Junhwa Hur

Contact Information

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(+49) 157-8082-0713

Google Scholar
GitHub
Portfolio Website

Research Interest

Computer Vision, Machine Learning
Motion Estimation, Depth Estimation, Dense Visual Correspondence Estimation
Unsupervised/Self-Supervised Learning

Education

Technische Universität Darmstadt, Germany — Oct. 2015 –
Ph.D. candidate in Department of Computer Science
Research: Joint Motion, Semantic Segmentation, Occlusion, and Depth estimation
Advisor: Prof. Stefan Roth Ph.D.

Seoul National University, South Korea — 2011 – 2013
M.Sc. in Department of Electrical and Computer Engineering
Thesis: Multi-Lane Detection in Highway and Urban Driving Environment
Advisor: Prof. Seung-Woo Seo Ph.D.

Pohang University of Science and Technology, South Korea — 2007 – 2011
B.Sc. in Department of Electronics and Electrical Engineering
Magna Cum Laude
Advisor: Prof. Jin-Soo Lee Ph.D.

Academic Experience

Technische Universität Darmstadt, Germany — Oct. 2015 – Oct. 2020
RA & TA in Department of Computer Science
Researching on understanding dynamic scenes: motion, depth estimation, and semantic segmentation with (self-)supervised learning.
TA for computer vision lectures, student thesis/project advising

Seoul National University, South Korea — Sep. 2011 – Dec. 2014
RA in Department of Electrical and Computer Engineering
Research on building computer vision system for autonomous driving.

Work Experience

Korea Institute of Science and Technology (KIST), South Korea — Feb. 2014 – Aug. 2015
Internship in Imaging Media Research Center
Dense correspondence estimation for 3D modeling of non-rigid objects.

Hyundai Mobis Technical Research Institute, South Korea — Winter 2010
Internship in Power Electronics Department

Publications

Junhwa Hur and Stefan Roth, "Self-Supervised Monocular Scene Flow Estimation", in Proc. of the IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), 2020, **Oral Presentation**

Junhwa Hur and Stefan Roth, "Iterative Residual Refinement for Joint Optical Flow and Occlusion Estimation", in Proc. of the IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), 2019

Simon Meister, Junhwa Hur and Stefan Roth, "UnFlow: Unsupervised Learning of Optical Flow with a Bidirectional Census Loss", in Proc. of the AAAI Conference on Artificial Intelligence (**AAAI**), 2018, **Oral Presentation**

Junhwa Hur and Stefan Roth, "MirrorFlow: Exploiting Symmetries in Joint Optical Flow and Occlusion Estimation", in Proc. of the International Conference on Computer Vision (**ICCV**), 2017

Junhwa Hur and Stefan Roth, "Joint Optical Flow and Temporally Consistent Semantic Segmentation", in Proc. Of the ECCV Workshop on Computer Vision for Road Scene Understanding and Autonomous Driving (**ECCVW**), 2016, **Best paper award**

Junhwa Hur, Hwasup Lim, Changsoo Park, Sang Chul Ahn, "Generalized Deformable Spatial Pyramid: Geometry-Preserving Dense Correspondence Estimation", in Proc. of the IEEE Computer Vision and Pattern Recognition (**CVPR**), 2015

Junhwa Hur, Hwasup Lim, Sang Chul Ahn, "3D Deformable Spatial Pyramid for Dense 3D Motion Flow of Deformable Object", in Proc. of the International Symposium on Visual Computing (**ISVC**), 2014

Seung-Nam Kang, Soo-Mok Lee, Junhwa Hur, and Seung-Woo Seo, "Multi-lane Detection based on Accurate Geometric Lane Estimation in Highway Scenarios", in Proc. of the IEEE Intelligent Vehicles Symposium (**IV**), 2014

Junhwa Hur, Seung-Nam Kang, and Seung-Woo Seo, "Multi-lane Detection in Urban Driving Environments using Conditional Random Fields", in Proc. of the IEEE Intelligent Vehicles Symposium (**IV**), 2013.

Junhwa Hur, "Multi-lane Detection in Highway and Urban Driving Environment", Master's thesis, Seoul National University, 2013

Awards and Honors

Outstanding Reviewer Award, ACCV 2020
Doctoral Consortium, CVPR 2020
Outstanding Reviewer Award, ECCV 2020
Outstanding Reviewer Award, CVPR 2018, 2019, 2020
Best Paper Award, 21. Darmstädter Computer Graphik Abend 2019, Impact on Science
Best Paper Award, 20. Darmstädter Computer Graphik Abend 2018, Impact on Science
Best Paper Award, ECCV Workshops 2016 - Computer Vision for Road Scene Understanding and Autonomous Driving
2nd Winner Prize, Korea Autonomous Vehicle Contest 2013
Awards for Excellent Records, Unmanned Solar Challenge
National Science and Engineering Scholarship, Korea Student Aid Foundation, 2007 – 2011
Merit based Scholarship, Pohang University of Science and Technology, 2007 – 2008

Professional Service

Conference Reviewing
CVPR (2018 – 2021), ICCV (2019), ECCV (2018, 2020), ACCV (2018, 2020), WACV (2021), ITSC (2015)

Journal Reviewing
T-PAMI (2019 – 2020), T-IP (2019 – 2020). RA-L (2020), T-ITS (2014), ITSM (2016 – 2018)