DONGBO MIN

Associate Professor, Dept. of Computer Science and Engineering, Ewha Womans University, Seoul, Korea
E-mail: dbmin@ewha.ac.kr, dbmin99@gmail.com, Web: http://cvl.ewha.ac.kr, Office: +82-2-3277-6892

Last Update: Feb. 2, 2026

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)[1] 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)[2] 02/2023 – 01/2024

[1] The national research institute co-founded by Univ. of Illinois at Urbana-Champaign (UIUC) and A*STAR (Singapore Government Agency)
[2] 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

– For more information on the latest publications, see dblp or Google Scholar.
– †: equal contribution

International Conference

1. Minhee Cho†, Hayeon Jo†, and **Dongbo Min**
CRASH: Context-aware Recognition of Agents for Simulation of High-risk Driving
IEEE Int. Conf. on Robotics and Automation (ICRA), June 2026

2. Minhee Cho†, Sumin Park†, 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

3. 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

4. Soyul Lee†, Seungmin Baek†, **Dongbo Min**
Difficulty-Aware Label-Guided Denoising for Monocular 3D Object Detection
AAAI Conference on Artificial Intelligence (AAAI), Jan. 2026

5. Jueun Ko†, Hyewon Park†, Hyesong Choi, and **Dongbo Min**
RobIA: Robust Instance-aware Continual Test-time Adaptation for Deep Stereo
Neural Information Processing Systems (NeurIPS), Dec. 2025

6. 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

7. Seungmin Baek†, Soyul Lee†, 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

8. 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

9. Wonil Song, Kwanghoon Sohn, and **Dongbo Min**
Improving Self-supervised Vision Transformers for Visual Control
IEEE Int. Conf. on Image Processing (ICIP), Oct. 2024.

10. Hyejin Park and **Dongbo Min**
Dynamic Guidance Adversarial Distillation with Enhanced Teacher Knowledge
European Conf. on Computer Vision (ECCV), Sep. 2024

11. 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

12. 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

13. 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

14. 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.

15. 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.

16. 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.

17. Sunkyung Kim, Hyesong Choi, and **Dongbo Min**
Sequential Cross Attention based Multi-Task Learning
IEEE Int. Conf. on Image Processing (ICIP), Oct. 2022.

18. 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.

19. 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.

20. Hyesong Choi†, Hunsang Lee†, 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.

21. 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.

22. Sangryul Jeon, **Dongbo Min**, Seungryong Kim, Jihwan Choe, and Kwanghoon Sohn
Guided Semantic Flow
European Conference on Computer Vision (ECCV), Aug. 2020.

23. 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.

24. 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

25. 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**)

26. Seungryung 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**)

27. 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

28. 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**)

29. 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

30. 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

31. Youngjung Kim†, Hyungjoo Jung†, **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**, †: contributed equally to this work.)

32. 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

33. 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**)

34. 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

35. 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

36. Yu Li, **Dongbo Min***, 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**)

37. 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

38. Sunghwan Choi, **Dongbo Min**, and Kwanghoon Sohn
Randomized Texture Flow Estimation Using Visual Similarity
IEEE Int. Conf. on Image Processing (ICIP), Jul. 2014

39. 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

40. Wei Yong Eng, **Dongbo Min**, Viet-Anh Nguyen, Jiangbo Lu, and Minh N. Do
Gaze Correction For 3D Tele-Immersive Communication System
IEEE IVMSP Workshop: 3D Image/Video Technologies and Applications (IVMSP), Jun. 2013

41. 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**)

42. 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

43. 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

44. **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)

45. 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

46. Stefan Winkler and **Dongbo Min**
Stereoscopic Image Quality Compendium
Proc. Int. Conf. on Information and Communication Systems (ICICS), Dec. 2011

47. 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.`]

48. **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**)

49. 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

50. 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)

51. 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

52. **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)

53. **Dongbo Min**, Sehoon Yea, and Anthony Vetro
Temporally consistent stereo matching using coherence function
IEEE 3DTV Conference, Jun. 2010 (Oral presentation)

54. **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

55. 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

56. 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)

57. 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

58. **Dongbo Min**, Juhyun Oh, and Kwanghoon Sohn
Asymmetric post-processing for stereo correspondence
IEEE Int. Conf. on Pattern Recognition (ICPR), Dec. 2008

59. **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)

60. **Dongbo Min**, Donghyun Kim, and Kwanghoon Sohn
Virtual view rendering system for 3DTV
IEEE 3DTV Conference, pp. 249-252, May 2008 (Oral presentation)

61. **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

62. **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

63. SangUn Yun, **Dongbo Min**, and Kwanghoon Sohn
3D scene reconstruction system with hand-held stereo cameras
IEEE 3DTV Conference, May 2007

64. Donghyun Kim, **Dongbo Min**, and Kwanghoon Sohn
Stereoscopic video generation method using motion analysis
IEEE 3DTV Conference, May 2007

65. 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

66. **Dongbo Min**, SangUn Yun, and Kwanghoon Sohn
Segment-based stereo matching using energy-based regularization
Proc. IWMRCS, LNCS, pp. 761-768, Sep. 2006

67. **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)

68. Hansung Kim, **Dongbo Min**, Shinwoo Choi, Donghyun Kim, and Kwanghoon Sohn
Real-time shape recovery from silhouette and disparity
SIGGRAPH (sketch paper), Jul. 2005

69. 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†, Keonhee Ahn†, 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†, Jiyeong Kim†, 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***, 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
IEEE Trans. on Image Processing (TIP), vol. 24, no. 12, pp. 5953-5966, Dec. 2015

31. Sunghwan Choi, **Dongbo Min**, Bumsub Ham, and Kwanghoon Sohn
Unsupervised Texture Flow Estimation Using Appearance-space Clustering and Correspondence
IEEE Trans. on Image Processing (TIP), vol. 24, no. 11, pp. 3652-3665, Nov. 2015

32. Bumsub Ham, **Dongbo Min**, and Kwanghoon Sohn
Depth Super-Resolution by Transduction
IEEE Trans. on Image Processing (TIP), vol. 24, no. 5, pp. 1524-1535, May 2015

33. **Dongbo Min**, Sunghwan Choi, Jiangbo Lu, Bumsub Ham, Kwanghoon Sohn, and Minh N. Do
Fast Global Image Smoothing Based on Weighted Least Squares
IEEE Trans. on Image Processing (TIP), vol. 23, no. 12, pp. 5638-5653, Dec. 2014
◇ This work was included in the **official release of OpenCV 3.1** as of Dec. 2015.

34. Jinwook Choi, **Dongbo Min**, and Kwanghoon Sohn
Reliability-based Multiview Depth Enhancement Considering Inter-view Coherence
IEEE Trans. on Circuits and Systems for Video Technology (TCSVT), vol. 24, no. 4, pp. 603-616, Apr. 2014

35. Bumsub Ham, **Dongbo Min**, Changjae Oh, Minh N. Do, and Kwanghoon Sohn
Probability-Based Rendering for View Synthesis
IEEE Trans. on Image Processing (TIP), vol. 23, no. 2, pp. 870-884, Feb. 2014

36. Stefan Winkler and **Dongbo Min**
Stereo/Multiview Picture Quality: Overview and Recent Advances
Signal Proc.: Image Comm. (SPIC), vol. 28, no. 10, pp. 1358-1373, Nov. 2013

37. **Dongbo Min**, Jiangbo Lu, and Minh N. Do
Joint Histogram Based Cost Aggregation for Stereo Matching
IEEE Trans. on Pattern Analysis and Machine Intelligence (TPAMI), vol. 35, no. 10, pp. 2539-2545, Oct. 2013

38. Bumsub Ham†, **Dongbo Min**†, and Kwanghoon Sohn
A Generalized Random Walk with Restart and Its Application in Depth Up-sampling and Interactive Segmentation
IEEE Trans. on Image Processing (TIP), vol. 22, no. 7, pp. 2574-2588, Jul. 2013

39. Bumsub Ham, **Dongbo Min**, and Kwanghoon Sohn
Revisiting the Relationship Between Adaptive Smoothing and Anisotropic Diffusion with Modified Filters
IEEE Trans. on Image Processing (TIP), vol. 22, no. 3, pp. 1096-1107, Mar. 2013

40. Viet-Anh Nguyen, **Dongbo Min**, and Minh N. Do
Efficient Techniques for Depth Video Compression Using Weighted Mode Filtering
IEEE Trans. on Circuits and Systems for Video Technology (TCSVT), vol. 23, no. 2, pp. 189-202, Feb. 2013

41. Bumsub Ham, **Dongbo Min**, and Kwanghoon Sohn
Robust Scale Space Filter with Second Order Partial Differential Equations
IEEE Trans. on Image Processing (TIP), vol. 21, no. 9, pp. 3937-3951, Sep. 2012

42. **Dongbo Min**, Jiangbo Lu, and Minh N. Do
Depth Video Enhancement Based on Weighted Mode Filtering
IEEE Trans. on Image Processing (TIP), vol. 21, no. 3, pp. 1176-1190, Mar. 2012

43. Jinwook Choi, **Dongbo Min**, and Kwanghoon Sohn
2D-Plus-Depth Based Resolution and Frame-rate Up-conversion Technique for Depth Video
IEEE Trans. on Consumer Electronics, vol. 56, no. 4, pp. 2489-2497, Nov. 2010

44. **Dongbo Min** and Kwanghoon Sohn
An Asymmetric Post-Processing for Correspondence Problem
Signal Processing: Image Communication (SPIC), vol. 25, no. 2, pp. 130-142, Feb. 2010

45. **Dongbo Min**, Donghyun Kim, SangUn Yun, and Kwanghoon Sohn
2D/3D Freeview Video Generation for 3DTV System
Signal Processing: Image Communication (SPIC), vol. 24, no. 1-2, pp. 31-48, Jan. 2009
(Invited paper, special issue on 3DTV)

46. **Dongbo Min** and Kwanghoon Sohn
Cost Aggregation and Occlusion Handling With WLS in Stereo Matching
IEEE Trans. on Image Processing (TIP), vol. 17, no. 8, pp. 1431-1442, Aug. 2008

47. Donghyun Kim, **Dongbo Min**, and Kwanghoon Sohn
A Stereoscopic Video Generation Method Using Stereoscopic Display Characterization and Motion Analysis
IEEE Trans. on Broadcasting (TB), vol. 54, no. 2, pp 188-197, Jun. 2008

48. Hansung Kim, Donghyun Kim, **Dongbo Min**, and Kwanghoon Sohn
A 3D Modeling and Free-View Generation System Using Environmental Stereo Cameras
Int. Journal of Imaging Systems and Technology (IJIST), vol. 17, no. 6, pp. 367-378, Apr. 2008

49. **Dongbo Min**, Hansung Kim, and Kwanghoon Sohn
Edge-Preserving Joint Motion Disparity Estimation in Stereo Image Sequences
Signal Processing: Image Communication (SPIC), vol. 21, no. 3, pp. 252-271, Mar. 2006

50. Hansung Kim, **Dongbo Min**, Shinwoo Choi, and Kwanghoon Sohn
Real-Time Disparity Estimation Using Foreground Segmentation for Stereo Sequences
Optical Engineering, vol. 45, no. 3, pp. 037402 1-10, Mar. 2006

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
Web: *https://sites.google.com/site/filteringtutorial/*

PATENTS

1. **Dongbo Min** et. al., "Method for Handling Pixel Occlusions in Stereo Images Using Iterative Support and Decision Processes," US patent no.: US8315426 B2, Nov 20, 2012.

2. **Dongbo Min** et. al., "Determining Disparity Search Range in Stereo Videos," US patent no.: US8290248 B2, Oct 16, 2012.

3. **Dongbo Min** et. al., "Method of 2D/3D virtual view synthesis for freeview video generation," Korea patent no.: 10-0924716, Oct. 27, 2009

4. **Dongbo Min** et. al., "Method of calculating cost function and handling occluded region in disparity estimation," Korea patent no.: 10-0930286, Nov. 30, 2009.

5. **Dongbo Min** et. al., "Method and apparatus of image rectification in arbitrary view synthesis," Korea patent no.: 10-0897542, May 07, 2009.

6. **Dongbo Min** et. al., "Method and apparatus of 3D image reconstruction," Korea patent no.: 10-0890224, Mar. 17, 2009.

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

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

REFERENCES

Available upon request