Junsik Kim

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Postdoc, Robotics and Computer Vision Lab., KAIST(Korea Advanced Institute of Science and Technology)

Research Interests	Deep Learning: Few shot learning Computer Vision: Image Recognition Autonomous Vehicle: Perception	
Research Experience	Hikvision Research America, Santa Clara, CA Research Intern	Aug. 2018 - Jan. 2019
	KAIST , Daejeon, Korea Research Assistant, Robotics and Computer Vision Lab	Feb. 2013 - present
Education	Ph.D. in Electrical Engineering, KAIST , Advisor: Prof. In So Kweon	Feb. 2015 - Feb. 2020
	M.S. in Electrical Engineering, KAIST , Advisor: Prof. In So Kweon	Feb. 2013 - Feb. 2015
	B.S. Electrical Engineering & Management Science dual degree, KAIST Magna cum laude	, Feb. 2008 - Feb. 2013

PUBLICATIONS International Journals

Arda Senocak, Tae-Hyun Oh, **Junsik Kim**, Ming-Hsuan Yang ,In So Kweon, "Learning to Localize Sound Source in Visual Scenes: Analysis and Applications", *IEEE Transactions on Pattern Analysis and Machine Intelligence* (**TPAMI**), to appear

Kyungdon Joo, Tae-Hyun Oh, **Junsik Kim**, In So Kweon, "Robust and Globally Optimal Manhattan Frame Estimation in Near Real Time", *IEEE Transactions on Pattern Analysis and Machine Intelligence* (**TPAMI**), 2019.

International Conferences

Dawit Mureja Argaw, Junsik Kim, Francois Rameau, In So Kweon "Motion-blurred Video Interpolation and Extrapolation", AAAI Conference on Artificial Intelligence (AAAI), Feb. 2021.

Dawit Mureja Argaw, **Junsik Kim**, Francois Rameau, In So Kweon "Optical Flow Estimation from a Single Motion-Blurred Image", *AAAI Conference on Artificial Intelligence* (**AAAI**), Feb. 2021.

Chaoning Zhang, Philipp Benz, Dawit Mureja Argaw, Seokju Lee, Junsik Kim, Francois Rameau, Jean-Charles Bazin, In So Kweon "ResNet or DenseNet? Introducing Dense Shortcuts to ResNet" *IEEE Winter Conference on Applications of Computer Vision* (WACV), Jan. 2021. Chaoning Zhang, Francois Rameau, Junsik Kim, Dawit Mureja Argaw, Jean-Charles Bazin, In So Kweon "DeepPTZ: Deep Self-Calibration for PTZ Cameras" *IEEE Winter Conference on Applications of Computer Vision* (WACV), Mar. 2020.

Chaoning Zhang, Francois Rameau, Seokju Lee, Junsik Kim, Philipp Benz, Dawit Mureja Argaw, Jean-Charles Bazin, In So Kweon "Revisiting Residual Networks with Nonlinear Shortcuts" *British Machine Vision Conference* (BMVC), Sep. 2019. (spotlight)

Seokju Lee, Junsik Kim, Tae-Hun Oh, Yongseop Jeong, Donggeun Yoo, Stephen Lin, In So Kweon "Visuomotor Understanding for Representation Learning of Driving Scenes" *British Machine Vision Conference* (BMVC), Sep. 2019.

Junsik Kim, Tae-Hyun Oh, Seokju Lee, Fei Pan, In So Kweon "Variational Prototyping-Encoder: One-Shot Learning with Prototypical Images" *IEEE International Conference on Computer Vision and Pattern Recognition* (CVPR), Jun. 2019.

Arda Senocak, Tae-Hyun Oh, Junsik Kim, In So Kweon "Part-based Player Identification using Deep Convolutional Representation and Multi-scale Pooling" *In CVSports workshop in conjunction with CVPR*, Jun. 2018. (Oral)

Arda Senocak, Tae-Hyun Oh, Junsik Kim, Ming-Hsuan Yang, In So Kweon "Learning to Localize Sound Source in Visual Scenes" *IEEE International Conference on Computer Vision and Pattern Recognition* (CVPR), Jun. 2018.

Junsik Kim, Seokju Lee, Tae-Hyun Oh, In So Kweon "Co-domain Embedding using Deep Quadruplet Networks for Unseen Traffic Sign Recognition", AAAI Conference on Artificial Intelligence (AAAI), Feb. 2018.

Seokju Lee, Junsik Kim, Jae Shin Yoon, Seunghak Shin, Oleksandr Bailo, Namil Kim, Tae-Hee Lee, Hyun Seok Hong, Seung-Hoon Han, In So Kweon "VPGNet: Vanishing Point Guided Network for Lane and Road Marking Detection and Recognition" *IEEE International Conference* on Computer Vision (ICCV), Oct. 2017.

Jae Shin Yoon, Francois Rameau, Junsik Kim, Seokju Lee, Seunghak Shin, In So Kweon "Pixel-Level Matching for Video Object Segmentation Using Convolutional Neural Networks" *IEEE International Conference on Computer Vision* (ICCV), Oct. 2017.

Kyungdon Joo, Tae-Hyun Oh, **Junsik Kim**, In So Kweon "Globally Optimal Manhattan Frame Estimation in Real-time" *IEEE International Conference on Computer Vision and Pattern Recognition* (**CVPR**), Jun. 2016.

Project

Self-supervised Representation Learning

funded by Samsung Electronics (DMC Research Center) Developed a sensor fusion recognition system for intelligent vehicles. Specifically, the work is to design urban scene recognition algorithm by multi-modal learning.

Lane detection under bad weather

Feb. 2016. - Nov 2016

Feb. 2017. -Dec. 2017

funded by Samsung Electronics (DMC Research Center)

Developed a lane and road marking detection and recognition algorithm using deep neural network. Specifically, the work was to design a new convolutional neural network to detect and recognize lane and road markings under bad weather conditions and operate the system in real-time.

Multi camera tracking

Dec. 2013. - Aug 2014

funded by Samsung Techwin

Developed a visual object tracking algorithm for the un-overlapped multi camera system. Specifically, the long-term single view tracking (single target tracking by group people tracking) and the person re-identification algorithms.

Honors & Awards	Qualcomm Innovation Awards Best Poster Presentation Award, IPIU Magna Cum Laude, KAIST, Honor Student Program, KAIST National Science and Engineering Scholarship, KOSAF	Sep. Feb.	2010 - 2008 -	Sep. Feb. Feb. Feb. Feb.	2018 2018 2012 2012 2012
Reviewers	IEEE Conference on Computer Vision and Pattern Recognition (CVPR) IEEE International Conference on Computer Vision (ICCV) European Conference on Computer Vision (ECCV) Conference on Neural Information Processing Systems (NeurIPS) International Conference on Machine Learning (ICML) International Conference on Learning Representations (ICLR) AAAI Conference on Artificial Intelligence (AAAI) British Machine Vision Conference (BMVC) Winter Conference on Applications of Computer Vision (WACV) Asia Conference on Computer Vision (ACCV)			2018~ 2018, 2020, 2020, 2019, 2020, 2018,	2021 2019 2020 2020 2021 2021 2021 2020 2021 2020
Teaching Experiences	EE405 Electronics Design Lab. EE548 Matrix Computations EE202 Signals and Systems		S	Spring Fall Spring	2014 2013 2012
Computer Skills	Languages: Python, Matlab Libraries: Pytorch, Torch				
References	 Prof. In So Kweon Professor, KAIST Relationship: MS & Ph.D advisor in KAIST Email: iskweon@kaist.ac.kr Dr. Zhe Hu Senior research scientist, Hikvision Relationship: Research internship mentor Email: zhe.hu@hikvision.com Prof. Ming-Hsuan Yang Professor, UC Merced Relationship: Collaborator E-mail:mhyang@ucmerced.edu 				