Sangdoo Yun, Ph.D.

Research Scientist at NAVER AI Lab (Mar. 2018 - Now)
Adjunct Professor in CSE Dept. of Seoul National University (Sep. 2021 - Aug. 2022)
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Education

Seoul National University   Mar. 2013 - Aug. 2017
Ph.D. in Electrical and Computer Engineering.

Seoul National University   Mar. 2011 - Feb. 2013
M.S. in Electrical and Computer Engineering.

Seoul National University   Mar. 2006 - Aug. 2010
B.S. in Electrical Engineering and Computer Science.

Publications

Chanwoo Park*, **Sangdoo Yun***, Sanghyuk Chun, "A Unified Analysis of Mixed Sample Data Augmentation: A Loss Function Perspective", Neural Information Processing Systems (**NeurIPS 2022**), 2022. (*Equal contribution)

Geewook Kim, Teakgyu Hong, Moonbin Yim, Jeongyeon Nam, Jinyoung Park, Jinyeong Yim, Wonseok Hwang, **Sangdoo Yun**, Dongyoon Han, Seunghyun Park, "OCR-free Document Understanding Transformer", European Conference on Computer Vision (**ECCV 2022**), 2022.

Jang-Hyun Kim, Jinuk Kim, Seong Joon Oh, **Sangdoo Yun**, Hwanjun Song, Joonhyun Jeong, Jung-Woo Ha, Hyun Oh Song, "Dataset Condensation via Efficient Synthetic-Data Parameterization", International Conference on Machine Learning (**ICML 2022**), 2022.

Saehyung Lee, Sanghyuk Chun, Sangwon Jung, **Sangdoo Yun**, Sungroh Yoon, "Dataset Condensation with Contrastive Signals", International Conference on Machine Learning (**ICML 2022**), 2022.

Seulki Park, Youngkyu Hong, Byeongho Heo, **Sangdoo Yun**, Jin Young Choi , "The Majority Can Help The Minority: Context-rich Minority Oversampling for Long-tailed Classification", IEEE Computer Vision and Pattern Recognition (**CVPR 2022**), 2022.

Jungbeom Lee, Seong Joon Oh, **Sangdoo Yun**, Junsuk Choe, Eunji Kim, Sungroh Yoon , "Weakly Supervised Semantic Segmentation using Out-of-Distribution Data", IEEE Computer Vision and Pattern Recognition (**CVPR 2022**), 2022.

Jongin Lim, **Sangdoo Yun**, Seulki Park, Jin Young Choi , "Hypergraph-Induced Semantic Tuplet Loss for Deep Metric Learning", IEEE Computer Vision and Pattern Recognition (**CVPR 2022**), 2022.

Byeongho Heo, **Sangdoo Yun**, Dongyoon Han, Sanghyuk Chun, Junsuk Choe, Seong Joon Oh , "Rethinking spatial dimensions of vision transformers", IEEE International Conference on Computer Vision (**ICCV 2021**), 2021.

Jeesoo Kim, Junsuk Choe, **Sangdoo Yun**, Nojun Kwak, "Normalization Matters in Weakly Supervised Object Localization", IEEE International Conference on Computer Vision (**ICCV 2021**), 2021.

Sangdoo Yun, Seong Joon Oh, Byeongho Heo, Dongyoon Han, Junsuk Choe, Sanghyuk Chun, "Relabeling ImageNet: from Single to Multi-Labels, from Global to Localized Labels", IEEE Computer Vision and Pattern Recognition (**CVPR 2021**), 2021.

Dongyoon Han, **Sangdoo Yun**, Byeongho Heo, YoungJoon Yoo, "Rethinking Channel Dimensions for Efficient Model Design", IEEE Computer Vision and Pattern Recognition (**CVPR 2021**), 2021.

Byeongho Heo*, Sanghyuk Chun*, Seong Joon Oh, Dongyoon Han, **Sangdoo Yun**, Youngjung Uh, Jung-Woo Ha. "AdamP: Slowing Down the Slowdown for Momentum Optimizers on Scale-invariant Weights", International Conference on Learning Representations (**ICLR 2021**), 2021. (*Equal contribution)

Sangdoo Yun, Seong Joon Oh, Byeongho Heo, Dongyoon Han, Jinhyung Kim, "VideoMix: Rethinking Data Augmentation for Video Classification", arXiv, 2020.

Hyojin Bahng, Sanghyuk Chun, **Sangdoo Yun**, Jaegul Choo, Seong Joon Oh, "Learning De-biased Representations with Biased Representations", International Conference on Machine Learning (**ICML 2020**), 2020.

Sangdoo Yun, Dongyoon Han, Seong Joon Oh, Sanghyuk Chun, Junsuk Choe, Youngjoon Yoo, "CutMix: Regularization Strategy to Train Strong Classifiers with Localizable Features" IEEE International Conference on Computer Vision (**ICCV 2019**), 2019. **[Oral presentation]** (accept ratio=4.3%)

Jeonghun Baek, Geewook Kim, Junyeop Lee, Sungrae Park, Dongyoon Han, **Sangdoo Yun**, Seong Joon Oh, and Hwalsuk Lee, "What Is Wrong with Scene Text Recognition Model Comparisons? Dataset and Model Analysis" IEEE International Conference on Computer Vision (**ICCV 2019**), 2019. **[Oral presentation]** (accept ratio=4.3%)

Byeongho Heo, Jeesoo Kim, **Sangdoo Yun**, Hyojin Park, Nojun Kwak, and Jin Young Choi, "A Comprehensive Overhaul of Feature Distillation" IEEE International Conference on Computer Vision (**ICCV 2019**), 2019.

Sanghyuk Chun, Seong Joon Oh, **Sangdoo Yun**, Dongyoon Han, Junsuk Choe, and Youngjoon Yoo, "An Empirical Evaluation on Robustness and Uncertainty of Regularization Methods" Uncertainty & Robustness in Deep Learning, **ICML Workshop**, 2019.

Youngmin Baek, Bado Lee, Dongyoon Han, **Sangdoo Yun**, and Hwalsuk Lee, "Character Region Awareness for Text Detection", IEEE Computer Vision and Pattern Recognition (**CVPR 2019**), 2019.

Byeongho Heo, Minsik Lee, **Sangdoo Yun**, and Jin Young Choi, "Knowledge Distillation with Adversarial Samples Supporting Decision Boundary", Association for the Advancement of Artificial Intelligence (**AAAI 2019**), 2019

Byeongho Heo, Minsik Lee, **Sangdoo Yun**, and Jin Young Choi, "Knowledge Transfer via Distillation of Activation Boundaries Formed by Hidden Neurons", Association for the Advancement of Artificial Intelligence (**AAAI 2019**), 2019

Donghoon Lee, **Sangdoo Yun**, Sungjoon Choi, Hwiyeon Yoo, Ming-Hsuan Yang, and Songhwai Oh, "Unsupervised Holistic Image Generation from Key Local Patches", European Conference on Computer Vision (**ECCV 2018**), 2018.

Sangdoo Yun, Jongwon Choi, Youngjoon Yoo, Kimin Yun, and Jin Young Choi, "Action-Driven Visual Object Tracking with Deep Reinforcement Learning", IEEE Transactions on Neural Networks and Learning Systems (**TNNLS**).

YoungJoon Yoo, Seonguk Park, Junyoung Choi, **Sangdoo Yun**, and Nojun Kwak, "Butterfly Effect: Bidirectional Control of Classification Performance by Small Additive Perturbation", **arXiv**:1711.09681, 2017.

Sangdoo Yun, Jongwon Choi, Youngjoon Yoo, Kimin Yun, and Jin Young Choi, "Action-Decision Networks for Visual Tracking with Deep Reinforcement Learning", IEEE Computer Vision and Pattern Recognition (**CVPR 2017**), 2017. (**Spotlight**)

Youngjoon Yoo, **Sangdoo Yun**, Hyung Jin Chang, Yiannis Demiris, and Jin Young Choi, "Variational Autoencoded Regression: High Dimensional Regression of Visual Data on Complex Manifold", IEEE Computer Vision and Pattern Recognition (**CVPR 2017**), 2017.

Jongwon Choi, Hyung Jin Chang, **Sangdoo Yun**, Tobias Fischer, Yiannis Demiris, and Jin Young Choi, "Attentional Correlation Filter Network for Adaptive Visual Tracking", IEEE Computer Vision and Pattern Recognition (**CVPR 2017**), 2017.

Junho Cho, **Sangdoo Yun**, Kyoungmu Lee, Jin Young Choi, "PaletteNet: Image Recolorization with Given Color Palette", 2nd **NTIRE**: New Trends in Image Restoration and Enhancement workshop and challenge on super-resolution in conjunction with (**CVPR 2017**), 2017.

Sangdoo Yun, Kimin Yun, Jongwon Choi, and Jin Young Choi, "Density-Aware Pedestrian Proposal Networks for Robust People Detection in Crowded Scenes", International Workshop on Crowd Understanding in conjunction with European Conference on Computer Vision (**ECCV 2016**), 2016.

Kimin Yun, Jongin Lim, **Sangdoo Yun**, Soo Wan Kim, and Jin Young Choi, "Attention-Inspired Moving Object Detection in Monocular Dashcam Videos", International Conference on Pattern Recognition (**ICPR 2016**), 2016.

YoungJoon Yoo, Kimin Yun, **Sangdoo Yun**, JongHee Hong, Hawook Jeong and Jin Young Choi, "Visual Path Prediction in Complex Scenes with Crowded Moving Objects", IEEE Computer Vision and Pattern Recognition (**CVPR 2016**), 2016.

Sangdoo Yun and Jin Young Choi, "Voting-based 3D Object Cuboid Detection Robust to Partial Occlusion from RGB-D Images", IEEE Winter Conference on Applications of Computer Vision (**WACV 2016**), 2016.

Hawook Jeong, **Sangdoo Yun**, Kwang Moo Yi, and Jin Young Choi, "Category Attentional Search for Fast Object Detection by Mimicking Human Visual Perception", IEEE Winter Conference on Applications of Computer Vision (**WACV 2015**), 2015.

Sangdoo Yun, Kimin Yun, Soo Wan Kim, Youngjoon Yoo, and Jiyeoup Jeong, "Visual Surveillance Briefing System: Event-based Video Retrieval and Summarization", IEEE International Conference on Advanced Video and Signal based Surveillance (**AVSS 2014**), 2014. (**Oral**)

Tushar Sandhan, Youngjoon Yoo, Hanjoo Yoo, **Sangdoo Yun**, and Moonsub Byeon, "Multi-Task Learning with Over-Sampled Time-Series Representation of a Trajectory for Traffic Motion Pattern Recognition", IEEE International Conference on Advanced Video and Signal based Surveillance (**AVSS 2014**), 2014.

Sangdoo Yun, Hawook Jeong, Woo-Sung Kang, Byeongho Heo, and Jin Young Choi, "Self-organizing Cascaded Structure of Deformable Part Models for Fast Object Detection", IEEE International Conference on Pattern Recognition (**ICPR 2014**), 2014.

Sangdoo Yun, Soo Wan Kim, Kwang Moo Yi, Haan-ju Yoo, Jin Young Choi, "Multiple ground plane estimation for 3D scene understanding using a monocular camera", Proc. 27th International Conference of Image and Vision Computing New Zealand (**IVCNZ 2012**), 2012. (**Oral**)

Patent

US Patent 14/532,483. "Method and apparatus for processing image", May, 2015, published.

Research Experience

Postdoctoral Researcher   Sep. 2017 - Feb. 2018
Perception and Intelligence Lab., Seoul National University

Graduate Research Assistant   Mar. 2011 - Aug. 2017
Perception and Intelligence Lab., Seoul National University

Visiting Student   Jan. 2016 - Jan. 2016
Robotics Lab., The University of Auckland, New Zealand.

Awards and Honors

Ourstanding Reviewer Awards (**CVPR 2021**)

Award (top 30%), Vision Meets Drones: A Challenge (**ECCV 2018 Workshop**)

Best Paper Award, 30th Workshop on Image Processing and Image Understanding (**IPIU 2018**)

Best Poster Award, 30th Workshop on Image Processing and Image Understanding (**IPIU 2018**)

Best Paper Award, 29th Workshop on Image Processing and Image Understanding (**IPIU 2017**)

Work Experience

Development of Predictive Visual Intelligence Technology   Apr. 2014 - present
Sponsored by the ICT R&D program of MSIP/IITP. The goal of the project is developing predicting algorithms such as traffic flows.

Development of Real-time 3D Trajectory Estimation in Multi-camera Situation Jan. 2016 - Sep. 2016
Sponsored by Samsung SDS. The goal of the project is developing 3D trajectory estimation algorithm using multi-camera.

UAV Visual Surveillance System   Mar. 2014 - Feb. 2015
Sponsored by Samsung S1. The goal of the project is developing visual surveillance algorithms for unmanned aerial videos such as moving object detection in a non-stationary camera.

Intelligent Visual Surveillance System   Mar. 2010 - Aug. 2013
Sponsored by Samsung Techwin Co., Ltd. The goal of the project is developing visual analysis algorithms, such as background subtraction, object tracking and behavior understanding, and integrated system.

Teaching Experience

Convex Optimization, Seoul National University   Fall 2013
Teaching Assistant for Prof. Jin Young Choi

Introduction to Random Variables and Random Processes, Seoul National University   Spring 2013
Teaching Assistant for Prof. Jin Young Choi

Skills

Programming Languages:	Python, C++, C, MATLAB
Deep Learning Frameworks:	Tensorflow, PyTorch, Caffe, MatConvNet
Operating Systems:	Linux, Mac OS X, Windows

Professional Activities

Serve as a reviewer for CVPR, ICCV, ECCV, NeurIPS, ICLR, ICML, etc.

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