

## Junhwa Hur

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| CONTACT<br>INFORMATION | <a href="mailto:junhwa.hur@gmail.com">junhwa.hur@gmail.com</a><br>(+49) 157-8082-0713   | Google Scholar<br>GitHub<br>Portfolio Website   |
| RESEARCH<br>INTEREST   | Computer Vision, Machine Learning<br>Motion Estimation, Depth Estimation, Dense Visual Correspondence Estimation<br>Unsupervised/Self-Supervised Learning   |   |
| EDUCATION              | <b>Technische Universität Darmstadt</b> , Germany<br>Ph.D. candidate in Department of Computer Science<br>Research: Joint Motion, Semantic Segmentation, Occlusion, and Depth estimation<br>Advisor: Prof. Stefan Roth Ph.D.<br><br><b>Seoul National University</b> , South Korea<br>M.Sc. in Department of Electrical and Computer Engineering<br>Thesis: Multi-Lane Detection in Highway and Urban Driving Environment<br>Advisor: Prof. Seung-Woo Seo Ph.D.<br><br><b>Pohang University of Science and Technology</b> , South Korea<br>B.Sc. in Department of Electronics and Electrical Engineering<br>Magna Cum Laude<br>Advisor: Prof. Jin-Soo Lee Ph.D. | Oct. 2015 –<br><br><br><br><br><br><br><br><br><br>2011 – 2013<br><br><br><br><br><br><br><br><br><br>2007 – 2011 |
| ACADEMIC<br>EXPERIENCE | <b>Technische Universität Darmstadt</b> , Germany<br>RA & TA in Department of Computer Science<br>Researching on understanding dynamic scenes: motion, depth estimation, and semantic segmentation with (self-)supervised learning.<br>TA for computer vision lectures, student thesis/project advising<br><br><b>Seoul National University</b> , South Korea<br>RA in Department of Electrical and Computer Engineering<br>Research on building computer vision system for autonomous driving.   | Oct. 2015 –<br>Oct. 2020<br><br><br><br><br><br><br><br><br><br>Sep. 2011 –<br>Dec. 2014                          |
| WORK<br>EXPERIENCE     | <b>Korea Institute of Science and Technology (KIST)</b> , South Korea<br>Internship in Imaging Media Research Center<br>Dense correspondence estimation for 3D modeling of non-rigid objects.<br><br><b>Hyundai Mobis Technical Research Institute</b> , South Korea<br>Internship in Power Electronics Department  | Feb. 2014 –<br>Aug. 2015<br><br><br><br><br><br><br>Winter 2010   |
| PUBLICATIONS           | Junhwa Hur and Stefan Roth, "Self-Supervised Monocular Scene Flow Estimation", in Proc. of the IEEE Conference on Computer Vision and Pattern Recognition ( <b>CVPR</b> ), 2020, <b>Oral Presentation</b><br><br>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 ( <b>CVPR</b> ), 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)