Diverse Pathology Datasets*, IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR), 2023.
4. HyunJae Lee, Gihyeon Lee, Junhwan Kim, Sungjun Cho, Dohyun Kim, **Donggeon Yoo**, *Improving Multi-fidelity Optimization with a Recurring Learning Rate for Hyperparameter Tuning*, IEEE/CVF Winter Conference on Applications of Computer Vision (WACV), 2023.
5. Sangjoon Choi, Soo Ick Cho, Minuk Ma, Seonwook Park, Sergio Pereira, Brian Jaehong Aum, Seunghwan Shin, Kyunghyun Paeng, **Donggeun Yoo**, Wonkyung Jung, Chan-Young Ock, Se-Hoon Lee, Yoon-La Choi, Jin-Haeng Chung, Tony S Mok, Hyojin Kim, Seokhwi Kim, *Artificial intelligence–powered programmed death ligand 1 analyser reduces interobserver variation in tumour proportion score for non–small cell lung cancer with better prediction of immunotherapy response*, European Journal of Cancer, 2022. - **IF 10.0**
6. Sehhoon Park, Chan-Young Ock, Hyojin Kim, Sergio Pereira, Seonwook Park, Minuk Ma, Sangjoon Choi, Seokhwi Kim, Seunghwan Shin, Brian Jaehong Aum, Kyunghyun Paeng, **Donggeun Yoo**, Hongui Cha, Sunyoung Park, Koung Jin Suh, Hyun Ae Jung, Se Hyun Kim, Yu Jung Kim, Jong-Mu Sun, Jin-Haeng Chung, Jin Seok Ahn, Myung-Ju Ahn, Jong Seok Lee, Keunchil Park, Sang Yong Song, Yung-Jue Bang, Yoon-La Choi, Tony S Mok, Se-Hoon Lee, *Artificial intelligence–powered spatial analysis of tumor-infiltrating lymphocytes as complementary biomarker for immune checkpoint inhibition in non–small-cell lung cancer*, Journal of Clinical Oncology (JCO), 2022. - **IF 50.7**
7. Chunggi Lee, Seonwook Park, Heon Song, Jeongun Ryu, Sanghoon Kim, Haejoon Kim, Sérgio Pereira, **Donggeon Yoo**, *Interactive multi-class tiny-object detection*, IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2022.

8. Hyeonseob Nam*, HyunJae Lee*, Jongchan Park, Wonjun Yoon, **Donggeon Yoo**, *Reducing Domain Gap by Reducing Style Bias*, IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2021. - **Oral**
9. Minchul Kim*, Jongchan Park*, Seil Na, Chang Min Park, **Donggeon Yoo**, *Learning Visual Context by Comparison*, European Conference on Computer Vision (ECCV), 2020. - **Spotlight**
10. Jaehwan Lee, **Donggeon Yoo**, Jung Yin Huh, Hyo-Eun Kim, *Photometric Transformer Networks and Label Adjustment for Breast Density Prediction*, IEEE International Conference on Computer Vision (ICCV) Workshop, 2019.
11. Inwan Yoo, **Donggeun Yoo**, Kyunghyun Paeng, *PseudoEdgeNet: Nuclei Segmentation only with Point Annotations*, International Conference on Medical Image Computing and Computer-Assisted Intervention (MICCAI), 2019. - **Oral**
12. Seokju Lee, Junsik Kim, Tae-Hyun Oh, Yongseop Jeong, **Donggeun Yoo**, Stephen Lin, In So Kweon, *Visuomotor Understanding for Representation Learning of Driving Scenes*, The British Machine Vision Conference (BMVC), 2019.
13. **Donggeun Yoo**, In So Kweon, *Learning Loss for Active Learning*, IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2019. - **Oral**
14. Jongchan Park, Joon-Young Lee, **Donggeun Yoo**, In So Kweon, *Distort-and-Recover: Color Enhancement using Deep Reinforcement Learning*, IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2018.
15. Dahun Kim, Donghyeon Cho, **Donggeun Yoo**, In So Kweon, *Learning Image Representations by Completing Damaged Jigsaw Puzzles*, IEEE Winter Conference on Applications of Computer Vision (WACV), 2018.
16. Dahun Kim, Donghyeon Cho, **Donggeun Yoo**, In So Kweon *Two-phase learning for weakly supervised object localization* IEEE International Conference on Computer Vision (ICCV), 2017.
17. Youngjin Yoon, Hae-Gon Jeon, **Donggeun Yoo**, Joon-Young Lee, In So Kweon, *Light-field image super-resolution using convolutional neural network*, IEEE Signal Processing Letters, 24(6), 848-852, 2017.
18. **Donggeun Yoo**, Sunggyun Park, Kyunghyun Paeng, Joon-Young Lee, In So Kweon, *Action-Driven Object Detection with Top-Down Visual Attentions*, arXiv preprint, 2016.
19. **Donggeun Yoo**, Namil Kim, Sunggyun Park, Anthony S Paek, In So Kweon, *Pixel-Level Domain Transfer*, European Conference on Computer Vision (ECCV), 2016.
20. **Donggeun Yoo**, Sunggyun Park, Joon-Young Lee, Anthony S Paek, In So Kweon *Attentionnet: Aggregating weak directions for accurate object detection* IEEE International Conference on Computer Vision (ICCV), 2015.
21. Youngjin Yoon, Hae-Gon Jeon, **Donggeun Yoo**, Joon-Young Lee, In So Kweon, *Learning a deep convolutional network for light-field image super-resolution*, IEEE International Conference on Computer Vision (ICCV) Workshop, 2015.
22. **Donggeun Yoo**, Sunggyun Park, Joon-Young Lee, In So Kweon, *Multi-scale pyramid pooling for deep convolutional representation*, IEEE Conference on Computer Vision and Pattern Recognition (CVPR) Deep Vision Workshop, 2015.

23. **Donggeun Yoo**, Kyunghyun Paeng, Sunggyun Park, Jungin Lee, Seungwook Paek, Sung-Eui Yoon, In So Kweon, *PRISM: a system for weighted multi-color browsing of fashion products*, International Conference on World Wide Web (WWW), 2014.