

Chang-Su Kim

Research Area

Research interests lie in the area of signal processing, source coding and multimedia systems.

- Image processing
- Multimedia communication
- Error-resilient image and video coding
- Representation and compression of 3D models

Employment History

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| Mar. 2012 – Present | Professor
School of Electrical Engineering
Korea University |
| Mar. 2008 – Feb. 2012 | Associate Professor
School of Electrical Engineering
Korea University |
| Sept. 2005 – Feb. 2008 | Assistant Professor
School of Electrical Engineering
Korea University |
| Aug. 2003 – Aug. 2005 | Assistant Professor
Department of Information Engineering
The Chinese University of Hong Kong |
| Dec. 2001 – July 2003 | Senior Researcher, Seoul National University <ul style="list-style-type: none">▪ Coordinated the 3D Data Compression Group in National Research Laboratory for 3D Visual Information Processing. |
| July 2000 – Nov. 2001 | Postdoctoral Fellow, University of Southern California <ul style="list-style-type: none">▪ Supported Prof. C.-C. Jay Kuo to supervise the Multimedia Transmission Group and the 3D Graphics Streaming Group in Signal and Image Processing Institute. |
| July 2000 – Nov. 2001 | Consultant, InterVideo, Inc., Fremont, California <ul style="list-style-type: none">▪ Consulted on H.263, MPEG-4, and H.264 technologies.▪ Developed a low bitrate video coding system.▪ Developed error control mechanisms for H.263 and MPEG-4 systems. |
| Apr. 1997 – Mar. 2000 | Administration Assistant, Seoul National University <ul style="list-style-type: none">▪ Worked as an Administration Assistant in Planning Office, College of Engineering. |
| Mar. 1994 – June 2000 | Research Assistant, Seoul National University <ul style="list-style-type: none">▪ Assisted Prof. Sang-Uk Lee to carry out several projects funded by government and electronics companies. |

Education

Ph.D. in Electrical Engineering (Aug. 2000)

- Seoul National University, Advisor: Prof. Sang-Uk Lee
- Dissertation: On the Techniques for Robust Transmission of Video Sequence over Noisy Channel

M.S. in Control and Instrumentation Engineering (Feb. 1996)

- Seoul National University, Advisor: Prof. Sang-Uk Lee

B.S. in Control and Instrumentation Engineering (Feb. 1994)

- Seoul National University

Professional Activities

Editorial Board Member of

- Journal of Visual Communication and Image Representation (June 2006 – June 2009)

Organizations of conferences and standardization meetings

- Program Committee – SPIE's International Symposium on ITCOM 2007, Multimedia Systems and Applications X, Boston, USA, Sept. 2007.
- Organizing Committee – The 2nd IAPR/IEEE International Conference on Biometrics, Seoul, Korea, Aug. 2007.
- Program Committee – SPIE's International Symposium on ITCOM 2006, Multimedia Systems and Applications IX, Boston, USA, Oct. 2006.
- Publication Chair – 15th International Packet Video Workshop (PV 2006), Hangzhou, China, Apr. 2006.
- Publication Chair – International Symposium on Intelligent Signal Processing and Communication Systems (ISPACS) 2005, Hong Kong, Dec. 2005.
- Program Committee – SPIE's International Symposium on ITCOM 2005, Multimedia Systems and Applications VIII, Boston, USA, Oct. 2005.
- Technical Program Committee – International Conference on Image Processing (ICIP) 2005, Genova, Sept. 2005.
- Organizing Committee – 71st MPEG Meeting, Hong Kong, Jan 2005.
- Program Committee – SPIE's International Symposium on ITCOM 2004, Multimedia Systems and Applications VII, Pennsylvania, USA, Oct. 2004.
- Technical Program Committee – International Conference on Image Processing (ICIP) 2004, Singapore, Oct. 2004.
- Program Committee – The Third International Conference on Image and Graphics 2004, Hong Kong, Dec. 2004.

Referee for the following journals

- IEEE Transactions on Circuits and Systems for Video Technology
- IEEE Transactions on Image Processing
- IEEE Transactions on Multimedia
- IEEE Transactions on Communications
- IEEE Transactions on Circuits and Systems - Part 1
- IEEE Signal Processing Letters
- IEEE Journal of Selected Areas in Communications
- Journal of Visual Communication and Image Representation
- EURASIP Journal on Applied Signal Processing
- SPIE Journal of Electronic Imaging

- Journal of Information Science and Engineering
- ETRI Journal

Referee for the following conferences

- International Conference on Computer and Information Technology (CIT) 2006
- International Symposium on Circuits and Systems (ISCAS) 2004, 2005, 2006, 2007.
- International Conference on Image Processing (ICIP) 2004, 2005, 2007, 2008
- International Symposium on Intelligent Signal Processing and Communication Systems (ISPACS) 2005
- International Workshop on Multimedia Systems and Networking (WMSN) 2005
- Packet Video Workshop 2004
- The Third International Conference on Image and Graphics 2004

국내 학회 활동

- 대한전자공학회 교육연구위원회 위원 및 간사, 2006
- 대한전자공학회 총무간사 및 평의원, 2007
- 한국방송공학회 총무간사 및 평의원, 2007

Membership

- Senior Member of IEEE
- Life Member of the Korean Institute of Communication Sciences
- Life Member of the Institute of Electronics Engineers of Korea
- Life Member of the Korean Society of Broadcast Engineers

Contributions to Standards

MPEG-4

1. In Kyu Park, Shinjun Lee, In-Wook Song, Chang-Su Kim, "Compression of PointTexture in depth image-based representation (DIBR)," Document No. M9810, Trondheim, Norway, July 2003.
2. In Kyu Park, Mahnjin Han, In-Wook Song, and Chang-Su Kim, "Results of core experiment on depth image-based representation (AFX A8.3)," Document No. M9209, Awaji, Japan, Dec. 2002.

Patents

U.S. Patents

1. In-Kyu Park, Shin-Jun Lee, In-Wook Song, Chang-Su Kim, and Sang-Uk Lee, "Method and apparatus for encoding and decoding three-dimensional object data," Patent No. 7,263,236, Aug. 28, 2007.
2. Ioannis Katsavounidis, Chang-Su Kim, and JongWon Kim, "Systems and methods for decoding of partially corrupted reversible variable length code (RVLC) intra-coded macroblocks and partial block decoding of corrupted macroblocks in a video decoder," Patent No. 7,260,150, Aug. 21, 2007 (This is the divisional application of Patent No. 6,876,705, Apr. 5, 2005) and Patent No. 7,215,712, May 8, 2007.
3. Chang-Su Kim and Ioannis Katsavounidis, "Systems and methods for encoding redundant motion vectors in compressed video bitstreams," Patent No. 7,242,715, July 10, 2007, Patent No. 7,236,520, June 26, 2007, and Patent No. 7,164,716, Jan. 16, 2007 (These three are divisional applications of Patent No. 7,003,033, Feb. 21, 2006).
4. Chang-Su Kim and Ioannis Katsavounidis, "Systems and methods for decoding redundant motion vectors in compressed video bitstreams," Patent No. 7,224,730, May 29, 2007.
5. Ioannis Katsavounidis, Chang-Su Kim, and Lifeng Zhao, "Systems and methods for detecting scene changes in a video data stream," Patent No. 7,164,717, Jan. 16, 2007 (This is the divisional application of Patent No. 7,110,452, Sept. 19, 2006.)
6. Chang-Su Kim and Ioannis Katsavounidis, "Systems and methods for reducing error propagation in a

video data stream," Patent No. 6,993,075, Jan. 31, 2006.

7. Chang-Su Kim, JongWon Kim, and Ioannis Katsavounidis, "Systems and methods for enhanced error concealment in a video decoder," Patent No. 6,990,151, Jan. 24, 2006.
8. Chang-Su Kim, Ioannis Katsavounidis, and Lifeng Zhao, "Systems and methods for reducing frame rates in a video data stream," Patent No. 6,970,506, Nov. 29, 2005.

European Patents

1. In-Kyu Park, Shin-Jun Lee, In-Wook Song, Chang-Su Kim, and Sang-Uk Lee, "Method and apparatus for encoding and decoding three-dimensional object data," Pub. No. 03257599.5, Dec. 2003.

Korean Patents

1. In-Kyu Park, Shin-Jun Lee, In-Wook Song, Chang-Su Kim, and Sang-Uk Lee, "Method and apparatus for encoding and decoding three-dimensional object data," Patent No. 1005137320000, Sept. 2005.
2. Jae-Young Sim, Chang-Su Kim, and Sang-Uk Lee, "Rate-distortion optimized compression of 3D normal meshes," Patent No. 1005117190000, Aug. 2005.
3. Jae-Young Sim, Chang-Su Kim, and Sang-Uk Lee, "View-dependent compression and transmission of 3D normal meshes," Patent No. 1005117170000, Aug. 2005.
4. Seung Hwan Kim, Chang-Su Kim, and Sang-Uk Lee, "Motion estimation techniques for video coding system," Patent No. 0479255, Mar. 2005.
5. Sung-Bum Park, Chang-Su Kim, and Sang-Uk Lee, "Progressive compression of 3D meshes," Patent No. 0473704, Feb. 2005.
6. Jeong-Hyu Yang, Chang-Su Kim, and Sang-Uk Lee, "Apparatus and methods for compression of 3D mesh sequences based on vertex-wise motion vector prediction," Patent No. 0439578, June 2004.
7. Jae-Young Sim, Chang-Su Kim, and Sang-Uk Lee, "3D mesh compression using triangle fan structure," Patent No. 0420006, Feb. 2004.
8. In-Wook Song, Chang-Su Kim, and Sang-Uk Lee, "Compression of 3D voxel models based on skeleton representation," Patent No. 0400608, Sept. 2003.
9. Musik Kwon, Chang-Su Kim, Kyoung Mu Lee, and Sang-Uk Lee, "Progressive encoding of binary voxel models using pyramidal decomposition," Patent No. 1003970830000, Aug. 2003.
10. Sang-Uk Lee and Chang-Su Kim, "Encoder and decoder for 3D voxel images," Patent No. 100379028, Mar. 2003.
11. Jeong-Hyu Yang, Chang-Su Kim, and Sang-Uk Lee, "Semi-regular representation of 3D mesh sequences," filed in Mar. 2003.

Publication List

Book Chapters

1. Chang-Su Kim and C.-C. Jay Kuo, "Data compression," in The Handbook of Computer Networks, H. Bidgoli, Ed., John Wiley & Sons, to be published in Dec. 2007.
2. Chang-Su Kim and C.-C. Jay Kuo, "Data compression," in The Internet Encyclopedia, H. Bidgoli, Ed., John Wiley & Sons, 2004, vol. 1, pp. 384-399.

Journal Papers

1. Sang-Uk Park, Young-Yoon Lee, Chang-Su Kim, and Sang-Uk Lee, "CDV-DVC: Transform-domain distributed video coding with multiple channel division," submitted to Journal of Visual Communication and Image Representation, May 2012.
2. Soon-Young Lee, Jae-Young Sim, Chang-Su Kim, and Sang-Uk Lee, "Correspondence matching of multi-view video sequences using mutual information based similarity measure," submitted to IEEE Trans. Image Processing, May 2012.
3. Dae-Youn Lee, Sanghoon Sull, and Chang-Su Kim, "Progressive 3D mesh compression using MOG-based Bayesian entropy coding and gradual prediction," submitted to The Visual Computer, Jan. 2012.

4. Jae-Kyun Ahn, Yeong Jun Koh, and Chang-Su Kim, "Efficient fine-granular scalable coding of 3D mesh sequences," submitted to IEEE Trans. Multimedia, Mar. 2012 (in revision).
5. Il-Lyong Jung, Nikolay Akatyev, Won-Dong Jang, Leonardo Juniti Nomoto and Chang-Su Kim, "Touchless user interface based on marker detection and tracking for real-time mobile applications," to appear in International Journal of Innovative Computing, Information and Control, 2012.
6. Il-Lyong Jung, Tae-Young Chung, Jae-Young Sim, and Chang-Su Kim, "Consistent Stereo Matching Under Varying Radiometric Conditions," to appear in IEEE Trans. Multimedia, 2012.
7. Chul Lee and Chang-Su Kim, "Rate-distortion optimized layered coding of high dynamic range videos," Journal of Visual Communication and Image Representation, vol. 23, no. 6, pp. 908-923, Aug. 2012.
8. Dae-Young Hyun, Jun-Hee Heu, Chang-Su Kim, and Sang-Uk Lee "Prioritized image and video colorization based on Gaussian pyramid of gradient images," SPIE Journal of Electronic Imaging, vol. 21, no. 2, 023027, June 2012.
9. Chul Lee, Chulwoo Lee, and Chang-Su Kim, "An MMSE approach to nonlocal image denoising: theory and practical implementation," Journal of Visual Communication and Image Representation, vol. 23, no. 3, pp. 476-490, Apr. 2012.
10. Jae-Young Sim and Chang-Su Kim, "Reconstruction depth adaptive coding of digital holograms," IEICE Trans. Fundamentals of Electronics, Communications and Computer Sciences, vol. E95-A, no. 2, pp. 617-620, Feb. 2012.
11. Chulwoo Lee, Chul Lee, Young-Yoon Lee, and Chang-Su Kim, "Power-constrained contrast enhancement for emissive displays based on histogram equalization," IEEE Trans. Image Processing, vol. 21, no. 1, pp. 80-93, Jan. 2012.
12. Tae-Young Chung, Sanghoon Sull, and Chang-Su Kim, "Frame loss concealment for stereoscopic video plus depth sequences," IEEE Trans. Consumer Electronics, vol. 57, no. 3, pp. 1336-1344, Aug. 2011.
13. Jae-Kyun Ahn, Dae-Youn Lee, Minsu Ahn and Chang-Su Kim, "R-D optimized progressive compression of 3D meshes using prioritized gate selection and curvature prediction," The Visual Computer, vol. 27, no. 6, pp. 769-779, June 2011.
14. Jun-Seong Kim, Seong-Gyun Jeong, Younghun Joo, and Chang-Su Kim, "Content-aware image and video resizing based on frequency domain analysis," IEEE Trans. Consumer Electronics, vol. 57, no. 2, pp. 615-622, May. 2011.
15. Je-Won Kang, Young-Yoon Lee, Chang-Su Kim, and Sang-Uk Lee, "Coding order decision of B frames for rate-distortion performance improvement in single-view video and multiview video coding," IEEE Trans. Image Processing, vol. 19, no. 8, pp. 2029-2041, Aug. 2010.
16. Jae-Kyun Ahn, Dae-Yeon Lee, Chul Lee, and Chang-Su Kim, "Automatic moving object segmentation from video sequences using alternate flashing system," EURASIP Journal on Advances in Signal Processing, vol. 2010, Article ID 340717, 14 pages, 2010.
17. Minh N. Do, Chang-Su Kim, Karsten Müller, Masayuki Tanimoto, and Anthony Vetro, "Guest Editorial - Multi-Camera Imaging, Coding and Innovative Display: Techniques and Systems," Journal of Visual Communication and Image Representation, vol. 21, no. 5-6, pp. 375-376, July-Aug. 2010.
18. Tae-Young Chung, Il-Lyong Jung, Kwanwoong Song, and Chang-Su Kim, "Multi-view video coding with view interpolation prediction for 2D camera arrays," Journal of Visual Communication and Image Representation, vol. 21, no. 5-6, pp. 474-486, July-Aug. 2010.
19. Myounghoon Kim, Soonhong Jung, Chang-Su Kim, and Sanghoon Sull, "An efficient inter-frame coding with intra skip decision in H.264/AVC," IEEE Trans. Consumer Electronics, vol. 56, no. 2, pp. 856-862, May. 2010.
20. Soon-Young Lee, Jun-Hee Heu, Chang-Su Kim, and Sang-Uk Lee, "Object removal and inpainting in multi-view video sequences," International Journal of Innovative Computing, Information and Control, vol. 6, no. 3, pp. 1241-1255, Mar. 2010.
21. Jun-Hee Heu, Chang-Su Kim, and Sang-Uk Lee, "SNR and temporal scalable coding of 3-D mesh sequences using singular value decomposition," Journal of Visual Communication and Image Representation, vol. 20, no. 7, pp. 439-449, Oct. 2009.
22. Pongsak Lasang, Chang-Su Kim, and Wuttipong Kumwilaisak "Rate-complexity scalable multi-view image coding with adaptive disparity-compensated wavelet lifting" Journal of Information and

- Computing Science, vol. 4, no. 3, pp. 211-223, Aug. 2009.
23. Nitin Singhal, Young-Yoon Lee, Chang-Su Kim, and Sang-Uk Lee, "Robust image watermarking using local Zernike moments," *Journal of Visual Communication and Image Representation*, vol. 20, no. 6, pp. 408-419, Aug. 2009.
 24. Hendro Baskoro, Jun-Seong Kim, and Chang-Su Kim, "Mean-shift object tracking with discrete and real AdaBoost techniques," *ETRI Journal*, vol. 31, no. 3, pp. 282-291, June 2009.
 25. Kwanwoong Song, Taeyoung Chung, Yunje Oh, and Chang-Su Kim, "Error concealment of multi-view video sequences using inter-view and intra-view correlations," *Journal of Visual Communication and Image Representation*, vol. 20, no. 4, pp. 281-292, May 2009.
 26. Young-Yoon Lee, Sang-Uk Park, Chang-Su Kim, and Sang-Uk Lee, "Temporal Feature Modulation for Video Watermarking," *IEEE Trans. Circuits Syst. Video Technol.*, vol. 19, no. 4, pp. 603-608, Apr. 2009.
 27. Young-Yoon Lee, Chang-Su Kim, and Sang-Uk Lee, "Video frame matching algorithm using dynamic programming," *SPIE Journal of Electronic Imaging*, vol. 18, no. 1, 010504, Jan.-Mar. 2009.
 28. Il-Lyong Jung, Taeyoung Chung, Kwanwoong Song, and Chang-Su Kim, "Efficient stereo video coding based on frame skipping for real-time mobile applications," *IEEE Trans. Consumer Electronics*, vol. 54, no. 3, pp. 1259-1266, Aug. 2008.
 29. Kwanwoong Song, Taeyoung Chung, Yongdeok Kim, Yunje Oh, and Chang-Su Kim, "Error concealment of H.264/AVC video frames for mobile video broadcasting," *IEEE Trans. Consumer Electronics*, vol. 53, no. 2, pp. 704-711, May 2007.
 30. Byeong-Doo Choi, Jong-Woo Han, Chang-Su Kim, and Sung-Jea Ko, "Motion compensated frame interpolation using bilateral motion estimation and adaptive overlapped block motion compensation," *IEEE Trans. Circuits Syst. Video Technol.*, vol. 17, no. 4, pp. 407-416, Apr. 2007.
 31. Chang-Su Kim and Rin-Chul Kim, "Gray level disturbances in pulse number modulation and their reduction algorithm," *SPIE Journal of Electronic Imaging*, vol. 15, no. 4, 043002, Oct.-Dec. 2006.
 32. In-Wook Song, Chang-Su Kim, and Sang-Uk Lee, "Progressive compression and transmission of PointTexture images," *Journal of Visual Communication and Image Representation*, vol. 17, no. 5, pp. 1090-1107, Oct. 2006.
 33. Sung-Bum Park, Chang-Su Kim, and Sang-Uk Lee, "Error resilient 3-D mesh compression," *IEEE Trans. Multimedia*, vol. 8, no. 5, pp. 885-895, Oct. 2006.
 34. Jeong-Hyu Yang, Chang-Su Kim, and Sang-Uk Lee, "Semi-regular representation and progressive compression of 3-D dynamic mesh sequences," *IEEE Trans. Image Processing*, vol. 15, no. 9, pp. 2531-2544, Sept. 2006.
 35. Byeong-Doo Choi, Jong-Woo Han, Chang-Su Kim, and Sung-Jea Ko, "Frame Rate Up-Conversion Using Perspective Transform," *IEEE Trans. Consumer Electronics*, vol. 52, no. 3, pp. 975-982, Aug. 2006.
 36. Wei-Ying Kung, Chang-Su Kim, and C.-C. Jay Kuo, "Spatial and temporal error concealment techniques for video transmission over noisy channels," *IEEE Trans. Circuits Syst. Video Technol.*, vol. 16, no. 7, pp. 789-802, July 2006.
 37. Junhee Heu, Jeong-Hyu Yang, Chang-Su Kim, and Sang-Uk Lee, "Effective quantisation scheme for principal components of 3-D mesh sequences," *IEE Electronics Letters*, vol. 42, no. 14, pp. 799-800, July 2006.
 38. Jeong-Hwan Ahn, Chang-Su Kim, and Yo-Sung Ho, "Predictive compression of geometry, color, and normal data of three-dimensional mesh models," *IEEE Trans. Circuits Syst. Video Technol.*, vol. 16, no. 2, pp. 291-299, Feb. 2006.
 39. Wei-Ying Kung, Chang-Su Kim, and C.-C. Jay Kuo, "Analysis of multi-hypothesis motion compensated prediction (MHMCP) for robust visual communication," *IEEE Trans. Circuits Syst. Video Technol.*, vol. 16, no. 1, pp. 146-153, Jan. 2006.
 40. Jae-Young Sim, Chang-Su Kim, and Sang-Uk Lee, "Lossless compression of 3-D point data in QSplat representation," *IEEE Trans. Multimedia*, vol. 7, no. 6, pp. 1191-1195, Dec. 2005.
 41. Jingliang Peng, Chang-Su Kim, and C.-C. Jay Kuo, "Technologies for 3D mesh compression: A survey," *Journal of Visual Communication and Image Representation*, vol. 16, pp. 688-733, Dec. 2005.

42. Xiaoming Sun, Chang-Su Kim, and C.-C. Jay Kuo "MPEG video markup language and its applications to robust video transmission," *Journal of Visual Communication and Image Representation*, vol. 16, no. 4-5, pp. 589-620, Aug.-Oct. 2005.
43. Jae-Young Sim, Chang-Su Kim, C.-C. Jay Kuo, and Sang-Uk Lee, "Rate-distortion optimized compression and view-dependent transmission of 3-D normal meshes," *IEEE Trans. Circuits Syst. Video Technol.*, vol. 15, no. 7, pp. 854-868, July 2005.
44. Chang-Su Kim, JongWon Kim, Ioannis Katsavounidis, and C.-C. Jay Kuo, "Robust MMSE video decoding: theory and practical implementations," *IEEE Trans. Circuits Syst. Video Technol.*, vol. 15, no. 1, pp. 39-51, Jan. 2005.
45. Bong Gyun Roh, Chang-Su Kim, and Sang-Uk Lee, "Progressive coding of binary voxel models based on pattern code representation," *IEICE Trans. Fundamentals of Electronics, Communications and Computer Sciences*, vol. E87-A, no.12, pp. 3334-3342, Dec. 2004.
46. Sheng Yang, Chang-Su Kim, and C.-C. Jay Kuo, "A progressive view-dependent technique for interactive 3-D mesh transmission," *IEEE Trans. Circuits Syst. Video Technol.*, vol. 14, no. 11, pp. 1249-1264, Nov. 2004.
47. Musik Kwon, Chang-Su Kim, Kyoung Mu Lee, and Sang-Uk Lee, "Progressive encoding of binary voxel models using pyramidal decomposition," *Journal of Visual Communication and Image Representation*, vol. 15, no. 1, pp. 44-64, Mar. 2004.
48. Chien-Hwa Hwang, Chang-Su Kim, and C.-C. Jay Kuo, "A graphic approach to performance analysis of multistage linear interference canceller in long-code CDMA systems," *IEEE Trans. Commun.*, vol. 51, no. 11, pp. 1858-1870, Nov. 2003.
49. Jae-Young Sim, Chang-Su Kim, and Sang-Uk Lee, "An efficient 3D mesh compression technique based on triangle fan structure," *Signal Processing: Image Communication*, vol. 18, no. 1, pp. 17-32, Jan. 2003.
50. Jeong-Hyu Yang, Chang-Su Kim, and Sang-Uk Lee, "Compression of 3D triangle mesh sequences based on vertex-wise motion vector prediction," *IEEE Trans. Circuits Syst. Video Technol.*, vol. 12, no. 12, pp. 1178-1184, Dec. 2002.
51. Seung Hwan Kim, Chang-Su Kim, and Sang-Uk Lee, "An efficient motion compensation algorithm based on double reference frame method," *Signal Processing: Image Communication*, vol. 17, no. 8, pp. 635-649, Sept. 2002.
52. Chang-Su Kim and Sang-Uk Lee, "Compact encoding of 3D voxel surfaces based on pattern code representation," *IEEE Trans. Image Processing*, vol. 11, no. 8, pp. 932-943, Aug. 2002.
53. Jeong-Hwan Ahn, Chang-Su Kim, C.-C. Jay Kuo, and Yo-Sung Ho, "Motion compensated compression of 3D animation models," *IEE Electronics Letters*, vol. 37, no. 24, pp. 1445-1446, Nov. 2001.
54. Chang-Su Kim and Sang-Uk Lee, "Multiple description coding of motion fields for robust video transmission," *IEEE Trans. Circuits Syst. Video Technol.*, vol. 11, no. 9, pp. 999-1010, Sept. 2001.
55. Chang-Su Kim, Rin-Chul Kim, and Sang-Uk Lee, "Robust transmission of video sequence using double-vector motion compensation," *IEEE Trans. Circuits Syst. Video Technol.*, vol. 11, no. 9, pp. 1011-1021, Sept. 2001.
56. Chang-Su Kim, Rin-Chul Kim, and Sang-Uk Lee, "An error detection and recovery algorithm for compressed video signal using source level redundancy," *IEEE Trans. Image Processing*, vol. 9, no. 2, pp. 209-219, Feb. 2000.
57. Chang-Su Kim, Rin-Chul Kim, and Sang-Uk Lee, "Robust transmission of video sequence over noisy channel using parity-check motion vector," *IEEE Trans. Circuits Syst. Video Technol.*, vol. 9, no. 7, pp. 1063-1074, Oct. 1999.
58. Chang-Su Kim, Rin-Chul Kim, and Sang-Uk Lee, "A fractal vector quantizer for image coding," *IEEE Trans. Image Processing*, vol. 7, no. 11, pp. 1598-1602, Nov. 1998.
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60. Chang-Su Kim and Sang-Uk Lee, "Fractal coding of video sequence by circular prediction mapping," *Fractals*, vol. 5, Supplementary Issue, pp. 75-88, Apr. 1997.

Conference Papers

1. Chulwoo Lee, Chul Lee, and Chang-Su Kim, "Power-constrained image processing techniques for emissive and non-emissive displays," Proc. International Meeting on Information Display (IMID), Seoul, Korea, Oct. 2011.
2. Seong-Gyun Jeong and Chang-Su Kim, "Feature-preserving thumbnail generation based on graph cuts," Proc. ICIP, Brussels, Belgium, Sep. 2011.
3. Dae-Youn Lee, Jae-Kyun Ahn, Minsu Ahn, James D. K. Kim, Changyeong Kim, and Chang-Su Kim, "3D mesh compression based on dual-ring prediction and MMSE prediction," Proc. ICIP, Brussels, Belgium, Sep. 2011.
4. Chul Lee, Chulwoo Lee, and Chang-Su Kim, "MMSE nonlocal means denoising algorithm for Poisson noise removal," Proc. ICIP, Brussels, Belgium, Sep. 2011.
5. Chulwoo Lee, Chul Lee, and Chang-Su Kim, "Gradient domain contrast enhancement with histogram-guided boundary conditions," in Proc. IEEE ICIP, Sept, 2010, pp. 3494-3497.
6. Dae-Hyun Lee, Jae-Young Sim, Chang-Su Kim, and Sang-Uk Lee, "Viewing angle dependent coding of digital holograms," Proc. EUSIPCO, Bucharest, Romania, Aug. 2011.
7. Sang-Hwan Kim and Chang-Su Kim, "Panoramic video synthesis using selective warping," Proc. International Conference on 3D Systems and Applications (3DSA), Seoul, Korea, Jun. 2011.
8. Jin-Hwan Kim, Jae-Young Sim, and Chang-Su Kim, "Fast contrast restoration for hazy video sequences," Proc. International Technical Conference on Circuits/Systems, Computers and Communications (ITC-CSCC), Gyeongju, Korea, Jun. 2011.
9. Yeong Jun Koh, Sang-Hwan Kim, Chul Lee, and Chang-Su Kim, "Spatial video summarization using multi-camera based background subtraction," Proc. International Technical Conference on Circuits/Systems, Computers and Communications (ITC-CSCC), Gyeongju, Korea, Jun. 2011.
10. Jin-Hwan Kim, Jae-Young Sim, and Chang-Su Kim, "Single image dehazing based on contrast enhancement," Proc. ICASSP, Prague, Czech Republic, May 2011.
11. Seong-Gyun Jeong and Chang-Su Kim, "Thumbnail generation technique manifesting image characteristic," Proc. International Workshop on Advanced Image Technology (IWAIT), Jakarta, Indonesia, Jan. 2011.
12. Soon-Young Lee, Jae-Young Sim, Chang-Su Kim, and Sang-Uk Lee, "Panoramic scene generation from multi-view images with close foreground objects," Proc. Picture Coding Symposium, Nagoya, Japan, Dec. 2010.
13. Tae-Young Chung, Sanghoon Sull, and Chang-Su Kim, "Frame loss concealment for stereoscopic video based on inter-view similarity of motion and intensity difference," Proc. ICIP, Hong Kong, Sept. 2010.
14. Jae-Kyun Ahn, Dae-Youn Lee, Minsu Ahn, James Do Kyoong Kim, and Chang-Su Kim, "Progressive compression of triangle meshes using topology-based Karhunen-Loeve Transform," Proc. ICIP, Hong Kong, Sept. 2010.
15. Chulwoo Lee, Chul Lee, and Chang-Su Kim, "Power-constrained contrast enhancement for OLED displays based on histogram equalization," Proc. ICIP, Hong Kong, Sept. 2010.
16. Dae-Young Hyun, Jun-Hee Heu, Chang-Su Kim, and Sang-Uk Lee, "Region-based backlight compensation algorithm for images and videos," Proc. ICIP, Hong Kong, Sept. 2010.
17. Dae-Youn Lee, Jae-Kyun Ahn, Chul Lee, and Chang-Su Kim, "High quality video acquisition and segmentation using alternate flashing system," Proc. 11th Pacific-Rim Conference on Multimedia (PCM), Shanghai, China, Sep. 2010.
18. Dae-Youn Lee, Jae-Kyun Ahn, Minsu Ahn, Jeong-Hwan Ahn, James Do Kyoong Kim, and Chang-Su Kim, "Topology-based energy compaction transform for spectral mesh compression," Proc. International Conference on 3D Systems and Applications, Tokyo, Japan, May, 2010.
19. Tae-Young Chung, Il-Lyong Jung, Kwanwoong Song, and Chang-Su Kim, "Virtual view interpolation and prediction structure for full parallax multi-view video," Proc. IEEE Pacific-Rim Conference on Multimedia, Bangkok, Thailand, Dec. 2009.
20. Dae-Youn Lee, Jae-Kyun Ahn, and Chang-Su Kim, "Fast background subtraction algorithm using two-level sampling and silhouette detection," Proc. ICIP, Cairo, Egypt, Nov. 2009.

21. Il-Lyong Jung, Taeyoung Chung, Kwanwoong Song, and Chang-Su Kim, "Virtual view synthesis using multi-view video sequences," Proc. ICIP, Cairo, Egypt, Nov. 2009.
22. Sang-Uk Park, Young-Yoon Lee, Jin-Woo Choi, Chang-Su Kim, and Sang-Uk Lee, "Multiple channel division for efficient distributed video coding," Proc. ICIP, Cairo, Egypt, Nov. 2009.
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