

# DONGBO MIN

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## RESEARCH INTEREST

**Deep Learning:** Pretraining for Vision Foundation Model, Self-Supervised Learning, Domain Generalization, Lightweight Model, Multi-Task Learning  
**Robotics:** Vision-Language-Action Foundation Model, Reinforcement Learning, Domain Generalization for Robotics, Autonomous Driving  
**Computer Vision:** Visual Scene Understanding (3D Depth, Segmentation, and 2D/3D Object Detection)

## EDUCATION

**PhD in Electrical and Electronics Engineering** 2009  
Yonsei University, Seoul, Korea (Supervisor: Prof. Kwanghoon Sohn)  
PhD thesis: **Multiview Stereo Matching and Freeview Video Generation for 3DTV System**  
**MS in Electrical and Electronics Engineering** 2005  
Yonsei University, Seoul, Korea (Supervisor: Prof. Kwanghoon Sohn)  
MS thesis: **Edge-preserving Joint Motion/Disparity Estimation in Stereo Image Sequences**  
**BS in Electrical and Electronics Engineering** 2003  
Yonsei University, Seoul, Korea

## WORK EXPERIENCES

**Ewha Womans University (EWU)** Seoul, Korea  
*Associate Professor*, Dept. of Computer Science and Engineering (CSE) 03/2021 – Present  
*Assistant Professor*, Dept. of Computer Science and Engineering (CSE) 03/2018 – 02/2021  
**The University of British Columbia (UBC)** Vancouver, Canada  
*Visiting Associate Professor*, Dept. of Computer Science (CS) 02/2024 – 01/2025  
**Chungnam National University (CNU)** Daejeon, Korea  
*Assistant Professor*, Dept. of Computer Science and Engineering (CSE) 03/2015 – 2018/02  
Director of the Computer Vision Lab (CVLab), CNU, Korea  
**Advanced Digital Sciences Center (ADSC)<sup>1</sup>** Singapore  
*Research Scientist* 07/2012 – 02/2015  
*Researcher* 07/2010 – 06/2012  
**Mitsubishi Electric Research Laboratories (MERL)** Cambridge, MA, US  
*Post-Doctoral Researcher* 06/2009 – 06/2010  
**Yonsei University** Seoul, Korea  
*Research Assistant* 03/2003 – 05/2009  
**Coordinated Science Laboratory (CSL), UIUC** Urbana-Champaign, IL, US  
*Principal Research Affiliate* (Joint appointment at CSL) 10/2012 – 02/2015

## PROFESSIONAL SERVICES

**Ewha Womans University (EWU)** Seoul, Korea  
*Department Chair*, Dept. of Computer Science and Engineering (CSE) 08/2025 – 07/2027  
*Department Chair*, Dept. of Artificial Intelligence (AI) 03/2022 – 01/2024  
*Vice Dean*, School of Artificial Intelligence (AI)<sup>2</sup> 02/2023 – 01/2024

<sup>1</sup>The national research institute co-founded by Univ. of Illinois at Urbana-Champaign (UIUC) and A\*STAR (Singapore Government Agency)

<sup>2</sup>The School of AI at EWU was newly established in 2023, consisting of four departments; CSE, Cyber-security, AI, and Data Science. As a founding member of the School of AI, I took the lead in designing the curriculum for the Department of AI and initiating the School of AI.

## PUBLICATIONS

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- For more information on the latest publications, see [dblp](#) or [Google Scholar](#).
- †: equal contribution

### International Conference

1. Minhee Cho<sup>†</sup>, Sumin Park<sup>†</sup>, and **Dongbo Min**  
TRACE: TRacking and Addressing Cross-domain conflict for Enhanced Semantic Segmentation  
*IEEE Int. Conf. on Acoustics, Speech, and Signal Processing (ICASSP)*, May 2026
2. Minhee Cho, Hyesong Choi, Hayeon Jo, and **Dongbo Min**  
CLDA: Collaborative Learning for Unsupervised Enhanced Domain Adaptation  
*IEEE Int. Conf. on Acoustics, Speech, and Signal Processing (ICASSP)*, May 2026
3. Soyul Lee<sup>†</sup>, Seungmin Baek<sup>†</sup>, **Dongbo Min**  
Difficulty-Aware Label-Guided Denoising for Monocular 3D Object Detection  
*AAAI Conference on Artificial Intelligence (AAAI)*, Jan. 2026
4. Jueun Ko<sup>†</sup>, Hyewon Park<sup>†</sup>, Hyesong Choi, and **Dongbo Min**  
RobIA: Robust Instance-aware Continual Test-time Adaptation for Deep Stereo  
*Neural Information Processing Systems (NeurIPS)*, Dec. 2025
5. Hyewon Park, Hyejin Park, Jueun Ko, and **Dongbo Min**  
Hybrid-TTA: Continual Test-time Adaptation via Dynamic Domain Shift Detection  
*IEEE Int. Conf. on Computer Vision (ICCV)*, Oct. 2025
6. Seungmin Baek<sup>†</sup>, Soyul Lee<sup>†</sup>, Hayeon Jo, Hyesong Choi, and **Dongbo Min**  
TADFormer: Task-Adaptive Dynamic TransFormer for Efficient Multi-Task Learning  
*IEEE Int. Conf. on Computer Vision and Pattern Recognition (CVPR)*, Jun. 2025
7. Wonil Song, Hyesong Choi, Kwanghoon Sohn, and **Dongbo Min**  
A Simple Framework for Generalization in Visual RL under Dynamic Scene Perturbations  
*Neural Information Processing Systems (NeurIPS)*, Dec. 2024
8. Wonil Song, Kwanghoon Sohn, and **Dongbo Min**  
Improving Self-supervised Vision Transformers for Visual Control  
*IEEE Int. Conf. on Image Processing (ICIP)*, Oct. 2024.
9. Hyejin Park and **Dongbo Min**  
Dynamic Guidance Adversarial Distillation with Enhanced Teacher Knowledge  
*European Conf. on Computer Vision (ECCV)*, Sep. 2024
10. Hyesong Choi, Hunsang Lee, Seyoung Joung, Hyejin Park, Jiyeong Kim, and **Dongbo Min**  
Emerging Property of Masked Token for Effective Pre-training  
*European Conf. on Computer Vision (ECCV)*, Sep. 2024
11. Hyesong Choi, Hyejin Park, Kwang Moo Yi, Sungmin Cha, and **Dongbo Min**  
Salience-Based Adaptive Masking: Revisiting Token Dynamics for Enhanced Pre-training  
*European Conf. on Computer Vision (ECCV)*, Sep. 2024
12. Hyesong Choi, Hunsang Lee, Seongwon Jeong, and **Dongbo Min**  
Environment Agnostic Representation for Visual Reinforcement Learning  
*IEEE Int. Conf. on Computer Vision (ICCV)*, Oct. 2023
13. Hyesong Choi, Hunsang Lee, Wonil Song, Sangryul Jeon, Kwanghoon Sohn, and **Dongbo Min**  
Local-guided Global: Paired Similarity Representation for Visual Reinforcement Learning  
*IEEE Int. Conf. on Computer Vision and Pattern Recognition (CVPR)*, Jun. 2023.
14. Sunghwan Hong, Ji Su Nam, Seokju Cho, Susung Hong, Sangryul Jeon, **Dongbo Min**, and Seungryong Kim  
Neural Matching Fields: Implicit Representation of Matching Fields for Visual Correspondence  
*Neural Information Processing Systems (NeurIPS)*, Nov. 2022.
15. Kwonyoung Kim, JungIn Park, Jiyoung Lee, **Dongbo Min**, and Kwanghoon Sohn  
PointFix: Learning to Fix Domain Bias for Robust Online Stereo Adaptation  
*European Conference on Computer Vision (ECCV)*, Oct. 2022.
16. Sunkyoung Kim, Hyesong Choi, and **Dongbo Min**  
Sequential Cross Attention based Multi-Task Learning  
*IEEE Int. Conf. on Image Processing (ICIP)*, Oct. 2022.

17. Hunsang Lee, Hyesong Choi, Kwanghoon Sohn, and **Dongbo Min**  
KNN Local Attention for Image Restoration  
*IEEE Int. Conf. on Computer Vision and Pattern Recognition (CVPR)*, Jun. 2022.
18. Jin Kim, Jiyoung Lee, JungIn Park, **Dongbo Min\***, and Kwanghoon Sohn\*  
Pin the Memory: Learning to Generalize Semantic Segmentation  
*IEEE Int. Conf. on Computer Vision and Pattern Recognition (CVPR)*, Jun. 2022.
19. Hyesong Choi<sup>†</sup>, Hunsang Lee<sup>†</sup>, Sunkyung Kim, Sunok Kim, Seungryong Kim, Kwanghoon Sohn, and **Dongbo Min**  
Adaptive Confidence Thresholding for Monocular Depth Estimation  
*IEEE Int. Conf. on Computer Vision (ICCV)*, Oct. 2021.
20. Sangryul Jeon, **Dongbo Min**, Seungryong Kim, and Kwanghoon Sohn  
Mining Better Samples for Contrastive Learning of Temporal Correspondence  
*IEEE Int. Conf. on Computer Vision and Pattern Recognition (CVPR)*, Jun. 2021.
21. Sangryul Jeon, **Dongbo Min**, Seungryong Kim, Jihwan Choe, and Kwanghoon Sohn  
Guided Semantic Flow  
*European Conference on Computer Vision (ECCV)*, Aug. 2020.
22. Sangryul Jeon, **Dongbo Min**, Seungryong Kim, and Kwanghoon Sohn  
Joint Learning of Semantic Alignment and Object Landmark Detection  
*IEEE Int. Conf. on Computer Vision (ICCV)*, Oct. 2019.
23. Seungryong Kim, **Dongbo Min**, Somi Jeong, Sunok Kim, Sangryul Jeon, and Kwanghoon Sohn  
Semantic Attribute Matching Networks  
*IEEE Int. Conf. on Computer Vision and Pattern Recognition (CVPR)*, Jun. 2019
24. Sunok Kim, Seungryong Kim, **Dongbo Min**, and Kwanghoon Sohn  
LAF-Net: Locally Adaptive Fusion Networks for Stereo Confidence Estimation  
*IEEE Int. Conf. on Computer Vision and Pattern Recognition (CVPR)*, Jun. 2019 (**Oral presentation**)
25. Seungryong Kim, Stephen Lin, Sangryul Jeon, **Dongbo Min**, and Kwanghoon Sohn  
Recurrent Transformer Networks for Semantic Correspondence  
*Neural Information Processing Systems (NeurIPS)*, Dec. 2018 (**Spotlight**, < 4.0% acceptance ratio)
26. Sangryul Jeon, Seungryong Kim, **Dongbo Min**, and Kwanghoon Sohn  
PARN: Pyramidal Affine Regression Networks for Dense Semantic Correspondence Estimation  
*European Conference on Computer Vision (ECCV)*, Sep. 2018
27. Seungryong Kim, **Dongbo Min**, Stephen Lin, and Kwanghoon Sohn  
DCTM: Discrete-Continuous Transform Matching for Semantic Flow  
*IEEE Int. Conf. on Computer Vision (ICCV)*, Oct. 2017  
(**Oral presentation**, < 3.0% acceptance ratio)
28. Hyungjoo Jung, Youngjung Kim, **Dongbo Min**, Changjae Oh, and Kwanghoon Sohn  
Depth Prediction from a Single Image with Conditional Adversarial Networks  
*IEEE Int. Conf. on Image Processing (ICIP)*, Sep. 2017
29. Sunok Kim, **Dongbo Min**, Bumsub Ham, Seungryong Kim, and Kwanghoon Sohn  
Deep Stereo Confidence Prediction for Depth Estimation  
*IEEE Int. Conf. on Image Processing (ICIP)*, Sep. 2017
30. Youngjung Kim<sup>†</sup>, Hyungjoo Jung<sup>†</sup>, **Dongbo Min**, and Kwanghoon Sohn  
Deeply Aggregated Alternating Minimization for Image Restoration  
*IEEE Int. Conf. on Computer Vision and Pattern Recognition (CVPR)*, Jul. 2017  
(**Spotlight presentation**, < 8.0% acceptance ratio, <sup>†</sup>: contributed equally to this work.)
31. Seungryong Kim, **Dongbo Min**, Bumsub Ham, Sangryul Jeon, Stephen Lin, and Kwanghoon Sohn  
FCSS: Fully Convolutional Self-Similarity for Dense Semantic Correspondence  
*IEEE Int. Conf. on Computer Vision and Pattern Recognition (CVPR)*, Jul. 2017
32. Yu Li, **Dongbo Min**, and Minh N. Do, and Jiangbo Lu  
Fast Guided Global Interpolation for Depth and Motion  
*European Conference on Computer Vision (ECCV)*, Oct. 2016  
(**Spotlight presentation**, < 8.0% acceptance ratio)

33. Seungryong Kim, **Dongbo Min**, Stephen Lin, and Kwanghoon Sohn  
Deep Self-Correlation Descriptor for Dense Cross-Modal Correspondence  
*European Conference on Computer Vision (ECCV)*, Oct. 2016
34. Seungryong Kim, **Dongbo Min**, and Kwanghoon Sohn  
ANCC FLOW: Adaptive Normalized Cross-Correlation with Evolving Guidance Aggregation for Dense Correspondence Estimation  
*IEEE Int. Conf. on Image Processing (ICIP)*, Sep. 2016
35. Yu Li, **Dongbo Min**<sup>\*</sup>, Michael S. Brown, Minh N. Do, and Jiangbo Lu  
SPM-BP: Sped-up PatchMatch Belief Propagation for Continuous MRFs  
*IEEE Int. Conf. on Computer Vision (ICCV)*, Dec. 2015  
(**Oral presentation**, < 4.0% **acceptance ratio**)
36. Seungryong Kim, **Dongbo Min**, Bumsub Ham, Seungchul Ryu, Minh N. Do, and Kwanghoon Sohn  
DASC: Dense Adaptive Self-Correlation Descriptor for Multi-modal and Multi-spectral Correspondence  
*IEEE Int. Conf. on Computer Vision and Pattern Recognition (CVPR)*, Jun. 2015
37. Sunghwan Choi, **Dongbo Min**, and Kwanghoon Sohn  
Randomized Texture Flow Estimation Using Visual Similarity  
*IEEE Int. Conf. on Image Processing (ICIP)*, Jul. 2014
38. Kang Zhang, Yuqiang Fang, **Dongbo Min**, Lifeng Sun, Shiqiang Yang, Shuicheng Yan, and Qi Tian  
Cross-Scale Cost Aggregation for Stereo Matching  
*IEEE Int. Conf. on Computer Vision and Pattern Recognition (CVPR)*, Jun. 2014
39. Wei Yong Eng, **Dongbo Min**, Viet-Anh Nguyen, Jiangbo Lu, and Minh N. Do  
Gaze Correction For 3D Tele-Immersive Communication System  
*IEEE IVMSWP Workshop: 3D Image/Video Technologies and Applications (IVMSWP)*, Jun. 2013
40. Jiangbo Lu, Hongsheng Yang, **Dongbo Min**, and Minh N. Do  
PatchMatch Filter: Efficient Edge-Aware Filtering Meets Randomized Search for Fast Correspondence Field Estimation  
*IEEE Int. Conf. on Computer Vision and Pattern Recognition (CVPR)*, Jun. 2013  
(**Oral presentation**, < 4.0% **acceptance ratio**)
41. Viet-Anh Nguyen, **Dongbo Min**, and Minh N. Do  
Efficient Edge-Preserving Interpolation and In-Loop Filters for Depth Map Compression  
*IEEE Int. Conf. on Image Processing (ICIP)*, Sep. 2012
42. Jiangbo Lu, Keyang Shi, **Dongbo Min**, Liang Lin, and Minh N. Do  
Cross-Based Local Multipoint Filtering  
*IEEE Int. Conf. on Computer Vision and Pattern Recognition (CVPR)*, Jun. 2012
43. **Dongbo Min**, Jiangbo Lu, Viet-Anh Nguyen, and Minh N. Do  
Weighted mode filtering and its applications to depth video enhancement and coding  
*IEEE Int. Conf. Acoustics, Speech, and Signal Processing (ICASSP)*, Mar. 2012 (Invited paper on special session)
44. Jinwook Choi, **Dongbo Min**, and Kwanghoon Sohn  
Stereo Depth Video Enhancement Based on Temporal and Inter-view Coherences  
*IEEE Int. Conf. on Consumer Electronics (ICCE)*, Jan. 2012
45. Stefan Winkler and **Dongbo Min**  
Stereoscopic Image Quality Compendium  
*Proc. Int. Conf. on Information and Communication Systems (ICICS)*, Dec. 2011
46. Kyle Rupnow, Yun Liang, Yinan Li, **Dongbo Min**, Minh N. Do, and Deming Chen  
High Level Synthesis of Stereo Matching: Productivity, Performance, and Software Constraints  
*Int. Conf. on Field Programmable Technology (FPT)*, Dec. 2011. (The best paper nomination)  
[FPT is one of top FPGA-related conferences.]
47. **Dongbo Min**, Jiangbo Lu, and Minh N. Do  
A Revisit to Cost Aggregation in Stereo Matching: How Far Can We Reduce Its Computational Redundancy?  
*IEEE Int. Conf. on Computer Vision (ICCV)*, Nov. 2011 (**Oral presentation**, < 4.0% **acceptance ratio**)
48. Bumsub Ham, **Dongbo Min**, and Kwanghoon Sohn  
Cost Aggregation with Anisotropic Diffusion in Feature Space for Hybrid Stereo Matching  
*IEEE Int. Conf. on Image Processing (ICIP)*, Sep. 2011

49. Jiangbo Lu, **Dongbo Min**, Raman S. Pahwa, and Minh N. Do  
A Revisit to MRF-based Depth Map Super-resolution and Enhancement  
*IEEE Int. Conf. Acoustics, Speech, and Signal Processing (ICASSP)*, May 2011 (Oral presentation)
50. Jinwook Choi, **Dongbo Min**, Donghyun Kim, and Kwanghoon Sohn  
3D JBU based depth video filtering for temporal fluctuation reduction  
*IEEE Int. Conf. on Image Processing (ICIP)*, Sep. 2010
51. **Dongbo Min**, Sehoon Yea, and Anthony Vetro  
Occlusion handling based on support and decision  
*IEEE Int. Conf. on Image Processing (ICIP)*, Sep. 2010 (Oral presentation)
52. **Dongbo Min**, Sehoon Yea, and Anthony Vetro  
Temporally consistent stereo matching using coherence function  
*IEEE 3DTV Conference*, Jun. 2010 (Oral presentation)
53. **Dongbo Min**, Sehoon Yea, Zafer Arican, and Anthony Vetro  
Disparity search range estimation: enforcing temporal consistency  
*IEEE Int. Conf. Acoustics, Speech, and Signal Processing (ICASSP)*, Mar. 2010
54. Jinwook Choi, **Dongbo Min**, Bumsub Ham, and Kwanghoon Sohn  
Spatial and temporal up-conversion technique for depth video  
*IEEE Int. Conf. on Image Processing (ICIP)*, Nov. 2009
55. Bumsub Ham, **Dongbo Min**, Jinwook Choi, and Kwanghoon Sohn  
Virtual view rendering using super-resolution with multiview images  
*IEEE Int. Conf. on Image Processing (ICIP)*, Nov. 2009 (Oral presentation)
56. Donghyun Kim, **Dongbo Min**, Juhyun Oh, S. Jeon, and Kwanghoon Sohn  
Depth map quality metric for three-dimensional video  
*Proc. SPIE Electronic Imaging*, Jan. 2009
57. **Dongbo Min**, Juhyun Oh, and Kwanghoon Sohn  
Asymmetric post-processing for stereo correspondence  
*IEEE Int. Conf. on Pattern Recognition (ICPR)*, Dec. 2008
58. **Dongbo Min**, Donghyun Kim, and Kwanghoon Sohn  
2D/3D freeview video generation for 3DTV system  
*IEEE Int. Conf. on Image Processing (ICIP)*, pp. 1760-1763, Oct. 2008 (Oral presentation)
59. **Dongbo Min**, Donghyun Kim, and Kwanghoon Sohn  
Virtual view rendering system for 3DTV  
*IEEE 3DTV Conference*, pp. 249-252, May 2008 (Oral presentation)
60. **Dongbo Min**, Donghyun Kim, S. Yun, and Kwanghoon Sohn  
Freeview rendering with trinocular camera  
*IEEE Int. Symposium on Circuits and Systems (ISCAS)*, pp. 3446-3449, May 2008
61. **Dongbo Min** and Kwanghoon Sohn  
Stereo matching with asymmetric occlusion handling in weighted least square framework  
*IEEE Int. Conf. Acoustics, Speech, and Signal Processing (ICASSP)*, pp. 1061-1064, Mar. 2008
62. SangUn Yun, **Dongbo Min**, and Kwanghoon Sohn  
3D scene reconstruction system with hand-held stereo cameras  
*IEEE 3DTV Conference*, May 2007
63. Donghyun Kim, **Dongbo Min**, and Kwanghoon Sohn  
Stereoscopic video generation method using motion analysis  
*IEEE 3DTV Conference*, May 2007
64. SangUn Yun, **Dongbo Min**, and Kwanghoon Sohn  
Fast dense stereo matching using adaptive window in hierarchical framework  
*Int. Symposium on Visual Computing (ISVC)*, LNCS, pp. 316-325, Nov. 2006
65. **Dongbo Min**, SangUn Yun, and Kwanghoon Sohn  
Segment-based stereo matching using energy-based regularization  
*Proc. IWMRCS*, LNCS, pp. 761-768, Sep. 2006

66. **Dongbo Min** and Kwanghoon Sohn  
Edge-preserving simultaneous joint motion-disparity estimation  
*IEEE Int. Conf. on Pattern Recognition (ICPR)*, pp. 252-271, Aug. 2006 (Oral presentation)
67. Hansung Kim, **Dongbo Min**, Shinwoo Choi, Donghyun Kim, and Kwanghoon Sohn  
Real-time shape recovery from silhouette and disparity  
*SIGGRAPH (sketch paper)*, Jul. 2005
68. Hansung Kim, **Dongbo Min**, and Kwanghoon Sohn  
Real-time stereo using foreground segmentation and hierarchical disparity estimation  
*Pacific-Rim Conference on Multimedia (PCM), LNCS*, pp. 384-395, Nov. 2005 (Oral presentation)

### International Conference (Submitted)

### International Journal

1. Soomin Kim, Hyesong Choi, Jihye Ahn, and **Dongbo Min**  
UniTT-Stereo: Unified Training of Transformer for Enhanced Stereo Matching  
*IEEE Access*, vol. 13, no. 11, pp. 204695-204707, Nov. 2025
2. Hyejin Park<sup>†</sup>, Keonhee Ahn<sup>†</sup>, Hyesong Choi, and **Dongbo Min**  
Global Structural Knowledge Distillation for Semantic Segmentation  
*IEEE Access*, vol. 13, no. 5, pp. 99826-99841, May 2025
3. Jihye Ahn, Hyesong Choi, Soomin Kim, and **Dongbo Min**  
MaDis-Stereo: Enhanced Stereo Matching via Distilled Masked Image Modeling  
*IEEE Access*, vol. 13, no. 1, pp. 8912-8923, Jan. 2025
4. Seongwon Jeong<sup>†</sup>, Jiyeon Kim<sup>†</sup>, Sungheui Kim, and **Dongbo Min**  
Revisiting Domain-Adaptive Semantic Segmentation via Knowledge Distillation  
*IEEE Trans. on Image Processing (TIP)*, vol. 33, no. 12, pp. 6761-6773, Nov. 2024
5. Xu Yin, Woobin Im, **Dongbo Min**, Yuchi Huo, Fei Pan, Sung-Eui Yoon  
Fine-grained Background Representation for Weakly Supervised Semantic Segmentation  
*IEEE Trans. on Circuits and Systems for Video Technology (TCSVT)*, vol. 34, no. 11, pp. 11739-11750, Nov. 2024
6. Wonil Song, Sangryul Jeon, Hyesong Choi, Kwanghoon Sohn, and **Dongbo Min**  
Learning disentangled skills for hierarchical reinforcement learning through trajectory autoencoder with weak labels  
*Expert Systems With Applications (ESWA)*, vol. 230, no. 11, pp. 1-13, Nov. 2023
7. Xu Yin, **Dongbo Min**, Yuchi Huo, and Sung-Eui Yoon  
Contour-Aware Equipotential Learning for Semantic Segmentation  
*IEEE Trans. on Multimedia (TMM)*, vol. 25, pp. 6146-6156, Sep. 2023
8. Sunok Kim, Seungryong Kim, **Dongbo Min**, Pascal Frossard and Kwanghoon Sohn  
Stereo Confidence Estimation via Locally Adaptive Fusion and Knowledge Distillation  
*IEEE Trans. on Pattern Analysis and Machine Intelligence (TPAMI)*, vol. 45, no. 5, pp. 6372-6385, May 2023
9. Hunsang Lee, Hyesong Choi, Kwanghoon Sohn, **Dongbo Min**  
Cross-Scale KNN Image Transformer for Image Restoration  
*IEEE Access*, vol. 11, pp. 13013-13027, Feb. 2023
10. Sangryul Jeon, Seungryong Kim, **Dongbo Min**, and Kwanghoon Sohn  
Pyramidal Semantic Correspondence Networks  
*IEEE Trans. on Pattern Analysis and Machine Intelligence (TPAMI)*, vol. 44, no. 12, pp. 9102-9118, Dec. 2022
11. Matteo Poggi, Seungryong Kim, Fabio Tosi, Sunok Kim, Filippo Aleotti, **Dongbo Min**, Kwanghoon Sohn, and Stefano Mattoccia  
On the confidence of stereo matching in a deep-learning era: a quantitative evaluation  
*IEEE Trans. on Pattern Analysis and Machine Intelligence (TPAMI)*, vol. 44, no. 9, pp. 5293-5313, Sep. 2022
12. Sunok Kim, **Dongbo Min**, Seungryong Kim, and Kwanghoon Sohn  
Adversarial Confidence Estimation Networks for Robust Stereo Matching  
*IEEE Trans. on Intelligent Transportation Systems (TITS)* vol. 22, no. 11, pp. 6875-6889, Nov 2021

13. Jintae Kim, Sera Park, **Dongbo Min**, and Wankyu Kim  
Comprehensive Survey of Recent Drug Discovery Using Deep Learning  
*International Journal of Molecular Sciences*, vol. 22 no. 18, pp. 1-36, Sep. 2021
14. Jaehoon Cho, **Dongbo Min**, Youngjung Kim, and Kwanghoon Sohn  
Deep monocular depth estimation leveraging a large-scale outdoor stereo dataset  
*Expert Systems with Applications (ESWA)*, vol. 178, no. 9, pp. 1-15, Sep. 2021
15. Seungryong Kim, **Dongbo Min**, Stephen Lin, and Kwanghoon Sohn  
Dense Cross-Modal Correspondence Estimation with the Deep Self-Correlation Descriptor  
*IEEE Trans. on Pattern Analysis and Machine Intelligence (TPAMI)*, vol. 43, no. 7, pp. 2345-2359, July 2021
16. Hyungjoo Jung, Youngjung Kim, **Dongbo Min**, Hyunsung Jang, Namkoo Ha, and Kwanghoon Sohn  
Learning Deeply Aggregated Alternating Minimization for General Inverse Problems  
*IEEE Trans. on Image Processing (TIP)*, vol. 29, pp. 8012-8027, July 2020
17. Jaehoon Cho, Seungryong Kim, **Dongbo Min**, and Kwanghoon Sohn  
Single Image Deraining Using Time-lapse Data  
*IEEE Trans. on Image Processing (TIP)*, vol. 29, pp. 7274-7289, June 2020
18. Hunsang Lee, Kwanghoon Sohn, and **Dongbo Min**  
Unsupervised Low-light Image Enhancement Using Bright Channel Prior  
*IEEE Signal Processing Letters (SPL)*, vol. 27, pp. 251-255, Jan. 2020
19. Seungryong Kim, **Dongbo Min**, Stephen Lin, and Kwanghoon Sohn  
Discrete-Continuous Transformation Matching for Dense Semantic Correspondence  
*IEEE Trans. on Pattern Analysis and Machine Intelligence (TPAMI)* vol. 42, no. 1, pp. 59-73, Jan. 2020
20. Seungryong Kim, **Dongbo Min**, Bumsub Ham, Stephen Lin, and Kwanghoon Sohn  
FCSS: Fully Convolutional Self-Similarity for Dense Semantic Correspondence  
*IEEE Trans. on Pattern Analysis and Machine Intelligence (TPAMI)* vol. 41, no. 3, pp. 581-595, Mar. 2019
21. Sunok Kim, **Dongbo Min**, Seungryong Kim, and Kwanghoon Sohn  
Unified Confidence Estimation Networks for Robust Stereo Matching  
*IEEE Trans. on Image Processing (TIP)*, vol. 28, no. 3, pp. 1299-1313, Mar. 2019
22. Youngjung Kim, Hyungjoo Jung, **Dongbo Min**, and Kwanghoon Sohn  
Deep Monocular Depth Estimation via Integration of Global and Local Predictions  
*IEEE Trans. on Image Processing (TIP)*, vol. 27, no. 8, pp. 4131-4144, Aug. 2018
23. Jaeyoon Kim, Suhyuk Um, **Dongbo Min**  
Fast 2-D Complex Gabor Filter with Kernel Decomposition  
*IEEE Trans. on Image Processing (TIP)*, vol. 27, no. 4, pp. 1713-1722, Apr. 2018
24. Sunok Kim, **Dongbo Min**, Seungryong Kim, and Kwanghoon Sohn  
Feature Augmentation for Learning Confidence Measure in Stereo Matching  
*IEEE Trans. on Image Processing (TIP)*, vol. 26, no. 12, pp. 6019-6033, Dec. 2017
25. Jiangbo Lu, Yu Li, Hongsheng Yang, **Dongbo Min**<sup>\*</sup>, Wei Yong Eng, and Minh N. Do  
PatchMatch Filter: Edge-Aware Filtering Meets Randomized Search for Visual Correspondence  
*IEEE Trans. on Pattern Analysis and Machine Intelligence (TPAMI)*, vol. 39, no. 9, pp. 1866-1879, Sep. 2017
26. Seungryong Kim, **Dongbo Min**, Bumsub Ham, Minh N. Do, and Kwanghoon Sohn  
DASC: Robust Dense Descriptor for Multi-modal and Multi-spectral Correspondence Estimation  
*IEEE Trans. on Pattern Analysis and Machine Intelligence (TPAMI)*, vol. 39, no. 9, pp. 1712-1729, Sep. 2017
27. Youngjung Kim, **Dongbo Min**, Bumsub Ham, and Kwanghoon Sohn  
Fast Domain Decomposition for Global Image Smoothing  
*IEEE Trans. on Image Processing (TIP)*, vol. 26, no. 8, pp. 4079-4091, Aug. 2017
28. Kang Zhang, Yuqiang Fang, **Dongbo Min**, Lifeng Sun, Shiqiang Yang, and Shuicheng Yan  
Cross-Scale Cost Aggregation for Stereo Matching  
*IEEE Trans. on Circuits and Systems for Video Technology (TCSVT)*, vol. 27, no. 5, pp. 965-976, May 2017
29. Jongin Son, Minsung Kang, **Dongbo Min**, and Kwanghoon Sohn  
EMCCD Color Correction Based on Spectral Sensitivity Analysis  
*Multimedia Tools and Applications*, vol. 75, no. 13, pp. 7589-7604, Jul. 2016

30. Sunghwan Choi, **Dongbo Min**, Bumsub Ham, Yongjung Kim, Changjae Oh, and Kwanghoon Sohn  
Depth Analogy: Data-driven Approach for Single Image Depth Estimation using Gradient Samples  
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42. **Dongbo Min**, Jiangbo Lu, and Minh N. Do  
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Real-Time Disparity Estimation Using Foreground Segmentation for Stereo Sequences  
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### International Journal (Submitted)

### International Conference Tutorial

1. Jiangbo Lu, **Dongbo Min**, and Minh N. Do  
Discontinuities-Preserving Image and Motion Coherence: Computational Models and Applications  
**Half-day tutorial** in *IEEE Int. Conf. Acoustics, Speech and Signal Processing* (ICASSP), Mar. 2016  
Web: <https://sites.google.com/site/icassp16imc/>
2. **Dongbo Min**, Wen-Yan Lin, Jiangbo Lu, and Minh N. Do  
Visual Correspondences: Taxonomy, Modern Approaches and Ubiquitous Applications  
**Half-day tutorial** in *IEEE Int. Conf. Multimedia and Expo* (ICME), Jun. 2015  
Web: <https://sites.google.com/site/icme15tutorial/>
3. Jiangbo Lu, **Dongbo Min**, and Minh N. Do  
Image Filtering 2.0: Efficient Edge-Aware Filtering Techniques and Their Applications  
**Half-day Tutorial** in *IEEE Int. Conf. on Image Processing* (ICIP), Sep. 2013  
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### PROJECT EXPERIENCES

#### Current Projects (@Ewha)

**Research on SPV(Security/Privacy/Visual) Firewall for Connected Autonomous Vehicle 06/2023–02/2026**

- Basic Research Laboratory (BRL), National Research Foundation (NRF) of Korea
- Researcher, EWU, Korea (1,375M KRW)

## **Bio-imaging Quality Assessment**

04/2023–12/2026

- Bio-imaging Quality Center of Excellence, National Research Foundation (NRF) of Korea
- Researcher, EWU, Korea (90M KRW/year)

## **Self-Evolving Hardware Intelligence**

07/2021–12/2025

- AI Innovation Hub of Institute for Information & Communications Technology Promotion (IITP), Korea
- Principal Investigator (PI) at EWU, EWU, Korea (774M KRW: 2024 Budget of EWU)
- EWU is a member of AI Innovation Hub consisting of 12 universities.

## **Generative AI models for the advancement of robot cleaner image-based on device AI technology** 10/2024–10/2025

- Industry Project, LG Electronics
- Principal Investigator (PI), EWU, Korea (70M KRW)

## **Past Projects (@Ewha, CNU, ADSC, and MERL)**

### **Multi-task Learning Model for Complementary Scene Understanding based on Depth Estimation and Object Detection/Segmentation**

03/2021–02/2024

- Mid-Career Researcher Program, National Research Foundation (NRF) of Korea
- Principal Investigator (PI), EWU, Korea (600M KRW)

### **AiA (AI in Action): Autonomous Action Planning AI Lab**

06/2021–02/2024

- Basic Research Laboratory (BRL), National Research Foundation (NRF) of Korea
- Principal Investigator (PI), EWU, Korea (1,375M KRW)

### **A Study on Self-supervised Learning for Driving Error and Obstructed Zone Prediction in Robot Cleaner** 04/2023–04/2024

- Industry Project, LG Electronics
- Principal Investigator (PI), EWU, Korea (70M KRW)

### **Research on upgrading AI-based automatic water detection technology for efficient vehicle development** 04/2021–09/2022

- Industry Project, Hyundai NGV
- Principal Investigator (PI), EWU, Korea (102M KRW)

### **A study on AI-inspired super-resolution techniques using single or heterogeneous sensors** 10/2018–12/2021

- ‘Complex Cognitive Technology Development Project’ of NRF Korea
- Principal Investigator (PI), EWU, Korea (295M KRW)

### **To create AI systems that act appropriately and effectively in novel situations that occur in open worlds** 04/2020–12/2021

- Next-Generation AI Program of Institute for Information & Communications Technology Promotion (IITP), Korea
- Co-Principal Investigator (Co-PI), EWU, Korea (300M KRW)

### **Complementary Deep Learning for Pixel-level Correspondence/Segmentation and Image-level Retrieval** 03/2018–02/2021

- ‘Young Researcher Program’ of NRF Korea
- Principal Investigator (PI), EWU, Korea (100M KRW/year + 100M KRW for equipment purchase)

### **Highly Efficient and Advanced Visual Correspondence Algorithms for Big Visual Data** 11/2015–10/2018

- ‘Individual Basic Science and Engineering Research Program’ of NRF Korea
- Principal Investigator (PI), CNU, Korea (51M KRW/year)
- Feature descriptor, discrete labeling algorithm, graph matching

### **High Quality 2D-to-Multiview Contents Generation from Large-scale RGB+D Database** 07/2015–08/2017

- ‘Digital Content R&D Project’ of Institute for Information & Communications Technology Promotion (IITP), Korea
- Co-Principal Investigator (Co-PI), CNU, Korea (80M KRW/year, Total amount of funding: 400M KRW/year)

- Constructing 2M RGB+D database, single image depth estimation, and interactive depth editing

### **Real-time Monitoring of Points of Impact**

10/2015–02/2016

- Funded by Institute for Information & Communications Technology Promotion (IITP), Korea
- Principal Investigator (PI), CNU, Korea (40M KRW)

### **Optimization for Visual Correspondence**

06/2015–05/2016

- Starting-up funding from CNU, Korea
- Principal Investigator (PI), CNU, Korea (20M KRW)
- Local labeling algorithm

### **Visual Modeling and Analytics of Dynamic Environments for the Mass**

04/2014–02/2015

- Internal funding from ADSC, Singapore: joint research project with UIUC
- Global labeling optimization, visual correspondence, and reliable sparse interpolation (presented at **ICME 2015** and **ICASSP 2016 tutorials**)

### **Remote Reality for Immersive Communications and Games**

07/2010–03/2014

- Internal funding from ADSC, Singapore: joint research project with UIUC
- Edge-preserving filters and discrete labeling optimization (presented at **ICIP 2013 tutorial**)
- Video based rendering and depth enhancement and coding
- Tele-conferencing system with depth sensor and real-time vision algorithms with GPUs

### **3D Display Processing Techniques**

06/2009–06/2010

- Funded by Mitsubishi Electric Research Laboratories (MERL), US
- Depth estimation for 3DTV and video processing with temporal coherence

## **PROFESSIONAL ACTIVITIES**

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- **Senior Member of IEEE** (2016 – Present)

## **REFERENCES**

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Available upon request