

Sunghoon Im

CONTACT INFORMATION	DGIST (Daegu Gyeongbuk Institute of Science and Technology) Dept. Electrical Engineering and Computer Science (EECS) Dept. Artificial Intelligence (AI) E3-314, Techno jungang-daero 333, Hyeonpung-eup, Dalseong-gun, Daegu, Republic of Korea, 42988	Tel.: +82-53-785-6323 E-mail: sunghoonim@dgist.ac.kr Homepage: https://cvlab.dgist.ac.kr/
RESEARCH INTERESTS	Visual Intelligence / Artificial General Intelligence / Multi-modal AI	
ACADEMIC APPOINTMENTS	DGIST , Daegu, Korea <i>Managing Director</i> , DGIST Supercomputing and AI Education & Research Center	Jan 2025 – Present
	DGIST , Daegu, Korea <i>Associate Professor</i> , Electrical Engineering and Computer Science	Mar 2023 – Present
	DGIST , Daegu, Korea <i>Assistant Professor</i> , Electrical Engineering and Computer Science	Sep 2019 – Feb 2023
	Carnegie Mellon University (CMU) , Pittsburgh, US <i>Visiting Scholar</i> , Robotics Institute, working with Prof. Martial Hebert and Prof. Jean Oh.	Jun 2019 – Aug 2019
	Microsoft Research Asia (MSRA) , Beijing, China <i>Research Intern</i> , Internet Graphics Group, working with Dr. Stephen Lin.	Feb 2018 – Aug 2018
	KAIST , Daejeon, Korea <i>Research Assistant</i> , Robotics and Computer Vision Lab., working with Prof. In So Kweon	Mar 2014 – Aug 2019
EDUCATION	KAIST , Daejeon, Korea Ph.D., Electrical Engineering • Dissertation: “Robust 3D Imaging using a Single Hand-held Cameras” • Advisor: Prof. In So Kweon	Aug 2019
	M.S., Electrical Engineering • Advisor: Prof. In So Kweon	Feb 2016
	Sogang University , Seoul, Korea B.S., Electronic Engineering • Summa cum laude	Feb 2014
PUBLICATIONS	International Journal (Co-first*, Corresponding [†]) <ol style="list-style-type: none">Jaeyeul Kim, Jungwan Woo, Ukcheol Shin, Jean Oh, and Sunghoon Im[†], “Flow4D: Leveraging 4D Voxel Network for LiDAR Scene Flow Estimation”, <i>IEEE Robotics and Automation Letters (RAL)</i>, Apr 2025.Jinwoo Bae, Kyumin Hwang and Sunghoon Im[†], “A Study on the Generality of Neural Network Structures for Monocular Depth Estimation”, <i>IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI)</i>, Apr 2024.	

3. Hae-Gon Jeon, **Sunghoon Im**[†], Byeong-Uk Lee, Francois Rameau, Dong-Geol Choi, Jean Oh, In So Kweon, and Martial Hebert, “A Large-scale Virtual Dataset and Egocentric Localization for Disaster Responses”, *IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI)*, Jun 2023.
4. Jeonghoon Kim, **Sunghoon Im**, and Sunghyun Cho, “ProFeat: Unsupervised Image Clustering via Progressive Feature Refinement”, *Pattern Recognition Letters (PRL)*, Nov 2022.
5. Jaeyeul Kim*, Jungwan Woo*, and **Sunghoon Im**[†], “RVMOS: Range-View Moving Object Segmentation leveraged by Semantic and Motion Features”, *IEEE Robotics and Automation Letters (RAL)*, Jun 2022.
6. Seokju Lee, Francois Rameau, **Sunghoon Im**, and In So Kweon, “Self-supervised Monocular Depth and Motion Learning in Dynamic Scenes: Semantic Prior to Rescue”, *International Journal of Computer Vision (IJCV)*, 2022.
7. Hae-Gon Jeon, **Sunghoon Im**[†], Jaesung Choe, Minjun Kang, Joon-Young Lee, and Martial Hebert, “CMSNet: Deep Color and Monochrome Stereo”, *International Journal of Computer Vision (IJCV)*, Jan 2022.
8. **Sunghoon Im**, Hyowon Ha, Hae-Gon Jeon, Stephen Lin, and In So Kweon, “Deep Depth from Uncalibrated Small Motion Clip”, *IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI)*, Apr 2021.
9. Hae-Gon Jeon, Jaeheung Surh, **Sunghoon Im**, and In So Kweon, “Ring Difference Filter for Fast and Noise Robust Depth from Focus”, *IEEE Transactions on Image Processing (TIP)*, Dec 2020.
10. **Sunghoon Im**, Hae-Gon Jeon, and In So Kweon, “Robust Depth Estimation using Auto-Exposure Bracketing”, *IEEE Transactions on Image Processing (TIP)*, May 2019.
11. **Sunghoon Im**, Hyowon Ha, Gyeongmin Choe, Hae-Gon Jeon, Kyungdon Joo, and In So Kweon, “Accurate 3D Reconstruction from Small Motion Clip for Rolling Shutter Cameras”, *IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI)*, Apr 2019.
12. Gyeongmin Choe, Seong-heum Kim, **Sunghoon Im**, Joon-Young Lee, Srinivasa Narasimhan, and In So Kweon, “RANUS: RGB and NIR Urban Scene Dataset for Deep Scene Parsing”, *IEEE Robotics and Automation Letters (RAL)*, Feb 2018.
13. Seunghak Shin, **Sunghoon Im**, Inwook Shim, Hae-Gon Jeon, and In So Kweon, “Geometry Guided 3D propagation for Depth from Small Motion”, *IEEE Signal Processing Letters (SPL)*, Dec 2017.

International Conference/Workshop (Co-first*, Corresponding[†])

1. Jihun Park*, Jongmin Gim*, Kyoungmin Lee*, Seunghun Lee and **Sunghoon Im**[†], “Style-Editor: Text-driven object-centric style editing”, *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, Jun 2025.
2. Woo Kyoung Han, Byeonghun Lee, Hyunmin Cho, **Sunghoon Im**[†] and Kyong Hwan Jin[†], “Towards Lossless Implicit Neural Representation via Bit Plane Decomposition”, *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, Jun 2025.
3. Wonhyeok Choi*, Kyumin Hwang*, Wei Peng, Minwoo Choi and **Sunghoon Im**[†], “Self-supervised Monocular Depth Estimation Robust to Reflective Surface Leveraged by Triplet Mining”, *International Conference on Learning Representations (ICLR)*, May 2025.

4. Wonhyeok Choi*, Kyumin Hwang*, Kiljoon Han, Wonjoon Choi, Mingyu Shin and **Sunghoon Im**[†], “Intrinsic Image Decomposition for Robust Self-supervised Monocular Depth Estimation on Reflective Surfaces”, *The Association for the Advancement of Artificial Intelligence (AAAI)*, Feb 2025.
5. Jongmin Gim*, Jihun Park*, Kyoungmin Lee* and **Sunghoon Im**[†], “Content-Adaptive Style Transfer: A Training-Free Approach with VQ Autoencoders”, *Asian Conference on Computer Vision (ACCV)*, Dec 2024.
6. Jaeyeul Kim*, Jungwan Woo*, Jeonghoon Kim and **Sunghoon Im**[†], “Rethinking LiDAR Domain Generalization: Single Source as Multiple Density Domains”, *In Proc. of European Conference on Computer Vision (ECCV)*, Oct 2024.
7. EungGu Kang, Byeonghun Lee, **Sunghoon Im**[†] and Kyong Hwan Jin[†], “BurstM: Deep Burst Multi-scale SR using Fourier Space with Optical Flow”, *In Proc. of European Conference on Computer Vision (ECCV)*, Oct 2024.
8. Jaeyeul Kim*, Jungwan Woo*, Ukcheol Shin, Jean Oh and **Sunghoon Im**[†], “Density-aware Domain Generalization for LiDAR Semantic Segmentation”, *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, Oct 2024.
9. Woo Kyoung Han, **Sunghoon Im**, Jaedeok Kim and Kyong Hwan Jin, “JDEC: JPEG Decoding via Enhanced Continuous Cosine Coefficients”, *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, Jun 2024.
10. Wonhyeok Choi*, Mingyu Shin*, Hyukzae Lee, Jaehoon Cho, Jaehyeon Park and **Sunghoon Im**[†], “Multi-task Learning for Real-time Autonomous Driving Leveraging Task-adaptive Attention Generator”, *IEEE International Conference on Robotics and Automation (ICRA)*, May 2024.
11. Hojin Kim, Seunghun Lee, Hyeon Kang and **Sunghoon Im**[†], “IOffline-to-Online Knowledge Distillation for Video Instance Segmentation”, *IEEE/CVF Winter Conference on Applications of Computer Vision (WACV)* oral, Jan 2024.
12. Minsu Kim, Jaewon Lee, Byeonghun Lee, **Sunghoon Im** and Kyeonghwan Jin, “Implicit Neural Image Stitching With Enhanced and Blended Feature Reconstruction”, *IEEE/CVF Winter Conference on Applications of Computer Vision (WACV)*, Jan 2024.
13. Wonhyeok Choi*, Mingyu Shin* and **Sunghoon Im**[†], “Depth-discriminative Metric Learning for Monocular 3D Object Detection”, *Neural Information Processing Systems (NeurIPS)*, Dec 2023.
14. Changjae Kim, Seunghun Lee and **Sunghoon Im**[†], “Multi-Target Domain Adaptation with Class-Wise Attribute Transfer in Semantic Segmentation”, *British Machine Vision Conference (BMVC)*, Nov 2023.
15. Sungho Moon, Jinwoo Bae and **Sunghoon Im**[†], “Rotation Matters: Generalized Monocular 3D Object Detection for Various Camera System”, *IEEE Conference on Computer Vision and Pattern Recognition Workshop (CVPRw)*, Jun 2023.
16. Wonhyeok Choi and **Sunghoon Im**[†], “Dynamic Neural Network for Multi-Task Learning Searching across Diverse Network Topologies”, *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, Jun 2023.
17. Jinwoo Bae, Sungho Moon, and **Sunghoon Im**[†], “Deep Digging into the Generalization of Self-supervised Monocular Depth Estimation”, *The Thirty-Seventh AAAI Conference on Artificial Intelligence (AAAI)*, Feb 2023.

18. Jungwan Woo*, Jaeyeul Kim*, and **Sunghoon Im**[†], “LiDAR 3D Object Detection via Self-Training and Knowledge Distillation”, *ECCV workshop on 3D Perception for Autonomous Driving (ECCVw)*, Oct 2022.
19. Minjun Kang, Jaesung Choe, Hyowon Ha, Hae-Gon Jeon, **Sunghoon Im**, In So Kweon, and Kuk-Jin Yoon, “Facial Depth and Normal Estimation using Single Dual-Pixel Camera”, *In Proc. of European Conference on Computer Vision (ECCV)*, Oct 2022.
20. Seunghun Lee, Wonhyeok Choi, Changjae Kim, Minwoo Choi, and **Sunghoon Im**[†], “ADAS: A Direct Adaptation Strategy for Multi-Target Domain Adaptive Semantic Segmentation”, *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, Jun 2022.
21. Jaesung Choe, **Sunghoon Im**, Francois Rameau, Minjun Kang, and In So Kweon, “VolumeFusion: Deep Depth Fusion for 3D Scene Reconstruction”, *In Proc. of IEEE International Conference on Computer Vision (ICCV)*, Dec 2021.
22. Dahoon Park, Kon-Woo Kwon, **Sunghoon Im**, and Jaeha Kung, “ZeBRA: Precisely Destroying Neural Networks with Zero-Data Based Repeated Bit Flip Attack”, *British Machine Vision Conference (BMVC)*, Nov 2021.
23. Seunghun Lee, Sunghyun Cho, and **Sunghoon Im**[†], “DRANet: Disentangling Representation and Adaptation Networks for Unsupervised Cross-Domain Adaptation”, *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, Jun 2021.
24. Jeonghoon Kim, **Sunghoon Im**, and Sunghyun Cho, “ProFeat: Unsupervised Image Clustering via Progressive Feature Refinement”, *Workshop on Learning From Limited or Imperfect Data (CVPRw)*, Jun 2021.
25. Seokju Lee, **Sunghoon Im**, Stephen Lin, and In So Kweon, “Learning Monocular Depth in Dynamic Scenes via Instance-Aware Projection Consistency”, *The Thirty-Fifth AAAI Conference on Artificial Intelligence (AAAI)*, Feb 2021.
26. Seokju Lee, **Sunghoon Im**, Stephen Lin, and In So Kweon, “Instance-wise Depth and Motion Learning from Monocular Videos”, *Workshop on Machine Learning for Autonomous Driving & Workshop on Differentiable computer vision, graphics, and physics in machine learning (NeurIPSw)*, Dec 2020.
27. Hae-Gon Jeon, **Sunghoon Im**[†], Jean Oh, and Martial Hebert, “Learning Shape-based Representation for Visual Localization in Extremely Changing Conditions”, *IEEE International Conference on Robotics and Automations (ICRA)*, May 2020.
28. Hae-Gon Jeon, **Sunghoon Im**, Byeong-Uk Lee, Dong-Geol Choi, Martial Hebert, and In So Kweon, “DISC: A Large-scale Virtual Dataset for Simulating Disaster Scenarios”, *IEEE/RSJ International Conference on Intelligence Robots and System (IROS)*, Nov 2019.
29. Seokju Lee, **Sunghoon Im**, Stephen Lin, and In So Kweon, “Learning Residual Flow as Dynamic Motion from Stereo Video”, *IEEE/RSJ International Conference on Intelligence Robots and System (IROS)*, Nov 2019.
30. **Sunghoon Im**, Hae-Gon Jeon, Stephen Lin, and In So Kweon, “DPSNet: End-to-end Deep Plane Sweep Stereo”, *International Conference on Learning Representations (ICLR)*, May 2019.
31. Byeong-Uk Lee, Hae-Gon Jeon, **Sunghoon Im**, and In So Kweon, “Depth Completion with Deep Geometry and Context Guidance”, *IEEE International Conference on Robotics and Automations (ICRA)*, May 2019.

32. **Sunghoon Im**, Hae-Gon Jeon, and In So Kweon, "Robust Depth Estimation from Auto Bracketed Images", *In Proc. of IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, Jun 2018.
33. Jaeheung Surh, Hae-Gon Jeon, Yunwon Park, **Sunghoon Im**, Hyowon Ha, and In So Kweon, "Noise Robust Depth from Focus using a Ring Difference Filter", *In Proc. of IEEE Conference on Computer Vision and Pattern Recognition (CVPR) [Spotlight]*, Jul 2017.
34. **Sunghoon Im**, Hyowon Ha, Francois Rameau, Hae-Gon Jeon, Gyeongmin Choe, and In So Kweon, "All-around Depth from Small Motion with A Spherical Panoramic Camera", *In Proc. of European Conference on Computer Vision (ECCV)*, Oct 2016.
35. Hyowon Ha, **Sunghoon Im**, Jaesik Park, Hae-Gon Jeon, and In So Kweon, "High-quality Depth from Uncalibrated Small Motion Clip", *In Proc. of IEEE Conference on Computer Vision and Pattern Recognition (CVPR) [Oral]*, Jun 2016.
36. Hae-Gon Jeon, Joon-Young Lee, **Sunghoon Im**, Hyowon Ha, and In So Kweon, "Stereo Matching with Color and Monochrome Cameras in Low-light Conditions", *In Proc. of IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, Jun 2016.
37. **Sunghoon Im**, Hyowon Ha, Gyeongmin Choe, Hae-Gon Jeon, Kyungdon Joo, and In So Kweon, "High Quality Structure from Small Motion for Rolling Shutter Cameras", *In Proc. of IEEE International Conference on Computer Vision (ICCV)*, Dec 2015.
38. **Sunghoon Im**, Gyeongmin Choe, Hae-Gon Jeon, and In So Kweon, "Depth from Accidental Motion using Geometry Prior", *In Proc. of IEEE International Conference on Image Processing (ICIP) [Top 10% paper]*, Sep 2015.

Other Publications

1. Jaeheung Surh, Hae-Gon Jeon, Hyowon Ha, **Sunghoon Im** and In So Kweon, "Fast Depth from Defocus with Your Mobile Phone for Synthetic Defocus", *In Proc. of the 28th Workshop on Image Processing and Image Understanding (IPIU)*, Feb 2016.
2. **Sunghoon Im**, Hae-Gon Jeon, Hyowon Ha and In So Kweon, "Depth Estimation from Light Field Cameras", *In Proc. of the 12th International Conference on Ubiquitous Robots and Ambient Intelligence (URAI)*, Oct 2015.
3. Dong-jin Kim, Donggeun Yoo, **Sunghoon Im**, Namil Kim, T. Sirinukulwattana and In So Kweon, "Relative Attributes with Deep Convolutional Neural Network", *In Proc. of the 12th International Conference on Ubiquitous Robots and Ambient Intelligence (URAI)*, Oct 2015.

TEACHING

- Advanced Deep Learning, Spring 2022, Spring 2024.
- Artificial Intelligence Basics, Fall 2021, Fall 2022, Fall 2023.
- Introduction to Deep Learning, Fall 2020, Fall 2021, Fall 2022, Fall 2023, Fall 2024.
- Deep Learning, Spring 2020.
- Computer Vision, Fall 2019, Spring 2021, Spring 2023, Spring 2025.

ACADEMIC SERVICES

- Editor - IEIE Transactions on Smart Processing and Computing (SPC)
- Program committee - Korean Conference on Computer Vision (KCCV) 2022-2024
- Program committee - Workshop on Image Processing and Image Understanding (IPIU) 2022-2024
- Editor - The Information and Communications Technology Express (ICT Express)
- Local chair - International Technical Conference on Circuits/Systems, Computers and Communications (ITC-CSCC) 2021

REVIEWER (JOURNAL)	<ul style="list-style-type: none"> • IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI) • International Journal of Computer Vision (IJCV) • Computer Vision and Image Understanding (CVIU) • IEEE/ASME Transactions on Mechatronics (TMECH) • IEEE Transactions on Instrumentation and Measurement (TIM) • Pattern Recognition (PR) • Neurocomputing • IEEE Robotics and Automation Letters (RAL) • IEEE Access • International Journal of Control, Automation and Systems (IJCAS) • IEIE Transactions on Smart Processing and Computing (IEIE SPC) • Journal of Institute of Control, Robotics and Systems (ICROS) 	
REVIEWER (CONFERENCE)	<ul style="list-style-type: none"> • SIGGRAPH Asia 2022 • IEEE Conference on Computer Vision and Pattern Recognition (CVPR) 2019-2024 • IEEE International Conference on Computer Vision (ICCV) 2019-2023 • European Conference on Computer Vision (ECCV) 2020-2024 • Conference on Neural Information Processing Systems (NeurIPS) 2020-2024 • International Conference on Machine Learning (ICML) 2020-2024 • International Conference on Learning Representations (ICLR) 2021-2024 • Association for the Advancement of Artificial Intelligence (AAAI) 2020-2024 • IEEE International Conference on Robotics and Automations (ICRA) 2021-2023 • IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS) 2017 • Asian Conference on Computer Vision (ACCV) 2020 • IEEE Winter Conference on Applications of Computer Vision (WACV) 2020 • International Conference on 3D Vision (3DV) 2020 • International Conference on Machine Vision Applications (ICMVA) 2021 • International Conference on Control, Automation and Systems (ICCAS) 2020 	
INDUSTRY CONSULTATION	<ul style="list-style-type: none"> • 10K1M, Mar-Dec 2024 • 10K1M, Jan-Dec 2023 • DWorld, Feb-Mar 2021 • Dabeeo, Feb-Jun 2020 	
AWARDS	<ul style="list-style-type: none"> • Winner, Argoverse LiDAR Scene Flow Challenge (CVPRw) Jun 2024 • Honorable Mention, Argoverse 4D Occupancy Forecasting Challenge (CVPRw) Jun 2024 • Honorable Mention, Argoverse End-to-End Forecasting Challenge (CVPRw) Jun 2023 • AFCV best robot vision paper award Feb 2023 • ADAI: Autonomous Driving A.I. challenge Nov 2022 • ECCV workshop on 3D Perception for Autonomous Driving (ECCVw) 3rd place Oct 2022 • Best Academic Award, DGIST Sep 2021 • Excellent Student Award, 2018 Research Performance Evaluation, KAIST EE Apr 2019 • Best Poster Award, 2018 Samsung AI Forum, Samsung Research Sep 2018 • Excellent Intern Award, Microsoft Research Asia (MSRA) Aug 2018 • Honor Student Award, 2017 Research Performance Evaluation, KAIST EE Apr 2018 • Kim Choong-Ki Award, 2016 Research Performance Evaluation, KAIST EE Apr 2017 • Best Poster Presentation Award, IPIU 2017 Feb 2017 • Qualcomm Innovation Award 2016, Qualcomm Korea Corp. and KAIST Mar 2016 • Silver prize, 22th HumanTech Paper Award, Samsung Electronics Co., Ltd. Feb 2016 • Best Poster Award, IWRCV 2015 General Chair Nov 2015 • Official Best 10% Paper Selection, ICIP 2015 Organizing Committee Sep 2015 • Design Project Competition(Silver Prize), Sogang University Nov 2013 • Prize for the top first percentile GPA, Sogang University Sep 2011, Feb 2012, Sep 2012 	

HONORS	• CVPR 2024 Outstanding reviewer	Jun 2024
	• NeurIPS 2020 Top 10% of high-scoring reviewer	Oct 2020
	• CVPR 2019 Doctoral Consortium	Jun 2019
	• ICLR 2019 Travel Award	May 2019
	• Microsoft Research Asia (MSRA) fellowship 2018 Winner	Oct 2018
	• Global Ph.D. Fellowship, National Research Foundation of Korea	Aug 2016
	• International Computer Vision Summer School (ICVSS 2016), Sicily, Italy	July 2016
	• Summa Cum Laude, Sogang University	Feb 2014
	• Academic Excellence Scholarship, Sogang University	Seb 2012 – Feb 2013
	• Scholarship, Korea Scholarship Foundation	Feb 2012 – Feb 2014

IT SKILLS	• Languages: Python, MATLAB, C, C++, \LaTeX
	• Deep Learning Framework: Pytorch, Torch, TensorFlow

Last Update: 2025/03/17