Curriculum Vitae

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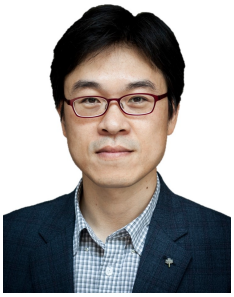

Education

- Ph.D. in Electrical Engineering, KAIST, Korea — Feb. 2006
- M.S. in Electrical Engineering, KAIST, Korea — Feb. 2000
- B.S. in Electrical Engineering, KAIST, Korea — Feb. 1998

Work Experiences

- Professor — Mar. 2024 – present

- Associate Professor — Feb. 2018 – Feb. 2024

Department of Mechanical Engineering, KAIST, Korea,
and also affiliated with
- KAIST Robotics Program (head from Feb. 2023 to Jul. 2023)
- Kim Jaechul Graduate School of AI, KAIST
- Cho Chun Shik Graduate School of Mobility, KAIST
- KAIST Institute for Robotics, KAIST
- Division of Future Vehicle, KAIST
- Center for SC-Strategic Studies, KAIST

- Associate Professor — Sep. 2014 – Feb. 2018

School of Electrical Engineering and Computer Science, GIST, Korea,

- Assistant Professor — Aug. 2008 – Aug. 2014

School of Electrical Engineering and Computer Science, GIST, Korea,

- Visiting Scholoar — Aug. 2023 – present

Samsung Research America

- External Advisory Committee — Mar. 2022 – present

Samsung Electronics

- Technical Adviser — Feb. 2022 – Aug. 2022

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- Technical Adviser — Feb. 2021 – Aug. 2021

Avikus

- Technical Adviser — April 2017 – Dec. 2017

Samsung Electronics (Visual Display Division)

- Steering Committee Member — Mar. 2017 – Dec. 2018

National Strategic Projects on VR/AR

- Technical Adviser — Mar. 2017 – Aug. 2017

NAVERLabs (Mobility Team)

- Steering Committee Member Dec. 2015 – Feb. 2018

Korea Culture Technology Institute

- Visiting Scholar Sept. 2013 – Aug. 2014

Korea Institute of Science and Technology (KIST)

- Post-doctoral Fellow Aug. 2006 – Aug. 2008

Perception Team, INRIA Rhône-Alpes, France,

- Post-doctoral Researcher March 2006 – May 2006

Robotics and Computer Vision Lab., KAIST, Korea

Research Interests

- Computer vision, machine learning, pattern recognition
  - · Event camera- and 360° camera-based vision
  - · Vision-based ADAS for autonomous driving
  - · 3D reconstruction from images (two-/multi-view stereo, structure-from-motion, SLAM)
  - · Multi-target detection and tracking
  - · Visual odometry, optical flow estimation
  - · 3D object detection and recognition
  - · Multi-sensor fusion

Academic Activities

International

- Associate Editor of IEEE Transactions on Pattern Analysis and Machine Intelligence (IEEE TPAMI) (since April 2023)
- Associate Editor of Computer Vision and Image Understanding (CVIU) (since March 2023)
- Area Chair of ICCV 2023, CVPR 2022, WACV 2022, ICCV 2021, CVPR 2020, ICCV 2019, ACM MULTIMEDIA 2019, $\cdots$
- Program Co-chair of ICCV Workshop and Challenge on Comprehensive Video Understanding in the Wild (CoView 2019)
- General Co-chair of International Symposium on Future Mobility (ISFM) 2019
- Organizing Committee of International Conference on Computer Vision (ICCV) 2019
- Editor of the International Journal of Automotive Technology (IJAT) (since 2017)

Domestic

- Board member of Korean Computer Vision Society (KCVS) (since 2016)
- Steering Committee Member of National Strategic Projects on VR/AR (2017 – 2018)
- Board member of The Korea Robotics Society (2016)
- Secretary of GIST Faculty Assembly (for two years from 2016 to 2017)
- Program Committee of KCCV (since 2014)
- Board member of AI Society in The Korean Institute of Information Scientists and Engineers (2013 – 2017)
- Editor of the The Journal of Korea Robotics Society (2011 – 2014)
- Program Committee of Workshop on Image Processing and Image Understanding (2010 – 2018)
- Editor of the The Journal of Korea Information Processing Society (2009 – 2014)

List of 5 Representative Papers

5. Lin Wang, Tae-Kyun Kim, and **Kuk-Jin Yoon**, "Joint Framework for Single Image Reconstruction and Super-Resolution With an Event Camera," IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI), 2022.

4. S. Mohammad Mostafavi I., Yeongwoo Nam, Jonghyun Choi, and **Kuk-Jin Yoon**, "E2SRI: Learning to Super-Resolve Intensity Images From Events," IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI), 2022.

3. Yeon Kun Lee, Jaeseok Jeong*, Jong Seob Yun*, Won June Cho*, and **Kuk-Jin Yoon** (*: equal contribution), "SpherePHD: Applying CNNs on 360° Images With Non-Euclidean Spherical PolyHeDron Representation," IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI), 2022.

2. Lin Wang and **Kuk-Jin Yoon**, "Knowledge Distillation and Student-TeacherLearning for Visual Intelligence: A Review and New Outlooks," IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI), 2021.

1. Min-Gyu Park and **Kuk-Jin Yoon**, "Learning and Selecting Confidence Measures for Robust Stereo Matching,", IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI), vol. 41, no. 6, pp. 1397-1411, 2019.

Publications (International) (underline: first or corresponding author)

SCI Journal

64. Seongyong Ahn, Inwook Shim, Jihong Min, **Kuk-Jin Yoon**, "EasyFuse: Easy-to-Learn Visible and Infrared Image Fusion Framework based on Unpaired Set," Pattern Recognition Letters, 2023.

63. Incheol Cho, Kichul Lee, Young Chul Sim, Jaeseok Jeong, Minkyu Cho, Heechan Jung, Mingu Kang, Yong-Hoon Cho, Seung Chul Ha, and **Kuk-Jin Yoon***, Inkyu Park* (*: co-corresponding), "Deep Learning-based Gas Identification by Time-variant Illumination of a Single Micro LED-embedded Gas Sensor," accepted to Light: Science & Applications, 2023. (IF: 20.257 (2021), rank: 3/101 (Optics))

62. Kichul Lee, Incheol Cho, Mingu Kang, Jaeseok Jeong, Minho Choi, Kie Young Woo, **Kuk-Jin Yoon***, Yong-Hoon Cho*, and Inkyu Park* (*: co-corresponding), "Ultra-Low-Power E-Nose System Based on Multi-Micro-LED-Integrated, Nanostructured Gas Sensors and Deep Learning," ACS Nano, 2023, vol. 17, no. 1, pp. 539–551 (IF: 18.027(2021), rank: 20/345)

61. Lin Wang and **Kuk-Jin Yoon**, "Deep Learning for HDR Imaging: State-of-the-Art and Future Trends," IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI), 2022. (IF: 24.324 (2021), rank: 2/276, 2/144)

60. Lin Wang, Tae-Kyun Kim, and **Kuk-Jin Yoon**, "Joint Framework for Single Image Reconstruction and Super-Resolution With an Event Camera," IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI), 2022. (IF: 24.324 (2021), rank: 2/276, 2/144)

59. Joon-Kyu Han, Mingu Kang, Jaeseok Jeong, Incheol Cho, Ji-Man Yu, **Kuk-Jin Yoon**, Inkyu Park*, Yang-Kyu Choi* (*: co-corresponding), "Artificial Olfactory Neuron for an In-Sensor Neuromorphic Nose," Advanced Science, vol. 9, no. 18, 2022. (IF: 17.521 (2021), rank: 21/345)

58. Mingu Kang, Incheol Cho, Jaeho Park, Jaeseok Jeong, Kichul Lee, Byeongju Lee, Dionisio Del Orbe Henriquez, **Kuk-Jin Yoon***, Inkyu Park* (*: co-corresponding), "High Accuracy Real-Time Multi-Gas Identification by a Batch-Uniform Gas Sensor Array and Deep Learning Algorithm," ACS Sensors, vol. 7, no. 2, pp. 430-440, 2022. (IF: 9.618 (2021), rank: 5/87)

57. Lin Wang and **Kuk-Jin Yoon**, "Semi-supervised Student-Teacher Learning for Single Image Super-Resolution," Pattern Recognition (PR), 2021. (IF: 7.740 (2020), rank: 20/273, 17/139)

56. S. Mohammad Mostafavi I., Yeongwoo Nam, Jonghyun Choi, and **Kuk-Jin Yoon**, "E2SRI: Learning to Super-Resolve Intensity Images From Events," IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI), 2022. (IF: 24.324 (2021), rank: 2/276, 2/144)

55. Kwonyoung Ryu, Kang-il Lee, Jegyeong Cho, and **Kuk-Jin Yoon**, 'Scanline Resolution-invariant Depth Completion using a Single Image and Sparse LiDAR Point Cloud," IEEE Robotics and Automation Letters (RA-L), 2021. (IF: 3.608 (2019), rank: 6/28) (presented at International Conference on Intelligent Robots and Systems (IROS) 2021)

54. Hoonhee Cho, Jaeseok Jeong, and **Kuk-Jin Yoon**, "EOMVS : Event-based Omnidirectional Multi-View Stereo," IEEE Robotics and Automation Letters (RA-L), 2021. (IF: 3.608 (2019), rank: 6/28) (presented at International Conference on Intelligent Robots and Systems (IROS) 2021)

53. Ji-il Park, Yeongseok Lee, Eungyo Suh, Hyunyong Jeon, **Kuk-Jin Yoon***, and Kyung-Soo Kim*, "Improvement of Optical Flow Estimation by Using the Hampel Filter for Low-End Embedded Systems," IEEE Robotics and Automation Letters (RA-L), 2021. (IF: 3.608 (2019), rank: 6/28) (presented at International Conference on Intelligent Robots and Systems (IROS) 2021)

52. Lin Wang and **Kuk-Jin Yoon**, "PSAT-GAN: Efficient Adversarial Attacks against Holistic Scene Understanding," IEEE Transactions on Image Processing (TIP), 2021. (IF: 9.340 (2019), rank: 11/266, 8/136)

51. Lin Wang and **Kuk-Jin Yoon**, "Knowledge Distillation and Student-TeacherLearning for Visual Intelligence: A Review and New Outlooks," IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI), 2021. (IF: 16.389 (2020), rank: 1/139, 2/273)

50. S. Mohammad Mostafavi I., Lin Wang, and **Kuk-Jin Yoon**, "Learning to Reconstruct HDR Images from Events, with Applications to Depth and Flow," International Journal of Computer Vision (IJCV), 2021. (IF: 5.698 (2019), rank: 17/136)

49. Taewoo Kim, Kyeongseob Song, Kwonyoung Ryu, and **Kuk-Jin Yoon**, "Loop-Net: Joint Unsupervised Disparity and Optical Flow Estimation of Stereo Videos with Spatiotemporal Loop Consistency," IEEE Robotics and Automation Letters (RA-L), 2020. (IF: 3.608 (2019), rank: 6/28) (presented at International Conference on Intelligent Robots and Systems (IROS) 2020.)

48. Yeon Kun Lee, Jaeseok Jeong*, Jong Seob Yun*, Won June Cho*, and **Kuk-Jin Yoon** (*: equal contribution), "SpherePHD: Applying CNNs on 360° Images with Non-Euclidean Spherical PolyHeDron Representation," IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI), 2020. (IF: 17.861 (2019), rank: 2/266, 1/136)

47. Lin Wang, Wonjune Cho, and **Kuk-Jin Yoon**, "Deceiving Image-to-Image Translation Networks for Autonomous Driving with Adversarial Perturbations," IEEE Robotics and Automation Letters (RA-L), 2020. (IF: 3.608 (2019), rank: 6/28) (presented at International Conference on Robotics and Automation(ICRA) 2020.)

46. Jeong-Kyun and **Kuk-Jin Yoon**, "Joint Estimation of Camera Orientation and Vanishing Points from Lines," International Journal of Computer Vision (IJCV), 2019. (IF: 6.071 (2018), rank: 13/133)

45. Yeong-Jun Cho and **Kuk-Jin Yoon**, "Distance-based Camera Network Topology Inference for Person Re-identification," Pattern Recognition Letters, 2019. (IF: 2,810 (2018), rank: 50/133)

44. Chang-Ryeol Lee and **Kuk-Jin Yoon**, "Confidence Analysis of Feature Points for Visual-Inertial Odometry of Urban Vehicles," IET Intelligent Transport Systems, 2019. (IF: 2.050 (2018), rank: 19/37)

43. Min-Gyu Park and **Kuk-Jin Yoon**, "As-Planar-As-Possible Depth Map Estimation," Computer Vision and Image Understanding (CVIU), 2019. (IF: 2.645 (2018), rank: 58/133)

42. Yeong-Jun Cho, Su-A Kim, Jae-Han Park, Kyuewang Lee, and **Kuk-Jin Yoon**, "Joint Person Re-identification and Camera Network Topology Inference in Multiple Cameras," Computer Vision and Image Understanding (CVIU), 2019. (IF: 2.645 (2018), rank: 58/133)

41. Hanmu Park and **Kuk-Jin Yoon**, "Exploiting Multi-layer Graph Factorization for Multi-attributed Graph Matching," Pattern Recognition Letters, 2019. (IF: 2.810 (2018), rank: 50/133)

40. Hanmu Park and **Kuk-Jin Yoon**, "Consistent Multiple Graph Matching with Multi-layer Random Walks Synchronization," Pattern Recognition Letters, 2019. (IF: 2.810 (2018), rank: 50/133)

39. Min-Gyu Park and **Kuk-Jin Yoon**, "Learning and Selecting Confidence Measures for Robust Stereo Matching,", IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI), vol. 41, no. 6, pp. 1397-1411, 2019. (IF: 17.73 (2018), rank: 1/265, 1/133)

38. Ju Hong Yoon, Chang-Ryeol Lee, Ming-Hsuan Yang, and **Kuk-Jin Yoon**, "Structural Constraint Data Association for Online Multi-Object Tracking," International Journal of Computer Vision (IJCV), vol. 127, no. 1, pp. 1-21, 2019. (IF: 6.071 (2018), rank: 13/133)

37. Chang-Ryeol Lee, Ju Hong Yoon, and **Kuk-Jin Yoon**, "Calibration and Noise Identification of a Rolling Shutter Camera and a Low-cost Inertial Measurement Unit," Sensors, vol. 18, no. 7, 2018. (IF: 2.475 (2018), rank: 16/61)

36. Yeong-Jun Cho and **Kuk-Jin Yoon**, "PAMM: Person Re-identification via Pose-aware Multi-shot Matching," IEEE Transactions on Image Processing (TIP), vol. 27, no. 8, pp. 3739-3752, 2018. (IF: 5.071, rank: 11/132, 24/260)

35. Jeong-Kyun Lee and **Kuk-Jin Yoon**, "Temporally Consistent Road Surface Profile Estimation Using Stereo Vision," IEEE Transactions on Intelligent Transportation System (T-ITS), vol. 19, n o. 5, pp. 1618-1628, 2018. (IF: 4.051, rank: 5/128)

34. Han-Mu Park and **Kuk-Jin Yoon**, "Multi-attributed Graph Matching with Multi-layer Graph Structure and Multi-layer Random Walks," IEEE Transactions on Image Processing (TIP), vol. 27, no. 5, pp. 2314-2325, 2018. (IF: 5.071, rank: 11/132, 24/260)

33. Seung Hwan Bae and **Kuk-Jin Yoon**, "Confidence-Based Data Association and Discriminative Deep Appearance Learning for Robust Online Multi-Object Tracking," IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI), vol. 40, no. 3, pp. 595-610, 2018. (IF: 9.455, rank: 3/260, 2/132)

32. Han-Mu Park, Dae-Yong Cho, and **Kuk-Jin Yoon**, "Greedy Refinement of Object Proposals via Boundary-aligned Minimum Bounding Box Search," IET Computer Vision (CVI), vol. 12, no. 3, pp. 357-363, 2018. (IF: 1.087, rank: 94/132)

31. Han-Mu Park, Se-Hoon Park, and **Kuk-Jin Yoon**, "Multi-object Tracking via Tracklet Confidence-Aided Relative Motion Analysis," SPIE Journal of Electronic Imaging, 2017.

30. Hohyun Cho, Min-Koo Kang, Sangtae Ahn, Moonyoung Kwon, **Kuk-Jin Yoon**, Kiwoong Kim, and Sung Chan Jun, "Cognitive Response and Cortical Oscillatory Processing for Various Stereoscopic Depths - Simultaneous EEG/MEG Study," Journal of Integrative Neuroscience, 2017.

29. Min-Koo Kang, Hohyun Cho, Han- Mu Park, Sung Chan Jun, and **Kuk-Jin Yoon**, "A Wellness Platform for Stereoscopic 3D Video Systems Using EEG-based Visual Discomfort Evaluation Technology," Applied Ergonomics, vol. 62, pp. 158-167, 2017.

28. Yeong-Jun Cho, Seung Hwan Bae, and **Kuk-Jin Yoon**, "Multi-Classier-based Automatic Polyp Detection in Endoscopic Images," Journal of Medical and Biological Engineering, Published Online, Nov. 28, 2016.

27. Hohyun Cho, Min-Koo Kang, Sangtae Ahn, Moonyoung Kwon, **Kuk-Jin Yoon**, Kiwoong Kim, and Sung Chan Jun, "Cortical Responses and Shape Complexity of Stereoscopic Image – A Simultaneous EEG/MEG Study," NeuroSignals, vol. 24, no. 1, pp. 102–112, Oct. 24, 2016.

26. Seung Hwan Bae, Jong-Youl Park, and **Kuk-Jin Yoon**, "Joint Estimation of Multi-Target SNR and Dynamic States in Cluttered Environment," IET Radar, Sonar and Navigation, Published Online, Oct. 19, 2016.

25. Han-Mu Park and **Kuk-Jin Yoon**, "Encouraging Second-order Consistency for Multiple Graph Matching," Machine Vision and Applications, vol. 27, no. 7, pp. 1021–1034, Oct. 1, 2016.

24. Yongho Shin and **Kuk-Jin Yoon**, "PatchMatch Belief Propagation Meets Depth Upsampling for High-resolution Depth Maps," Electronics Letters, vol. 52, no. 17, pp. 1445–1447, Aug. 18, 2016.

23. Ju Hong Yoon, Ming-Hsuan Yang, and **Kuk-Jin Yoon**, "Interacting Multiview Trackers," IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI), vol. 38, no. 5, pp. 903–917, May 1, 2016.

22. Yongho Shin and **Kuk-Jin Yoon**, "Robust Spatiotemporal Stereo against Image Motion and Temporal Disparity Variation," Electronics Letters, vol. 52, no. 7, pp. 515–517, Mar. 31, 2016.

21. Seung Hwan Bae and **Kuk-Jin Yoon**, "Polyp Detection via Imbalanced Learning and Discriminative Feature Learning," IEEE Transactions on Medical Imaging (TMI), vol. 34, no. 11, pp. 2379–2393, Nov. 18, 2015.

20. Jungho Kim, **Kuk-Jin Yoon**, and In So Kweon, "Bayesian Filtering for Keyframe-based Visual SLAM", International Journal of Robotics Research (IJRR), vol. 34, no. 4-5, pp. 517–531, April 15, 2015.

19. Jonghee Park and **Kuk-Jin Yoon**, "Real-time Line Matching from Stereo Images using a Non-parametric Transform of Spatial Relations and Texture Information," SPIE Optical Engineering, vol. 54, no. 2, pp. 023106(1–11), Feb. 19, 2015.

18. Min-Gyu Park, Jonghee Park, Yongho Shin, Eul-Gyoon Lim, and **Kuk-Jin Yoon**, "Stereo Vision with Image-guided Structured-light Pattern Matching," IET Electronics Letters, vol. 51, no. 3, pp. 238–239, Feb. 05, 2015.

17. Jong-Hee Park, Ju Hong Yoon, Min-Gyu Park, and **Kuk-Jin Yoon**, "Dynamic Point Clustering with Line Constraints for Moving Object Detection in DAS," IEEE Signal Processing Letters (SPL), vol. 21, no. 10, pp.1255–1259, Jun. 24, 2014.

16. Minkoo Kang and **Kuk-Jin Yoon**, "Depth-Discrepancy-Compensated Inter-Prediction with Adaptive Segment Management for Multiview Depth Video Coding," IEEE Transactions on Multimedia (TMM), vol. 16, no. 6, pp. 1563–1573, May 14, 2014.

15. Seung Hwan Bae and **Kuk-Jin Yoon**, "Robust Online Multi-Object Tracking with Data Association and Track Management," IEEE Transactions on Image Processing (TIP), vol. 23, no. 7, pp. 2820–2833, April 29, 2014.

14. Min-Koo Kang, Daeyoung Kim, and **Kuk-Jin Yoon**, "Adaptive Support of Spatial-Temporal Neighboring Samples for Depth Map Sequence Up-sampling," IEEE Signal Processing Letters (SPL), vol. 21, no. 2, pp.150–154, Feb. 2014.

13. Ju Hong Yoon, Du Yong Kim, and **Kuk-Jin Yoon**, "Gaussian Mixture Importance Sampling Function for Unscented SMC-PHD Filter," Signal Processing, vol. 93, no. 9, pp. 2664–2670, Sep. 1, 2013.

12. Jae-changean Jeong, Ho-chul Shin, Jiho Chang, Eul-gyun Lim, Seungmin Choi, **Kuk-Jin Yoon**, and Jae-il Cho, "High-quality Stereo Depth Map Generation Using Infrared Pattern Projection," ETRI Journal, vol. 35, no. 6, pp. 1011–1019, June 1, 2013.

11. Seung Hwan Bae, Du Yong Kim, Ju Hong Yoon, Vladimir Shin, and **Kuk-Jin Yoon**, "Automated Multi-target Tracking with Kinematic and Non-kinematic Information," IET Radar, Sonar and Navigation, vol. 6, no. 4, pp. 272–281, April 05, 2012.

10. **Kuk-Jin Yoon**, "Stereo Matching based on Non-linear Diffusion with Disparity-Dependent Support-Weights", IET Computer Vision, vol. 6, no. 4, pp. 306–313, Sep. 13, 2012.

9. Ju Hong Yoon, Du Yong Kim, and **Kuk-Jin Yoon**, "Efficient Importance Sampling Function Design for Sequential Monte Carlo PHD Filter", Signal Processing, vol. 92, no. 9, pp. 2315–2321, Sep. 1, 2012.

8. Min-Gyu Park and **Kuk-Jin Yoon**, "Optimal Key-frame Selection for Video-based Structure-from-motion", Electronics Letters (EL), vol. 47, no. 25, pp. 1367–1369, Dec. 15, 2011.

7. **Kuk-Jin Yoon** and Sung-Kee Park, "Improving Stereo Matching with Symmetric Cost Functions", IEICE Electronics Express, vol. 8, no. 2, pp.57–63, 2011.

6. **Kuk-Jin Yoon**, Emmanuel Prados, and Peter Sturm, "Joint Estimation of Shape and Reflectance using Multiple Images with Known Illumination Conditions", International Journal of Computer Vision (IJCV), vol. 86, no. 2-3, pp. 192–210, 2010.

5. Ji-Ho Cho, **Kuk-Jin Yoon**, and K. H. Lee, "Alpha-matte-based Depth Map Enhancement for Hairy Objects," Electronics Letters, vol. 46, no. 3, pp. 211–213, 2010.

4. **Kuk-Jin Yoon** and In So Kweon, "Distinctive Similarity Measure for Stereo Matching Under Point Ambiguity," Computer Vision and Image Understanding (CVIU), vol. 112, no. 2, pp. 173–183, 2008.

3. Sungho Kim, **Kuk-Jin Yoon**, and In So Kweon, "Object Recognition Using a Generalized Robust Invariant Feature and Gestalt's Law of Proximity and Similarity", Pattern Recognition (PR), vol. 41, no. 2, pp. 726–741, 2008.

2. **Kuk-Jin Yoon** and In So Kweon, "Adaptive Support-Weight Approach for Correspondence Search," IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI), vol. 28, no. 4, pp. 650–656, 2006.

1. **Kuk-Jin Yoon** and In So Kweon, "Voting-based Separation of Diffuse and Specular Pixels," Electronics Letters, vol. 40, no. 20, pp. 1260–1261, 2004.

Conference

104. Byeongin Joung, Byeong-Uk Lee, Jaesung Choe, Ukcheol Shin, Minjun Kang, Taeyeop Lee, In So Kweon, **Kuk-Jin Yoon**, "Stable Surface Regularization for Fast Few-Shot NeRF," International Conference on 3D Vision (3DV), 2024.

103. Hunmin Yang*, Jongoh Jeong*, and **Kuk-Jin Yoon** (*: equal contribution), "FACL-Attack: Frequency-Aware Contrastive Learning for Transferable Adversarial Attacks," Thirty-Eighth AAAI Conference on Artificial Intelligence (AAAI), 2024.

102. Daehee Park, Jaewoo Jeong, and **Kuk-Jin Yoon**, "Improving Transferability for Cross-domain Trajectory Prediction via Neural Stochastic Differential Equation," Thirty-Eighth AAAI Conference on Artificial Intelligence (AAAI), 2024.

101. Inkyu Shin, Dahun Kim, Qihang Yu, Jun Xie, Hong-Seok Kim, Bradley Green, In So Kweon, **Kuk-Jin Yoon**, and Liang-Chieh Chen, "Video-kMaX: A Simple Unified Approach for Online and Near-Online Video Panoptic Segmentation,", IEEE/CVF Winter Conference on Applications of Computer Vision (WACV), 2024.

100. Jihun Kim, Hyeokjun Kweon, Yunseo Yang, and **Kuk-Jin Yoon**, "Learning Point Cloud Completion without Complete Point Clouds: A Pose-aware Approach," IEEE/CVF International Conference on Computer Vision (ICCV), 2023.

99. Hoonhee Cho*, Hyeonseong Kim*, Yujeong Chae, and **Kuk-Jin Yoon** (*: equal constribution), "Label-Free Event-based Object Recognition via Joint Learning with Image Reconstruction from Events," IEEE/CVF International Conference on Computer Vision (ICCV), 2023.

98. Hoonhee Cho, Yuhwan Jeong, Taewoo Kim, and **Kuk-Jin Yoon**, "Non-Coaxial Event-guided Motion Deblurring with Spatial Alignment," IEEE/CVF International Conference on Computer Vision (ICCV), 2023.

97. Muhammad Jehanzeb Mirza, Inkyu Shin, Wei Lin, Andreas Schriebl, Kunyang Sun, Jaesung Choe, Mateusz Kozinski, Horst Possegger, In So Kweon, **Kuk-Jin Yoon**, and Horst Bischof, "MATE: Masked Autoencoders are Online 3D Test-Time Learners," IEEE/CVF International Conference on Computer Vision (ICCV), 2023.

96. Inkyu Shin, Dahun Kim, Qihang Yu, Jun Xie , Hong-Seok Kim, Bradley Green, In So Kweon, **Kuk-Jin Yoon**, and Liang-Chieh Chen, "Video-kMaX: A Simple Unified Approach for Online and Near-Online Video Panoptic Segmentation," IEEE/CVF Conference on Computer Vision and Pattern Recognition Workshop (CVPRW) on Transformers for Vision 2023

95. Valts Blukis, Taeyeop Lee, Jonathan Tremblay, Bowen Wen, In So Kweon, **Kuk-Jin Yoon**, Dieter Fox, and Stan Birchfield, "One-Shot Neural Fields for 3D Object Understanding," IEEE/CVF Conference on Computer Vision and Pattern Recognition Workshop (CVPRW) on XRNeRF: Advances in NeRF for the Metaverse 2023

94. Taewoo Kim, Yujeong Chae, Hyun-Kurl Jang, and **Kuk-Jin Yoon**, "Event-based Video Frame Interpolation with Cross-Modal Asymmetric Bidirectional Motion Fields," IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR) 2023.

93. Hoonhee Cho, Jegyeong Cho, and **Kuk-Jin Yoon**, "Learning to Adaptive Dense Event Stereo from Image Domain," IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR) 2023.

92. Hyeokjun Kweon*, Sung-Hoon Yoon*, and **Kuk-Jin Yoon**, "Weakly Supervised Semantic Segmentation via Adversarial Learning of Classifier and Reconstructor," IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR) 2023.

91. Youngho Yoon, and **Kuk-Jin Yoon**, "Cross-Guided Optimization of Radiance Fields with Multi-View Image Super-Resolution for High-Resolution Novel View Synthesis," IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR) 2023.

90. Hyeonseong Kim, Yoonsu Kang, Changgyoon Oh, and **Kuk-Jin Yoon**, "Single Domain Generalization for LiDAR Semantic Segmentation," IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR) 2023.

89. Taeyeop Lee, Jonathan Tremblay, Valts Blukis, Bowen Wen, Byeong-Uk Lee, Inkyu Shin, Stan Birchfield, In So Kweon, and **Kuk-Jin Yoon**, "TTA-COPE: Test-Time Adaptation for Category-Level Object Pose Estimation," IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR) 2023.

88. Daehee Park, Hobin Ryu, Yunseo Yang, Jegyeong Cho, Jiwon Kim, and **Kuk-Jin Yoon**, "Leveraging Future Relationship Reasoning for Vehicle Trajectory Prediction," The International Conference on Learning Representations (ICLR) 2023.

87. Hyeokjun Kweon*, Hyeonseong Kim*, Yoonsu Kang*, Youngho Yoon*, Wooseong Jeong, and **Kuk-Jin Yoon**, "Pixel-wise Warping for Deep Image Stitching," Thirty-Seventh AAAI Conference on Artificial Intelligence (AAAI 2023)

86. Youngrae Kim*, Jinsu Lim*, Hoonhee Cho*, Minji Lee*, Dongman Lee†, **Kuk-Jin Yoon**†, and Ho-Jin Choi†, "Efficient Reference-based Video Super-Resolution (ERVSR): Single Reference Image Is All You Need," IEEE/CVF Winter Conference on Applications of Computer Vision (WACV) 2023.

85. Hyeokjun Kweon and **Kuk-Jin Yoon**, "Joint Learning of 2D-3D Weakly Supervised Semantic Segmentation," Thirty-sixth Conference on Neural Information Processing Systems (NeurIPS) 2022.

84. Tae-Woo Kim, Jeong-Min Lee, Lin Wang, and **Kuk-Jin Yoon**, "Event-guided Deblurring of Unknown Exposure Time Videos," European Conference on Computer Vision (ECCV) 2022. (oral)

83. Changgyoon Oh, Wonjune Cho, Yujeong Chae, Daehee Park, Lin Wang, and **Kuk-Jin Yoon**, "BIPS: Bi-modal Indoor Panorama Synthesis via Residual Depth-aided Adversarial Learning," European Conference on Computer Vision (ECCV) 2022.

82. Sung-Hoon Yoon*, Hyeokjun Kweon*, Je-Gyeong Cho, Shinjeong Kim, and **Kuk-Jin Yoon**, "Adversarial Erasing Framework via Triplet with Gated Pyramid Pooling Layer for Weakly Supervised Semantic Segmentation," European Conference on Computer Vision (ECCV) 2022.

81. Hoonhee Cho and **Kuk-Jin Yoon**, "Selection and Cross Similarity for Event-Image Deep Stereo," European Conference on Computer Vision (ECCV) 2022.

80. 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 Duel-Pixel Camera," European Conference on Computer Vision (ECCV) 2022.

79. Pranjay Shyam, **Kuk-Jin Yoon**, and Kyung-Soo Kim, "Multi-source Domain Alignment for Robust Segmentation in Unknown Targets," IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS) 2022.

78. Youngho Yoon, Inchul Chung, Lin Wang, and **Kuk-Jin Yoon**, "SphereSR: 360° Image Super-Resolution with Arbitrary Projection via Continuous Spherical Image Representation," IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR) 2022 (oral).

77. Taeyeop Lee, Byeong-Uk Lee, Inkyu Shin, Jaesung Choe, Ukcheol Shin, In So Kweon, and **Kuk-Jin Yoon**, "UDA-COPE: Unsupervised Domain Adaptation for Category-level Object Pose Estimation," IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR) 2022.

76. Inkyu Shin, Yi-Hsuan Tsai, Samuel Schulter, Bingbing Zhuang, Buyu Liu, Sparsh Garg, In So Kweon, and **Kuk-Jin Yoon**, "MM-TTA: Multi-Modal Test-Time Adaptation for 3D Semantic Segmentation," IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR) 2022.

75. Pranjay Shyam, Kyung-Soo Kim*, and **Kuk-Jin Yoon*** (*: co-corresponding author), "GIQE: Generic Image Quality Enhancement via N-th Order Iterative Degradation," IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR) 2022.

74. YeongWoo Nam, Sayed Mohammad Mostafavi Isfahani, **Kuk-Jin Yoon**, and Jonghyun Choi, "Stereo Depth from Events Cameras: Concentrate and Focus on the Future," IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR) 2022.

73. Pranjay Shyam, Sumit Mishra, **Kuk-Jin Yoon**, and Kyung-Soo Kim, "Infra Sim-to-Real : An efficient baseline and dataset for Infrastructure based Online Object Detection and Tracking using Domain Adaptation," IEEE Intelligent Vehicles Symposium (IV) 2022.

72. Hoonhee Cho and **Kuk-Jin Yoon**, "Event-image Fusion Stereo using Cross-modality Feature Propagation, " AAAI Conference on Artificial Intelligence (AAAI), 2022.

71. Pranjay Shyam, Sandeep Singh Sengar, **Kuk-Jin Yoon**, and Kyung-Soo Kim, "Lightweight HDR Camera ISP for Robust Perception in Dynamic Illumination Conditions via Fourier Adversarial Networks," British Machine Vision Conference (BMVC), 2021.

70. Hyeokjun Kweon*, Sung-Hoon Yoon*, Hyeonseong Kim, Daehee Park, and **Kuk-Jin Yoon** (*: equal contribution),"Unlocking the Potential of Ordinary Classifier: Class-specific Adversarial Erasing Framework for Weakly Supervised Semantic Segmentation," IEEE/CVF International Conference on Computer Vision (ICCV), 2021.

69. Lin Wang, Yujeong Chae, and **Kuk-Jin Yoon**,"Dual Transfer Learning for Event-based End-task Prediction via Pluggable Image Translation," IEEE/CVF International Conference on Computer Vision (ICCV), 2021.

68. Mohammad Mostafavi, **Kuk-Jin Yoon**, and Jonghyun Choi, "Event-Intensity Stereo: Estimating Depth by the Best of Both Worlds," IEEE/CVF International Conference on Computer Vision (ICCV), 2021.

67. Haoang Li, Kai Chen, Kyungdon Joo, Pyojin Kim, **Kuk-Jin Yoon**, Zhe Liu, and Yunhui Liu, "Learning Icosahedral Spherical Probability Map Based on Bingham Mixture Model for Vanishing Point Estimation," IEEE/CVF International Conference on Computer Vision (ICCV), 2021.

66. Pranjay Shyam, Sandeep Singh Sengar, **Kuk-Jin Yoon**, and Kyung-Soo Kim, "Evaluating Region Modification based Data Augmentation Techniques for Low Level Vision Tasks," IJCAI 2021 Workshop on Artificial Intelligence for Autonomous Driving, 2021.

65. Lin Wang, Yujeong Chae, Sung-Hoon Yoon, Tae-Kyun Kim, and **Kuk-Jin Yoon**, "EvDistill: Asynchronous Events to End-task Learning via Bidirectional Reconstruction-guided Cross-modal Knowledge Distillation," IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR), 2021.

64. Pranjay Shyam, **Kuk-Jin Yoon**, and Kyung-Soo Kim, "Adversarially-trained Hierarchical Feature Extractor for Vehicle Re-identification," International Conference on Robotics and Automation (ICRA), 2021.

63. Pranjay Shyam, **Kuk-Jin Yoon**, and Kyung-Soo Kim, "Towards Domain Invariant Single Image Dehazing," Thirty-Fifth AAAI Conference on Artificial Intelligence (AAAI), 2021.

62. Lin Wang, Tae-Kyun Kim, and **Kuk-Jin Yoon**, "EventSR: From Asynchronous Events to Image Reconstruction, Restoration, and Super-Resolution via End-to-End Adversarial Learning," IEEE International Conference on Computer Vision and Pattern Recognition (CVPR), 2020.

61. S. Mohammad Mostafavi I., Jonghyun Choi, and **Kuk-Jin Yoon**, "Learning to Super Resolve Intensity Images from Events," IEEE International Conference on Computer Vision and Pattern Recognition (CVPR), 2020. (oral presentation)

60. Pranjay Shyam, **Kuk-Jin Yoon**, and Kyung-Soo Kim, "Dynamic Anchor Selection for Improving Object Localization," International Conference on Robotics and Automation(ICRA), 2020.

59. Ju Hong Yoon, Min-Gyu Park, Youngbae Hwang, and **Kuk-Jin Yoon**, "Learning Depth from Endoscopic Images," International Conference on 3D Vision (3DV), 2019.

58. Yeon Kun Lee*, Jaeseok Jeong*, Jong Seob Yun*, Won June Cho*, and **Kuk-Jin Yoon** (*: equal contribution), "SpherePHD: Applying CNNs on a Spherical PolyHeDron Representation of 360° Images," IEEE International Conference on Computer Vision and Pattern Recognition (CVPR), 2019.

57. Lin Wang*, S. Mohammad Mostafavi I.*, and **Kuk-Jin Yoon** (*: equal contribution), "Event-based High Dynamic Range Image and Very High Frame Rate Video Generation using Conditional Generative Adversarial Networks," IEEE International Conference on Computer Vision and Pattern Recognition (CVPR), 2019.

56. Jeong-Yun Na and **Kuk-Jin Yoon**, "Stereo Vision aided Image Dehazing using Deep Neural Network," ACM MULTIMEDIA 2018 Workshop and Challenge on Comprehensive Video Understanding in the Wild (ACM MM - CoVieW'18), 2018.

55. Young-Chul Yoon and **Kuk-Jin Yoon**, "Animal Detection in Huge Air-view Images using CNN-based Sliding Window," International Workshop on Frontiers of Computer Vision (IW-FCV), Hakodate, Japan, 2018. (Winning the best student paper award at FCV 2018)

54. Yeong-Jun Cho, Jae-Han Park, Su-A Kim, Kyuewang Lee, and **Kuk-Jin Yoon**, "Unified Framework for Automated Person Re-identification and Camera Network Topology Inference in Camera Networks," International Workshop on Cross-domain Human Identification (in conjunction with ICCV), 2017.

53. Jeong-Kyun Lee, Jae-Won Yae, Min-Gyu Park, and **Kuk-Jin Yoon**, "Joint Layout Estimation and Global Multi-View Registration for Indoor Reconstruction," IEEE International Conference on Computer Vision (ICCV), 2017.

52. Chang-Ryeol Lee, Yeongwon Kim, Dae-Yong Cho, Yong-Hoon Kwon, Hyeok-Jae Choi, and **Kuk-Jin Yoon**, "Automatic Content-aware Projection for 360° Videos," IEEE International Conference on Computer Vision (ICCV), 2017.

51. Min-Gyu Park, Ju Hong Yoon, Jonghee Park, Jeong-Kyun Lee, and **Kuk-Jin Yoon**, "Learning to Detect Dynamic Feature Points," IEEE Intelligent Vehicles Symposium (IV), CA, USA, June 11-14, 2017.

50. Suho Cho and **Kuk-Jin Yoon**, "Multiple Styles Transfer Emphasizing Visual Saliency," International Workshop on Frontiers of Computer Vision (FCV), 2017.

49. Jeong-Kyun Lee and **Kuk-Jin Yoon**, "Three-Point Direct Stereo Visual Odometry," British Machine Vision Conference (BMVC), 2016.

48. Han-Mu Park and **Kuk-Jin Yoon**, "Multi-attributed Graph Matching with Multi-layer Random Walks," European Conference on Computer Vision (ECCV), 2016.

47. Se-Hoon Park, Kyuewang Lee, and **Kuk-Jin Yoon**, "Robust Online Multiple Object Tracking based on the Confidence-based Relative Motion Network and Correlation Filter", International Conference on Image Processing (ICIP), 2016.

46. Kyuewang Lee, Se-Hoon Park, and **Kuk-Jin Yoon**, "PSR-Deterministic Search Range Penalization Method on Kernelized Correlation Filter Tracker," International Conference on Ubiquitous Robots and Ambient Intelligence (URAI), 2016.

45. Yeong-Jun Cho and **Kuk-Jin Yoon**, "Improving Person Re-identification via Pose-aware Multi-shot Matching," IEEE International Conference on Computer Vision and Pattern Recognition (CVPR), 2016.

44. Ju Hong Yoon, Chang-Ryeol Lee, Ming-Hsuan Yang, and **Kuk-Jin Yoon**, "Hierarchical Online Multi-object Tracking via Structural Constraint Event Aggregation," IEEE International Conference on Computer Vision and Pattern Recognition (CVPR), 2016.

43. Se-Hoon Park, Min-Gyu Park and **Kuk-Jin Yoon**, "Confidence-based Weighted Median Filter for Effective Disparity Map Refinement," International Conference on Ubiquitous Robots and Ambient Intelligence (URAI), 2015.

42. Yongho Shin and **Kuk-Jin Yoon**, "Spatiotemporal Stereo Matching with 3D Disparity Profiles," British Machine Vision Conference (BMVC), 2015.

41. Jeong-Kyun Lee and **Kuk-Jin Yoon**, "Real-time Joint Estimation of Camera Orientation and Vanishing Points," IEEE International Conference on Computer Vision and Pattern Recognition (CVPR), 2015.

40. Min-Gyu Park and **Kuk-Jin Yoon**, "Leveraging Stereo Matching with Learning-based Confidence Measures," IEEE International Conference on Computer Vision and Pattern Recognition (CVPR), 2015.

39. Ju Hong Yoon, Ming-Hsuan Yang, Jongwoo Lim, and **Kuk-Jin Yoon**, "Bayesian Multi-object Tracking Using Motion Context from Multiple Objects," IEEE Winter Conference on Applications of Computer Vision (WACV), 2015.

38. Seung Hwan Bae and **Kuk-Jin Yoon**, "Robust Online Multi-Object Tracking based on Tracklet Confidence and Online Discriminative Appearance Learning," IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2014.

37. Chang-Ryeol Lee, Ju Hong Yoon, and **Kuk-Jin Yoon**, "Robust Calibration of an Ultra-Low-Cost Inertial Measurement Unit and a Camera: Handling of Severe System Uncertainty," IEEE International Conference on Robotics and Automation (ICRA), 2014.

36. Yongho Shin and **Kuk-Jin Yoon**, "Spatiotemporal Stereo Matching for Dynamic Scenes with Temporal Disparity Variation", International Conference on Image Processing (ICIP), 2013.

35. Ju Hong Yoon, Du Yong Kim, and **Kuk-Jin Yoon**, "Multi-Object Tracking Using Hybrid Observation in PHD filter", International Conference on Image Processing (ICIP),2013.

34. H. Cho, M.-K. Kang, **Kuk-Jin Yoon**, and S. C. Jun, "Feasibility Study for Visual Discomfort Assessment on Stereo Images using EEG," International Conference on 3D Imaging (IC3D), 2012.

33. Min-Gyu Park and **Kuk-Jin Yoon**, "Efficient Point Feature Tracking based on Self-aware Distance Transform," British Machine Vision Conference (BMVC), 2012.

32. Ju Hong Yoon, Du Yong Kim, and **Kuk-Jin Yoon**, "Visual Tracking via Adaptive Tracker Selection with Multiple Features," European Conference on Computer Vision (ECCV), 2012.

31. Dae-Young Kim and **Kuk-Jin Yoon**, "High Quality Depth Map Up-sampling with Consideration for Edge Noise of Range Sensors," IEEE International Conference on Image Processing (ICIP), 2012 (oral presentation).

30. Ji-Ho Cho, Min Ki Park, **Kuk-Jin Yoon**, and Kwan H. Lee, "Automatic Video Matting with Temporal Coherence using Time-of-flight Sensor", 28th Picture Coding Symposium, 2010.

29. **Kuk-Jin Yoon** and Min-Gil Shin, "Reducing Ambiguity in Object Recognition using Relational Information," Asian Conference on Computer Vision (ACCV), pp. 293–306, 2010.

28. **Kuk-Jin Yoon**, Min-Gil Shin, and Ji-Hyo Lee, "Recognizing 3D Objects with 3D Information from Stereo Vision," International Conference on Pattern Recognition (ICPR), pp. 4020–4023, 2010.

27. Yong-Ho Shin, Min-Gyu Park, Young-Sun Jeon, Young-Su Moon, Shi-Hwa Lee, and **Kuk-Jin Yoon**, "Tone Correction with Dynamic Objects for Seamless Image Mosaic," Color and Reflectance in Imaging and Computer Vision Workshop 2010 (in conjunction with ECCV'2010), 2010.

26. Peter Sturm, Amaël Delaunoy, Pau Gargallo, Emmanuel Prados, **Kuk-Jin Yoon**, "3D and Appearance Modeling from Images," 14th Iberoamerican Congress on Pattern Recognition (Invited Talk), 2009.

25. **Kuk-Jin Yoon**, Yekeun Jeong, and In So Kweon, "Support Aggregation via Non-linear Diffusion with Disparity-Dependent Support-Weights for Stereo Matching," Asian Conference on Computer Vision (ACCV), 2009.

24. **Kuk-Jin Yoon**, Emmanuel Prados, and Peter Sturm, "Generic Scene Recovery using Multiple Images", International Conference on Scale Space and Variational Methods in Computer Vision (SSVM), 2009.

23. Jean-Charles Bazin, **Kuk-Jin Yoon**, In So Kweon, Cedric Demonceaux, and Pascal Vasseur, "Particle Filter Approach Adapted to Catadioptric Images for Target Tracking Application," British Machine Vision Conference (BMVC), 2009.

22. Jungho Kim, **Kuk-Jin Yoon**, and In So Kweon, "Robust 3-D Visual SLAM in a Large-scale Environment," International Symposium on Robotics Research (ISRR) (Invited Talk), 2009.

21. Jean-Charles Bazin, Dang-Quang Pham, Inso Kweon, and **Kuk-Jin Yoon**, "Automatic Method for Closed Eye Correction," IEEE International Conference on Image Processing (ICIP), 2009.

20. **Kuk-Jin Yoon** and In So Kweon, "Stereo Matching with the Distinctive Similarity Measure," IEEE International Conference on Computer Vision (ICCV), 2007.

19. **Kuk-Jin Yoon**, Amaël Delaunoy, Pau Gargallo, and Peter Sturm, "Toward Global and Model based Multiview Stereo Methods for Shape and Reflectance Estimation," Workshop on Photometric Analysis and Computer Vision (PACV) (in conjunction with ICCV), 2007.

18. **Kuk-Jin Yoon** and In So Kweon, "Stereo Matching with Symmetric Cost Functions," IEEE Conference on Computer Vision and Pattern Recognition (CVPR), pp. 2371–2377, 2006.

17. **Kuk-Jin Yoon** and In So Kweon, "Correspondence Search in the Presence of Specular Highlights using Specular-Free Two-Band Images," Lecture Notes in Computer Science–Asian Conference on Computer Vision (ACCV), vol. 3852, pp. 761–770, 2006.

16. **Kuk-Jin Yoon**, Yoo Jin Choi, and In So Kweon, "Fast Separation of Reflection Components Using a Specularity-Invariant Image Representation," IEEE International Conference on Image Processing (ICIP), pp. 973–976, 2006.

15. Sungho Kim, **Kuk-Jin Yoon**, and In So Kweon, "Background Robust Object Labeling by Voting of Weight-Aggregated Local Features," International Conference on Pattern Recognition (ICPR), pp. 219–222,, 2006.

14. Sungho Kim, **Kuk-Jin Yoon**, and In So Kweon, "Object Recognition Using a Generalized Robust Invariant Feature and Gestalt's Law of Proximity and Similarity," IEEE Workshop on Perceptual Organization in Computer Vision (in conjunction with CVPR), pp. 193–200, 2006.

13. **Kuk-Jin Yoon** and In So Kweon, "Locally Adaptive Support-Weight Approach for Visual Correspondence Search," IEEE Conference on Computer Vision and Pattern Recognition (CVPR), vol. 2, pp. 924–931, 2005.

12. **Kuk-Jin Yoon**, Yoo Jin Choi, and In So Kweon, "Dichromatic-Based Color Constancy Using Dichromatic Slope and Dichromatic Line Space," IEEE International Conference on Image Processing (ICIP), vol. 3, pp. 960–963, 2005.

11. **Kuk-Jin Yoon**, Yoo-Jin Choi, and In So Kweon, "Illuminant Chromaticity Estimation Using Dichromatic Slope and Dichromatic Line Space," Korea-Japan Joint Workshop on Frontiers of Computer Vision (FCV), pp. 219–224, 2005.

10. **Kuk-Jin Yoon** and In So Kweon, "Human Perception Based Color Image Quantization," International Conference on Pattern Recognition (ICPR), vol. 1, pp. 664–667, 2004.

9. Ouk Choi, **Kuk-Jin Yoon**, and In So Kweon, "A Hierarchical Window Based Approach for Correspondence Problem in Vision," International Conference on Mechatronics and Information Technology (ICMIT), pp. 590–594, 2003.

8. **Kuk-Jin Yoon** and In So Kweon, "Color Image Segmentation Considering of Human Sensitivity for Color Pattern Variations," SPIE Photonics Boston 2001 : Intelligent Robot and Computer Vision XX: Algorithms, Techniques and Active Vision, vol. 4572, pp. 269–278, 2001.

7. **Kuk-Jin Yoon** and In So Kweon, "Artificial Landmark Tracking Based on the Color Histogram," IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), vol. 4, pp. 1918–1923, 2001.

6. **Kuk-Jin Yoon** and In So Kweon, "Landmark Design and Real-Time Landmark Tracking for Mobile Robot Localization," SPIE Photonics Boston 2001 : Mobile Robots XVI, vol. 4573, pp. 219–226, 2001.

5. **Kuk-Jin Yoon**, Gi-Jeong Jang, Sung-Ho Kim, and In So Kweon, "Fast Landmark Tracking and Localization Algorithm for the Mobile Robot Self-Localization," IFAC Workshop on Mobile Robot Technology, pp. 190–195, 2001.

4. **Kuk-Jin Yoon**, In So Kweon, Chan-Ho Lee, Jong-Kyu Oh, and In-Taek Yeo, "Landmark Design and Real-Time Landmark Tracking Using Color Histogram for Mobile Robot Localization," International Symposium on Robotics (ISR), pp. 1083–1088, 2001.

3. Jong-Eun Ha, Jin-Young Yang, **Kuk-Jin Yoon**, and In So Kweon, "Self-Calibration Using the Linear Projective Reconstruction," IEEE International Conference on Robotics and Automation (ICRA), vol. 1, pp. 885–890, 2000.

2. **Kuk-Jin Yoon** and In So Kweon, "Moving Object Segmentation Algorithm for Human-like Vision System," International Workshop on Human-friendly Welfare Robotic Systems (HWRS), pp. 109–114, 2000.

1. **Kuk-Jin Yoon**, In So Kweon, Chang-Yeong Kim and Yang-Seok Seo, "Moving Object Segmentation Based on Human Visual Sensitivity," Lecture Notes in Computer Science–Biologically Motivated Computer Vision (BMCV), vol. 1811, pp. 62–72, 2000.

Patents

International

6. (Active) Kee Chang Lee, Wonhee Lee, **Kuk Jin Yoon**, Yongho Shin, Yeong Won Kim, Jin Ho Song, "Stereo Matching Method and Apparatus", Active, US10853960B2, 2019.

5. (Active) Ji Hyo Lee, **Kuk Jin Yoon**, and Woo Sup Han, "Object Recognition System using Left and Right Images and Method", Active, US9984280 B2, 2018.

4. (Active) Ji Ho Chang, Jae Chan Jeong, Ho Chul Shin, Dae Hwan Hwang, Seung Min Choi, Eul Gyoon Lim, Jae IL Cho, and **Kuk Jin Yoon**, "Stereo Matching Method and Device for Performing the Method", Active, US9967516 B2, 2018.

3. (Active) Young-Su Moon, **Kuk Jin Yoon**, and Jae-hyun Kim, "Method and Apparatus for Estimating Image Optical Flow", Active, US9811918 B2, 2017.

2. (Active) Sung-Hyun Kim, **Kuk-Jin Yoon**, Seung-Hwan Bae, Yeong-Jun Jo, Tae-Kyung Kim, and Ji-Woon Jung, "Polyp Detection Apparatus and Method of Operating the Same", Active, US9530205 B2, 2014.

1. (Active) **Kuk-Jin Yoon**, Makoto Kimura, Jin-kyung Lee, Yasuo Takane, Tae-kyung Kim, Hyunseok Choi, Taek-seong Jeong, Kyoung-hwan Moon, and Takashima Masahiro, "Method for Improving 3-Dimensional Effect and Reducing Visual Fatigue and Apparatus Enabling the Same", Active, US8760502 B2, 2014.

Domestic

12. (Active) **Kuk-Jin Yoon**, Yeon Kun Lee, Jae Seok Jeong, Jong Seob Yun, Won June Cho, "Method and Apparatus of Detecting Object uinsg Deep Learning of Omni Directionsl Image, Method of Autonomous Driving of Vehicle and Drone using the Method (전방향 영상의 딥러닝을 이용한 물체 감지 방법 및 장치, 그리고 이를 이용한 차량 자율 주행 방법 및 드론 자율 주행 방법)," KR 1024425450000

11. (Active) Inkyu Park, Incheol Cho,**Kuk-Jin Yoon**, Minkyu Cho, "Variable Photo-illumination Method of Photoactivated Gas Sensor for Gas Identification (가변광조사를 이용한 광활성 가스센서의 가스종 식별방법)," KR 1024562910000

10. (Active) Young-su Moon, **Kuk-Jin Yoon**, Jaehyun Kim, "Method and Apparatus for Estimating Image Optical Flow (영상 광류를 추정하는 방법 및 이를 위한 장치)," KR 1022653150000

9. (Active) Jonghyun Choi, S. Mohammad Mostafavi I., **Kuk-Jin Yoon**, "A Method and Apparatus for Generating Super Resolve Intensity Image (고해상도 강도 이미지 생성 방법 및 장치," KR 1023661870000

8. (Active) Ji Ho Chang, Jae Chan Jeong, Ho Chul Shin, Dae Hwan Hwang, Seung Min Choi, Eul Gyoon Lim, Jae Il Cho, **Kuk-Jin Yoon**, "Method of Stereo Matching and Apparatus for Performing the Method (스테레오 매칭 방법 및 이를 수행하는 장치," KR 1021789780000

7. (Active) **Kuk-Jin Yoon**, Dae-Yong Cho, "An Apparatus, a Method, and a Computer-readable Storage Medium for Refining Object Proposal (객체 검색 후보 영역을 개선하기 위한 방법, 컴퓨터-판독가능 저장 매체 및 장치)," KR 1018744710000

6. (Active) **Kuk-Jin Yoon**, Min-Gyu Park, "A Method, an Apparatus and a Computer-readable Storage Medium of Leveraging Stereo Matching with Confidence Measures (신뢰척도에 따른 레버리지 스테레오 매칭 방법, 장치 및 컴퓨터-판독 가능 저장 매체)," KR 1017685330000
5. (Active) **Kuk-Jin Yoon**, Jeong Gyun Lee, "Estimation Method and Apparatus for Information Corresponding Camera Orientation by Using Image (이미지를 이용하는 카메라의 방향과 관련한 정보 추정장치 및 추정방법)," KR 1018471130000
4. (Active) Ju Hong Yoon, Young Bae Hwang, Byeong Ho Choi, **Kuk-Jin Yoon**, "Image based Hierarchical Multiple Object Tracking Method and System using a Relative Motion between Objects (객체 간의 상대 움직임 정보를 이용한 영상 기반 계층적 다중 객체 추적 방법 및 시스템)," KR 1017683720000
3. (Active) **Kuk-Jin Yoon**, Sua Kim, "Method for 3D Object Detection and Pose Estimation (3차원 객체 검출 및 자세추정 방법)," KR 1018197300000
2. (Active) **Kuk-Jin Yoon**, Min-Gyu Park, "Confidence based Recursive Filtering Method for Depth Map Refinement (신뢰 기반 재귀적 깊이 영상 필터링 방법)," KR 1017633760000
1. (Active) Jihyyo Lee, **Kuk-Jin Yoon**, Woosup Han "Object Recognition System and Method the Same (물체 인식 시스템 및 그 물체 인식 방법)," KR 1017157820000

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22. Sung-Hyun Park, 08/2020, Twinny,
21. Tae-Woo Kim, 02/2020, KAIST Ph.D Candidate, intelpro@kaist.ac.kr
20. Sung-Hoon Yoon, 02/2020, KAIST Ph.D Candidate, yoon307@kaist.ac.kr
19. Yeon-Kun Lee, 02/2020, NC SOFT,
18. Jeong-Yun Na, 08/2018, Hyundai Mobis, jyun.na@mobis.co.kr
17. Hyeok-Jae Choi, 02/2018, SUALAB, hyeokjae94@gist.ac.kr
16. Jae-Han Park, 02/2018, Algorigo, qkrwogks@gist.ac.kr
15. Yong-Hoon Kwon, 08/2017, Korea Electronics Technology Institute (KETI)
14. Jae-Won Yae, 02/2017, LG Electronics,
13. Yeong-Won Kim, 08/2016, VUNO inc (Alternative military service), Lecon@gist.ac.kr
12. Se-Hoon Park, 02/2016, LG Electronics, evilrace40@gmail.com
11. Dae-Yong Cho, 02/2016, KIST, dycho@gist.ac.kr
10. Su-A Kim, 08/2015, Intel Visual Computing Institute, suah90@gmail.com
9. Dae-Won Ko, 02/2015, POSTECH Full-time Resercher, davidk@postech.ac.kr
8. Hee-Jong Hong, 02/2015, Hanhwa Corporation, hjhong@gist.ac.kr
7. Yeong-Jun Cho, 02/2014, Chonnam University, yj.cho@jnu.ac.kr
6. Chang-Ryeol Lee, 02/2013, SLAMcore, chang@slamcore.com
5. Dae-Young Kim, 02/2012, Hyundai Motors, mafia.log@gmail.com
4. Seung-Hwan Jung, 02/2012, Hyundai Motors, shjeong0707@gmail.com
3. Yong-ho Shin, 02/2011, Qualcomm Korea, yshin@qti.qualcomm.com

2. Min-Gyu Park, 08/2011, Korea Electronics Technology Institute (KETI), mpark@keti.re.kr
1. Min-Gil Shin, 08/2010, LG Electronics, dreamyperson@gmail.com

Research Projects[1] (To be updated)

73. **(PI)** Domain Adaptation for AI-based Detection and Monitoring: LIG Nex1, 100M KRW, 10/2022 – 09/2023

72. **(PI)** Low-level Image Fusion for Autonomous Driving: Hyundai Motors, 85M KRW, 11/2022 – 11/2023

71. **(PI)** Research on Multi-sensor Fusion for Autonomous Driving: National Research Foundation of Korea, Korea Ministry of Science and ICT (MSIT), 850M KRW (for four years), 03/2022 – 02/2026

70. Development of Humanoid Robot Pilot based on Natural Language Processing and Knowledge Base: ADD (Agency for Defense Development), 200M per year, 01/2022 – 11/2026

69. AI Research for Intelligent X-ray Luggage Scanning Systems: National Research Foundation of Korea, 150M KRW per year, 07/2021 – 06/2024

68. **(PI)** Development of an Iron Plate Abrasion Rate Recognition System: Samsung Heavy industry, 60M KRW, 05/2021 – 01/2022

67. Development of Compact EOTS for Drones: EO Systems, 60M KRW per year, 01/2021 – 12/2023

66. **(PI)** Intelligent Focus Adjustment for Dual Pixel Cameras: Samsung Advanced Institute of Technology, 57.4M KRW per year, 09/2020 – 09/2023

65. **(PI)** Deep-learning-based 5G Real-time Hologram Generation and Processing: IITP, 120M KRW (per year), 2020 – 2023

64. **(PI)** Deep-learning-based Hand Pose Estimation using Low-resolution Images: KETI, 60M KRW, 05/2020 – 11/2020

63. **(PI)** Meta-fusion of Deep Neural Networks: ETRI, 90.9M KRW, 04/2020 – 11/2020

62. Research on Self-improving AI: National Research Foundation of Korea, 200M KRW (per year), 04/2020 – 12/2023

61. Deep View – Research on Vision- and Learning-based Scene Understanding and Event Forecasting: Korea Ministry of Science, ICT and Future Planning (MSIP), 80M KRW (per year), 2019 – 2023.

60. Research on Autonomous Multi-agent CPS: ADD (Agency for Defense Development), 60M KRW per year, 12/2019 – 12/2024

59. Research on Mapping and Perception: NaverLabs, 85M KRW (per year), 2019 – 2022

58. Development of Quadruped Robot for Surveillance, Reconnaissance, and Search Missions: ADD (Agency for Defense Development), 140M KRW (per year), 12/2019 – 11/2024

[1] 1,100 KRW = 1 US Dollar, 10M KRW ≈ 9090 US Dollar

57. **(PI)** Automatic Color Texture Generation for 3D Point Cloud Data: KETI, 80M KRW, 06/2019 – 11/2019

56. **(PI)** Vision-based Abnormal Event Detection: Hyundai Heavy Industries, 50M KRW, 04/2019 – 12/2019

55. **(PI)** AAVM Pedestrian Detection: Hyundai Construction Equipment, 60M KRW, 02/2019 – 12/2019

54. **(PI)** Computer Vision Algorithms based on 360° Cameras and Event Cameras: Naver Labs, 85M KRW, 01/2019 – 01/2020

53. **(PI)** Accurate Stereo Matching Algorithm for Indoor Robot Navigation: Samsung Research, 96M KRW, 05/2018 – 04/2019

52. Research on Multi-modal Hand Control, Korea Ministry of Trade, Industry and Energy (MOTIE), 140M KRW (per year), 04/2018 – 12/2019

51. **(PI)** Research on Event Camera-based Computer Vision Algorithms for Visual Intelligence: National Research Foundation of Korea, Korea Ministry of Science and ICT (MSIT), (중견연구자지원사업), 850M KRW (for four years), 03/2018 – 02/2022

50. Fundamental Study of Vision Algorithms for Comprehensive and Thorough Understanding of Videos: KRF, 235M KRW, 08/2017 – 04/2019

49. 4D Reconstruction of Non-rigid Dynamic Objects for Realistic Services: Giga KOREA Foundation, 500M KRW (among total research fund 7,000M KRW), 04/2017 – 12/2020

48. 360° Stereo Camera-based Dynamic Scene Understanding for Autonomous Driving: Samsung Future Technology Foundation, 500M KRW, 09/2016 – 08/2019

47. **(PI)** AR/VR Platform Development for ADAS Research: GIST, 200M KRW, 05/2017 – 12/2017

46. **(PI)** Stereo-based High Speed and High Accurate Depth Sensing for AR HUD: Samsung Electronics, 90M KRW, 07/2016 – 06/2017

45. **(PI)** Visual Attention Estimation for VR: Samsung Electronics, 290M KRW, 05/2016 – 12/2017

44. Depth Sensing and Depth-based Road Monitoring: Korea Ministry of Trade, Industry and Energy (MOTIE), 110M KRW (per year on average), 03/2016 – 12/2017

43. **(PI)** Real-time Multi-Object Tracking: Hyundai Motors, 72.25M KRW, 12/2015 – 11/2016

42. **(PI)** Road Surface Inspection using Depth Images: Hyundai Mobis, 80M KRW, 09/2015 – 11/2016

41. **(PI)** Development of Local Stereo Matching Logic: KETI, 50M KRW, 09/2015 – 05/2016

40. **(PI)** Illumination and Reflection Estimation based on 3D Shape Analysis: ETRI, 50M KRW, 06/2015 – 01/2016

39. **(PI)** Stereo-vision-based 3D Dynamic Environment Analysis for Autonomous Driving of Smart Cars: National Research Foundation of Korea, Korea Ministry of Science, ICT and Future Planning (MSIP), (미래부 중견연구자지원사업 - 도약), 279M KRW (per year), 05/2015 – 04/2018.

38. Online Monitoring and Extracting Features of Emotional Audience Responses during Cultural Events: Korea Ministry of Culture, Sports and Tourism (MCST), 50M KRW (per year), 04/2015 – 03/2018

37. Deep View – Research on Vision- and Learning-based Scene Understanding and Event Forecasting: Korea Ministry of Science, ICT and Future Planning (MSIP), 45M KRW (per year), 03/2014 – 02/2018.

36. Real-time 3D Scene Modeling with Active Vision Sensors: Human-Centered Interaction for Coexistence Project: Korea Ministry of Science, ICT and Future Planning (MSIP), 50M KRW (per year), 09/2012 – 08/2015

35. **(PI)** Structure-from-motion for Mobile Devices: LG Electronics, 30M KRW, 09/2014 – 12/2014

34. **(PI)** Dynamic Scene Understanding using Stereo Cameras: Hyundai Mobis, 72M KRW, 05/2014 – 12/2014

33. **(PI)** High-Speed Optical Flow Estimation: Samsung Electronics, 70M KRW, 04/2014 – 01/2015

32. **(PI)** High Accuracy Stereo Vision with Pattern Projection: Samsung Electronics, 90M KRW, 11/2013 – 09/2014

31. **(PI)** Dynamic Objects Detection and Path Prediction using Stereo Cameras: LG Electronics, 60M KRW, 04/2013 – 12/2013

30. **(PI)** Automatic Polyp Detection in Endoscopic Images, : Samsung Electronics, 85M KRW, 03/2013 – 12/2013

29. Interactive Performance based on Audience Reaction: Korea Ministry of Culture, Sports and Tourism (MCST), 55M KRW, 08/2012 – 03/2013

28. **(PI)** Stereo with 2x2 Camera Array: LG Electronics, 50M KRW, 08/2012 – 07/2013

27. **(PI)** Stereo Matching Robust to Illumination Changes: ETRI, 50M KRW (per year), 05/2012 – 01/2015

26. **(PI)** Multi-baseline Stereo based SLAM for Dynamic Environments: Korea Ministry of Education, Science and Technology (MEST), (기본연구자지원사업 - 신진), 48M KRW (per year), 05/2012 – 04/2015

25. **(PI)** High-quality Disparity Map Estimation with Motion: Samsung Electronics, 90M KRW, 03/2012 – 02/2013

24. **(PI)** Endoscopic Image Processing - Stitching of Non-overlapping Images and Detecting Polyps in Endoscopic Images: Samsung Electronics, 85M KRW, 04/2012 – 12/2012

23. **(PI)** Fusion of Active Laser Sensor and Camera: KIST, 30M KRW, 08/2011 – 08/2012

22. **(PI)** Sensor-fusion-based User Motion Capture: NHN and National IT Industry Promotion Agency (NIPA), 60M KRW, 11/2011 – 06/2012

21. **(PI)** Research on the 3D Scene Reconstruction and Scene Flow Estimation using Multi-view Image Sequence: Korean Ministry of Education, Science and Technology (MEST), (기본연구자지원사업 - 신진), 50M KRW (per year), 05/2009 – 04/2012

20. Realistic Broadcasting Research Center (ITRC): National IT Industry Promotion Agency (NIPA), 20M KRW (per year), 01/2009 – 12/2011 · 3D Reconstruction with Multi-view Video Sequence

19. **(PI)** High-resolution Depth Map Estimation using a Semi-active Stereo Camera System: Samsung Electronics, 52M KRW, 04/2011 – 11/2011

18. **(PI)** Research on the Terrain Matching Methods for Terrain-aided Navigation (TAN): LIG Nex1 and Agency for Defense Development(ADD), 50M KRW, 06/2010 – 05/2011

17. **(PI)** System Development for Illumination Source Estimation: Viewrun and ETRI, 40M KRW, 09/2010 – 06/2010

16. **(PI)** Development of Automatic Inter-Camera Distance Adjustment Methods: Samsung Electronics, 60M KRW, 03/2010 – 12/2010

15. **(PI)** Research on Texture Synthesis and Specular Reflection Removal: ETRI, 60M KRW, 06/2009 – 01/2010

14. **(PI)** Object Contour Extraction for Robot Grasping: KIST, 25M KRW (per year), 01/2009 – 12/2010

13. Development of Experience Tour Technology based on Mobile Mixed Reality: KIST, 20M KRW, 03/2009 – 02/2010

12. **(PI)** Multi-view Image Stitching: Samsung Advanced Institute of Technology, 30M KRW, 07/2009 – 07/2010

11. **(PI)** Object Recognition with Stereo Cameras: Samsung Electronics, 150M KRW, 02/2009 – 12/2009

10. Flamenco Project: (French) National Agency for Research (ANR), 2007 – 2008

9. Robust Robot Vision Research: MOST National Research Laboratory, June 2003.– May 2006.

8. Vision-based Environments Recognition for Network-based Humanoids: KIST, February 2004.– January 2006.

7. Development of the Real-Time 3D Image Sensor: Samkyung Hitech, October 2001.– November 2003.

6. Vision Guidance System based on Human Binocular Vision Model: BSRC, August 2001.– May 2003.

5. Development of Entertainment Robots: HWRS-ERC, March 1999.– February 2003.

4. Imaging System for 3D Display: KIST, 2002.

3. Vision for Mobile Robot: Samsung Electronics, 2002.

2. Image-based Guidance System for AGV: Hyundai Heavy Industry, 2000.

1. Image/Video Indexing: Samsung Advanced Institute of Technology, 2000.

Teaching (in English)

- Spring 2023: Introduction to Visual Intelligence
- Fall 2022: Autonomous Mobile Systems Programming
- Spring 2022: Introduction to Visual Intelligence
- Fall 2021: Special Topics in Mechanical Engineering - Programming for Autonomous Mobile Systems
- Spring 2021: Introduction to Visual Intelligence
- Spring 2021: Capstone Design I
- Fall 2020: Special Topics in Mechanical Engineering - Programming for Autonomous Mobile Systems
- Fall 2020: Special Topics in Mechanical Engineering - MyME
- Fall 2020: Capstone Design II
- Spring 2020: Special Topics in Mechanical Engineering - Visual Intelligence
- Spring 2020: Special Topics in Mechanical Engineering - MyME
- Fall 2019: Special Topics in Mechanical Engineering - Programming for Autonomous Mobile Systems
- Fall 2019: Special Topics in Mechanical Engineering - MyME
- Fall 2019: Capstone Design II
- Spring 2019: Special Topics in Mechanical Engineering - Visual Intelligence
- Spring 2019: Special Topics in Mechanical Engineering - MyME
- Spring 2019: Capstone Design I
- Fall 2018: Random Data
- Fall 2018: Special Topics in Mechanical Engineering - Programming for Autonomous Mobile Systems
- Spring 2018: Special Topics in Mechanical Engineering - Visual Intelligence
- Fall 2017: Computer Vision
- Spring 2017: Signals and Systems
- Fall 2016: Computer Vision
- Spring 2016: Digital Image Processing
- Fall 2015: Computer Vision
- Spring 2015: Signals and Systems
- Fall 2014: Computer Vision
- Spring 2013: Signals and Systems
- Fall 2012: High-level Image Understanding & Processing – Computer Vision
- Spring 2012: Signals and Systems
- Fall 2011: Digital Image Processing
- Spring 2011: High-level Image Understanding & Processing – Computer Vision
- Fall 2010: Digital Image Processing
- Spring 2010: High-level Image Understanding & Processing – Computer Vision
- Fall 2009: Digital Image Processing
- Spring 2009: High-level Image Understanding & Processing
- Fall 2008: Digital Image Processing

Awards

- Bronze Prize (as an Advisor): Samsung HumanTech Paper Award, 2023.
- Best Paper Award (Gold Prize): 35th Workshop on Image Processing and Image Understanding, 2023.
- Best Paper Awards (Grand and Gold Prizes): 34th Workshop on Image Processing and Image Understanding, 2022.
- Seleciton of KAIST's Top 10 Research Achievements, 2022.
- KI (KAIST Institue) Convergence Researcher Award, 2021.
- The 1st and 3rd Place at the Event-based Stereo Challenge in CVPRW 2021, 2021.
- Commendation from the Korea Minister of Science and ICT in Recognition of Contributions in the field of Artificial Intelligence (인공지능산업발전유공 과학기술정보통신부장관 표창), Dec. 2020.
- Sang-Uk Lee Prize (test-of-time award) at Korean Conference on Computer Vision by Korean Computer Vision Society, 2020.
- Best Paper Award: Korea Software Congress 2019 by The Korean Institute of Information Scientists and Engineers, 2019.
- Best Paper Awards (Grand and Bronze Prizes): 31th Workshop on Image Processing and Image Understanding, 2019.
- Best Student Paper Award (as an Advisor) : IW-FCV 2018, 2018.
- Best Paper Award (Silver Prize) and Best Poster Paper Award: 30th Workshop on Image Processing and Image Understanding, 2018.
- Silver Prize (as an Advisor): Samsung HumanTech Paper Award, 2017.
- Best Poster Presentation Award (as an Advisor): IW-FCV 2017, 2017.
- Outstanding Reviewer, ECCV 2016, 2016.
- Best Paper Award: 28th Workshop on Image Processing and Image Understanding, 2016.
- Bronze Prize (as an Advisor): Samsung HumanTech Paper Award, 2016.
- Silver Prize (as an Advisor): Samsung HumanTech Paper Award, 2015.
- Participation Prize (as an Advisor): Samsung HumanTech Paper Award, 2015.
- The 1st Place at the 1st Multi-object Tracking Challenge (MOT Competition sponsored by Daimler), 2015.
- Best Paper Award: 9th Korea Robotics Society Annual Conference, 2014.
- Best Paper Award: 26th Signal Processing Conference by The Institute of Electronics and Information Engineers, 2014.
- Best Paper Award: 26th Workshop on Image Processing and Image Understanding, 2014.
- Silver Prize (as an Advisor): Samsung HumanTech Paper Award, 2014.
- Bronze Prize (as an Advisor): Samsung HumanTech Paper Award, 2014.
- Silver Prize (as an Advisor): Samsung HumanTech Paper Award, 2012.
- Grants to Post-Doctoral Fellows by INRIA, 2006.
- Government Grant to Post-Doctoral Fellows by Korea Research Foundation, 2006.
- Silver Prize: Samsung HumanTech Paper Award, 2006.
  · Kuk-Jin Yoon, "Specularity-Invariant Image Representation and Its Application to Correspondence Search and Reflection Components Separation"
- Top 10% among the Accepted Papers: ICIP, 2005.
  · Kuk-Jin Yoon and Yoo-Jin Choi, "Dichromatic-Based Color Constancy Using Dichromatic Slope and

Dichromatic Line Space"

- Bronze Prize: Samsung HumanTech Paper Award, 2005.

  · Kuk-Jin Yoon and Yoo-Jin Choi, "Illuminant Chromaticity Estimation Using Dichromatic Slope and Dichromatic Line Space"

- Research Prize: The Fifth Korean Intelligent Robot Contest, 2003.

  · Development of KASIRI III

- The 3rd Place: Best Poster Award in Photonics Boston, 2001.

  · Kuk-Jin Yoon and In So Kweon, "Color Image Segmentation Considering of Human Sensitivity for Color Pattern Variations"

Invited Talks and Papers (To be update)

International

- (Invited Talk) "Event Camera-based Computer Vision," DeepView Workshop AT AVSS 2022, Online, Nov. 2022
- (Department Seminar)"Computer Vision with Omnidirectional and Event Cameras," AI Thrust Seminar at HKUST, Online, April 2022
- (Invited Talk) "Sensing and Perception with 360° and Event Cameras for Autonomous Driving," International Symposium on Future Mobility (ISFM), 2019
- (Invited Talk) "Applying Deep Learning to 360° and Event Cameras," DGIST Global Innovation Festival, Korea, 2019
- (Invited Talk) "Generating Content-aware Perspective Videos from 360° Videos for Comfortable 360° Video Watching," 24th International Workshop on Frontiers of Computer Vision, Japan, 2018
- (Invited Talk) "Generating Content-aware Perspective Videos from 360° Videos for Comfortable 360° Video Watching," DGIST Global Innovation Festival, Korea, 2017
- (Invited Talk) "Robust Stereo Matching with Temporal Aggregation and Matching Confidence," International Conference on Internet of Vehicles, Nadi, Fiji, 2016
- (Invited Talk) "How Much Further Can We Go in Two-frame Stereo?", Symposium on High Precision Stereo Vision, SIAM IS 2014, Hong Kong, 2014
- (Invited Paper) Peter Sturm, Amaël Delaunoy, Pau Gargallo, Emmanuel Prados, **Kuk-Jin Yoon**, "3D and Appearance Modeling from Images," 14th Iberoamerican Congress on Pattern Recognition, 2009.

Domestic

- "Computer Vision for Autonomous Mobility," SNU ME Department Seminar, March 2023
- Workshop on Vision Graphics AI and Acceleration for Self-driving Cars: Seeing for Moving – Computer Vision with 360-degree Cameras and Event Cameras for Autonomous Driving, 02/2022
- GIST EECS Colloquium: Seeing for Moving: Computer Vision for Smart Mobility, 12/2021
- Republic of Korea Air Force Headquarters: Seeing for Moving – Introduction to Artificial Intelligence, 10/2021
- 수중수상로봇연구회 기조강연: View More Widely and Clearly – Scene Perception with 360-degree Cameras and Event Cameras, 05/2021
- 2nd Operations Command: Artificial Visual Intelligence and Its Applications, 01/2021
- (Plenary Talk) Korean Conference on Computer Vision (KCCV) 2020: Computer Vision and Machine

Learning for Autonomous Driving, August 2020.

- 2020 Software Convergence Symposium(SWCS2020: Scene Understanding using 360° and Event Cameras, August 2020.
- LIG Nex1: Computer Vision and Machine Learning based 3D Dynamic Scene Understanding, Januray 2020.
- ICROS-KROS 대전충청:ADAS for Autonomous Driving based on Computer Vision and Machine Learning, December 2019.
- 한국자동차공학회: 강인한 자율주행을 위한 360도 이벤트 카메라 응용 연구, October 2019.
- ADD: 360도 카메라 및 이벤트 카메라를 활용한 딥러닝 기반의 환경 인식 연구, September 2019.
- KAIST 문술미래전략대학원: 미래도시: 자율주행자동차, June 2019.
- 삼성전기: Research on event camera-based computer vision algorithms for visual intelligence, June 2019
- Postech: Applying Deep Learning to 360° and Event Cameras, April 2019.
- 연세대학교: DNNs for 360° and Event Cameras, January 2019.
- KCCV 2018 (invited): Joint Layout Estimation and Global Multi-view Registration for Indoor Reconstruction, July 2018.
- ETRI: Multi-camera Network Topology Estimation and Person Re-ID, May 2018.
- GIST: 컴퓨터 비전 및 기계학습 기반 자율주행을 위한 요소 기술, April 2018.
- KIST: 360° Videos and ADAS, April, 2018.
- 네이버랩스(Naver Labs): Survey on Lane-Level Localization, July 2017.
- Vivozon: Computer Vision-based Scene Understanding, September 2017.
- 개방형컴퓨터통신연구회(OSIA): 자율 주행을 위한 컴퓨터 비전 및 머신 러닝 기반 주행 환경 인식 기술, June 2017.
- KCCV 2017 (invited): Multi-attributed Graph Matching with Multi-layer Random Walks, June 2017.
- 네이버랩스(Naver Labs): 영상에서의 Appearance 및 움직임 정보 모델링을 통한 다중 객체 추적, March 2017.
- 경희대학교: 자율주행 자동차를 위한 비전 기반 ADAS 연구, November 2016.
- 자동차 융합 얼라이언스 기술 발전 세미나: 자율주행을 위한 컴퓨터 비전 기반 동적 주행 환경 인식 기술, October 2016.
- KCCV 2016 (invited): Tracking and Identifying Multiple Objects across Multiple Cameras, July 2016.
- 대한전자공학회 영상처리연구회 워크샵: Dynamic 환경에서의 자율 주행체를 위한 비전 기반 응용 기술, July 2016.
- 스마트카 센서/부품 테크포럼 세미나 2016: 컴퓨터 비전 기반 동적 주행 환경 인지 기술, June 2016.
- UMV 자율주행기술 전문가 세미나: 자율 이동체를 위한 영상 기반 상황 센싱 및 인지 기술, June 2016.
- 한국미래기술교육연구원 인공지능 및 카메라/영상인식 기반의 자율 주행차 최신 개발기술 및 센서 적용방안 세미나: 스마트카의 자율주행을 위한 스테레오 영상 기반 동적 상황 인지 기술 연구, April 2016.
- 호남 ETRI, March 2016.
- 대한전자공학회 컴퓨터비전 튜토리얼, February 2016.
- ETRI, Daejeon, December 2015.
- Hyundai Mobis 기술포럼 전문가 세미나: 차량용 카메라 보정을 위한 자세 추정 기법 및 주변 방애물 검출을 위한 3차원 복원 방법, November 2015.
- ETRI: Multiple Object Tracking, Daejeon, September 2015.
- KAIST NOVIC Seminar: 스마트카의 자율주행을 위한 컴퓨터 비전 기반 동적 상황 인지 기술, September 2015.

- KCCV 2015 (invited): Leveraging Stereo Matching with Learning-based Confidence Measures, August 2015.
- POSTECH: Multi-object Tracking Tutorial, August 2015.
- KAIST: 스마트카의 자율주행을 위한 스테레오 영상 기반 ADAS 기술, August 2015.
- 정보과학회 CVPR 워크샵: 스마트카의 자율 주행을 위한 동적 상황 인지 기술, July 2015.
- IPIU 2015 초청논문: 카메라 움직임에 강건한 영상기반 다중객체 추적 방법, February 2015.
- 한국에너지기술연구원: Fourier and Wavelet Transform, January 2015.
- SK Telecom: Robust Online Object Tracking, December 2014.
- SNU: Multi-object Tracking Tutorial, November 2014.
- 자동차 공학회 전기전자ITS 부문 워크샵: Vision-based Moving Obstacle Avoidance for Autonomous Vehicles, October 2014.
- KCCV 2014 (invited): Online Robust Multi-target Tracking, August 2014.
- 정보과학회 여름학교: Geometric Computer Vision, August 2014.
- KETI: Recent Advances on Online Robust Multi-target Tracking, August 2014.
- Hanyang Univ.: Stereo, April 2014.
- POSTECH, Pohang, (Department Seminar) 2014
- Yonsei University, Seoul, January, 2014
- KIST, Seoul, September, 2013
- KIST, Seoul, July 2013
- KETI, Bundang, May 2013
- POSTECH, Pohang , March 2013
- Inha Univ., Incheon , January 2013
- KICT, Goyang-si, December 2012
- Dongseo Univ., Busan, November 2012
- ETRI, Daejeon, May 2012
  · Title: Semi-active Stereo Vision
- Korean Society of Broadcast Engineers, Seoul, August 2011
  · Title: Tutorial on Stereo Vision
- Pentech, Seoul, July 2011
  · Title: Computer Vision for Mobile Devices
- GIST Science School, Gwangju, November 2010
- Yeungnam Universityl, Kyungsan, November 2010
- Agency for Defense Development(ADD), Daejeon, July 2010
  · Title: Tracking Filters for Terrain-Aided Navigation
- Samsung Electronics, Suwon, May 2010.
  · Title: Introduction to Stereo Vision and 3D Reconstruction
- LIG NEX1, Suwon, April 2010
  · Title: Terrain-Aided Navigation
- Electronics and Telecommunications Research Institute (ETRI), Daejeon, Korea, April 2010.
- Electronics and Telecommunications Research Institute (ETRI), Daejeon, Korea, July 2009.
- Daegu Gyeongbok Institute of Science and Technology (DGIST), Daegu, Korea, December 2008.
- Korea Institute of Science and Technology (KIST), Seoul, Korea, December 2008.
- Department of Electrical Engineering and Computer Science, KAIST, Daejeon, Korea, October 2008.

· Title: Stereo Vision

- Department of Information and Communications, GIST, Gwangju, Korea, February 2008.
  · Title: Multi-view Stereo under Image Ambiguity and Appearance Changes
- Perception Team in INRIA Rhône-Alpes, Montbonnot, France, September 2006.
  · Title: Stereo Matching under Image Ambiguity and Appearance Changes
- The 4th KAIST–Tsinghua Joint Workshop on Pattern Recognition, Daejeon, Korea, September 2005.
  · Title: Reflection Analysis using a Single Color image and Its Application to Stereo
- The 1st International Joint Workshop of KAIST–RCV and U.Tokyo–Ikeuchi Lab. on Robust Vision Technology, Daejeon, Korea, April 2005.
  · Title: Robust Vision Techniques based on the Local-Level Analysis of Image Information
- The 3th KAIST–Tsinghua Joint Workshop on Pattern Recognition, Beijing, China, December 2004.
  · Title: Locally Adaptive Support-Weight Approach for Visual Correspondence Search
- Samsung Advanced Institute of Technology, December 2003.
  · Title: Stereo Vision
- NRL(National Research Laboratory) Joint Workshop on Intelligent Robot Technology, Kyungju, Korea, October 2003.
  · Title: 3D Computation, Obstacle Detection/Avoidance, and Object Tracking using Stereo Vision for Intelligent Robots
- The 6th Autumn Seminar of a Korean Society for the 3D Medical Image Research, September 2001.
  · Title: Tutorial on the 3D Modeling from Multiple Images
- Advanced Science Institute 2001, Tokyo, Japan, July 2001.
  · Title: Computer Vision Applications