

## 一、 期刊論文

1. S. W. Sun , T. C. Mou , C. C. Fang , P. C. Chang , K. L. Hua and H. C. Shih, “Baseball Player Behavior Classification System Using Long Short-Term Memory with Multimodal Features,” *Sensors* 2019, 19, 1425, March 2019.
2. J. T. Fang, Y. R. Chang, and P. C. Chang, “Deep learning of chroma representation for cover song identification in compression domain,” in *Multidimensional Systems and Signal Processing*, vol. 29, Issue 3, pp. 887-902, July. 2018.
3. T. L. Lin, H. Y. Jiang, J. Y. Huang, and P. C. Chang, “Fast intra coding unit partition decision in H.266/FVC based on spatial features,” in *Journal of Real-Time Image Processing*, pp 1–18, July 2018.
4. C. H. Kuo, S. W. Sun, and P. C. Chang, “Behavior Recognition Using Multiple Depth Cameras Based on a Time-Variant Skeleton Vector Projection,” in *IEEE Transactions on Emerging Topics in Computational Intelligence*, vol. 1, no. 4, pp. 294-304, Aug. 2017.
5. Z. Y. Chen, and P. C. Chang, “Rough Mode Cost – based Fast Intra Coding for High-Efficiency Video Coding,” *J. Vis. Commun. Image Represent*, vol.43, pp. 77 – 88, Feb. 2017. (SCI)
6. J. T. Fang, C. T. Day, and P. C. Chang, “Deep feature learning for cover song identification,” *Multimedia Tools and Applications* (2016). doi:10.1007/s11042-016-4107-6.
7. J. T. Fang, Z. Y. Chen, C. R. Lai, and P. C. Chang, “Computational Complexity Allocation and Control for Inter-coding of High Efficiency Video Coding with Fast Coding Unit Split Decision,” *J. Vis. Commun. Image Represent.*, vol. 40, part A, pp. 34-41, Oct. 2016. (SCI)
8. J. T. Fang, K. W. Liang, Z. Y. Chen, W. Hsieh, and P. C. Chang, “Complexity Control for High-Efficiency Video Coding by Coding Layers Complexity Allocations,” *J. Electron. Imaging*, vol. 25, no. 2, 023024, Apr. 2016. (SCI)(Impact Factor: 0.672)
9. J. C. Wang, C. Y. Wang, Y. H. Chin, Y. T. Liu, E. T. Chen, and P. C. Chang, “Spectral-temporal receptive fields and MFCC balanced feature extraction for robust speaker recognition” , *Multimedia Tools and Applications*, vol. 76, Issue 3, pp. 4055 – 4068, doi:10.1007/s11042-016-3335-0, Feb. 2017. (Impact Factor: 1.346).
10. S.W. Sun, C.H. Kuo, and P. C. Chang, “People Tracking in an Environment with Multiple Depth Cameras: A Skeleton-Based Pairwise Trajectory Matching Scheme” , *Journal of Visual Communication and Image Representation (JVCIR)*, vol. 35, pp. 36 – 54, Feb. 2016.
11. Z. Y. Chen, J. T. Fang, Y. C. Liu, and P. C. Chang, “Machine Learning – based Fast Intra Coding Unit Depth Decision for High Efficiency Video Coding,” *Journal of Information Science and Engineering (JISE)*, vol. 32, no. 5, pp. 1289-1299, Sep. 2016. (SCI)
12. J. T. Fang, Z. Y. Chen, C. C. Chan, and P. C. Chang, “Adaptive Rate Control Mechanism in H.264/AVC for Scene Changes,” *IEICE Trans. Fundamentals*, vol. E97-A, no. 12, pp. 2625-2632, Dec. 2014. (SCI)(Impact Factor: 0.231)
13. Z. Y. Chen, J. T. Fang, C. S. Chiang, and P. C. Chang, “Computation Reduction in High-Efficiency Video Coding Based on the Similarity of Transform Unit Blocks,” *J. Electron. Imaging*, vol. 23, no. 6, 061105, Aug. 2014. (SCI)(Impact Factor: 0.672)

14. T. M. Chang, C. B. Hsieh, and P. C. Chang, "An Enhanced Direct Chord Transformation for Music Retrieval in the AAC Domain with Window Switching," *Multimedia Tools and Applications*, vol. 74, no. 18, pp.7921-7942, Sep.2015. (SCI)(EI)(Impact Factor: 1.014)
15. Z. Y. Chen, J. T. Fang, T. L. Liao, and P. C. Chang, "Efficient PU Mode Decision and Motion Estimation for H.264/AVC to HEVC Transcoder," *Signal & Image Processing: An International Journal (SIPIJ)*, vol. 5, no. 2, pp. 81-93, Apr. 2014. (SCI)
16. R. J. Wang, J. T. Fang, Y. T. Jiang, and P. C. Chang, "Quantization- Distortion Models for Interlayer Predictions in H.264/SVC Spatial Scalability," *IEEE Transaction on Broadcasting*, vol. 60, no. 2, pp. 413-419, Mar.2014. (SCI)(Impact Factor: 2.087)
17. R. J. Wang, Y. T. Yang, P. C. Chang, "Content-Based Image Retrieval Using H.264 Intra Coding Features," *Journal of Visual Communication and Image Representation*, vol. 25, no. 5, pp. 963-969, July 2014. (SCI)(Impact Factor: 1.195)
18. R. J. Wang, C. W. Huang, and P. C. Chang, "Adaptive Downsampling Video Coding with Spatially Scalable Rate-Distortion Modeling," *IEEE Transaction on Circuits and Systems for Video Technology*, vol. 24, no. 11, pp. 1957-1968, Oct. 2014. (SCI)(Impact Factor: 1.819)
19. T. M. Chang, Y. M. Shiu, and P. C. Chang, "A Low-complexity Down-mixing Structure on Quadraphonic Headsets for Surround Audio," *IEICE Transactions on Fundamentals of Electronics Communications and Computer Sciences*, vol. E96-A, no.7, pp. 1526-1533, July 2013. (SCI)(EI)(Impact Factor: 0.238)
20. M. C. Chien, R. J. Wang, C. H. Chiu, and P. C. Chang, "Quality Driven Frame Rate Optimization for Rate Constrained Video Encoding," *IEEE Transactions on Broadcasting*, vol. 58, no. 2, pp. 200-208, June 2012. (SCI)(EI)(Impact Factor: 1.455)
21. M. C. Chien and P. C. Chang, "Optimal Model-Based Complexity Control for H.264 Video Encoding," *IET Image Processing*, vol. 6, no. 1, pp. 60-71, Feb. 2012. (SCI)(EI)(Impact Factor: 0.897)
22. M. C. Chien and P. C. Chang, "Real-Time Complexity Control for H.264 Video Encoding by Coding Gain Maximization," *IEICE Transactions on Communications*, vol. E94-B, no. 7, pp. 2181-2184, July 2011. (SCI)(EI)(Impact Factor: 0.301)
23. H. C. Chung, Z. Y. Chen, and P. C. Chang, "Low Power Architecture Design and Hardware Implementations of Deblocking Filter in H.264/AVC," *IEEE Transactions on Consumer Electronics*, vol. 57, no. 2, pp. 713-719, May 2011. (SCI)(EI)(Impact Factor: 1.057)
24. C. C. Lee, Y. J. Yu, and P. C. Chang, "Adaptive Significance Classification Mechanism for Streaming Video over Differentiated Service Networks," *Journal of Computers*, vol. 21, no. 2, pp. 3-13, July 2010.
25. J. R. Chen, S. W. Sun, C. S. Lu, and P. C. Chang, "Video JET: Packet Loss-Resilient Video Joint Encryption and Transmission based on Media-Hash-Embedded Residual Data," *Multimedia Tools and Applications*, vol. 44, no. 2, pp. 249-278, July 2009. (SCI)(EI)(Impact Factor: 0.914)
26. S. W. Sun, C. S. Lu, and P. C. Chang, "AACs-Compatible Multimedia Joint Encryption

- and Fingerprinting: Security Issues and Some Solutions,” *Signal Processing: Image Communication*, vol. 23, no. 3, pp. 179-193, Mar. 2008. (SCI)(EI)(Impact Factor: 1.331)
27. C. C. Lee, P. C. Chang, and S. J. Chuang, “Unequal Priority Arrangement for Delivering Streaming Videos over Differentiated Service Networks,” *Lecture Notes in Computer Science (LNCS)*, vol. 4319, pp. 812-821, Dec. 2006.
  28. Y. T. Chen, D. C. Tseng, and P. C. Chang, “Wavelet-based Image Compression with Polygon-shaped Region of Interest,” *Lecture Notes in Computer Science (LNCS)*, vol. 4319, pp. 878-887, Dec. 2006.
  29. C. C. Lee and P. C. Chang, “Delivery of Pre-Stored Videos for Mobile Clients with Insufficient Playback Buffer and Bounded Delay Guarantee,” *Journal of The Chinese Institute of Engineers*, vol. 29, no. 6, pp. 1081-1090, Oct. 2006.(SCI)(EI)(96年度中國工程師學會石延平教授最佳論文獎) (Impact Factor:0.219)
  30. C. S. Lu, S. W. Sun, C. Y. Hsu, and P. C. Chang, “Media Hash-dependent Image Watermarking Resilient Against Both Geometric Attacks and Estimation Attacks Based on False Positive-Oriented Detection,” in *IEEE Trans. on Multimedia*, vol. 8, no. 4, pp. 668-685, Aug. 2006. (SCI)(EI)(Impact Factor:1.822)
  31. S. F. Huang, P. C. Chang, and H. K. Wu, “Adaptive Voice Smoothing with Optimal E-model Method for VoIP Services,” *IEICE Trans. Commun.*, vol. E89-B, No. 6, pp. 1862-1868, July 2006. (SCI)(EI)(Impact Factor:0.359)
  32. T. H. Lee, J. T. Wang, J. B. Chen, and P. C. Chang, “An Error Resilient Scheme for H.264 Video Coding Based on Distortion Estimated Mode Decision and Nearest Neighbor Error Concealment,” *Journal of Zhejiang University Science*, (Suppl. I), pp. 34-40, July 2006. (EI)
  33. C. C. Lee and P. C. Chang, “Integrated Traffic Modeling and Frame Skipping for Pre-stored Streaming Videos over Cellular Networks,” *Journal of High Speed Networks*, vol. 15, no. 4, pp. 329-340, 2006. (SCI)(EI)(Impact Factor:0.379)
  34. S. F. Huang, H. K. Wu, and P. C. Chang, “Adaptive Voice Smoothing with Optimal Playback Delay Based on the ITU-T E-Model,” *Lecture Notes in Computer Science*, Springer-Verlag GmbH, vol. 3824, pp. 805-815, Dec. 2005. (SCI)
  35. S. F. Huang, H. K. Wu, and P. C. Chang, “Adaptive Voice Smoother with Optimal Playback Delay for New Generation VoIP Services,” *Lecture Notes in Computer Science*, Springer-Verlag GmbH, vol. 3824, pp. 1006-1015, Dec. 2005. (SCI)
  36. S. F. Huang, H. K. Wu, and P. C. Chang, “Adaptive VoIP Smoothing of Pareto Traffic Based on Optimal E-Model Quality,” *Lecture Notes in Computer Science*, Springer-Verlag GmbH, vol. 3768, pp. 747-758, Nov. 2005. (SCI)
  37. C. C. Lee and P. C. Chang, “Analyzing and Absorbing Cross-Layer Header Overhead of Video Data from End-to-End Viewpoint,” *IEICE Trans. On Communications*, vol. E88-B, no. 11, pp. 4360-4367, Nov. 2005. (SCI) (EI) (Impact Factor:0.359)
  38. C. C. Lee and P. C. Chang, “A Novel Long-Span Traffic Predictor for Real-Time VBR Videos via  $p$ -Domain Rate Model,” *IEEE Communications Letters*, vol. 9, no. 3, pp. 279-281, March 2005. (SCI) (EI) (Impact Factor:1.140)
  39. T. T. Lu and P. C. Chang, “Significant Bit-Plane Clustering Technique for JPEG2000

- Image Coding,” IEE Electronics Letters, vol. 40, no. 17, pp. 1056-1058, Aug. 2004. (SCI) (EI) (Impact Factor:0.97)
40. S. W. Sun and P. C. Chang, “Video Watermarking Synchronization Based on Profile Statistics,” IEEE Aerospace and Electronic Systems Magazine, vol. 19, no. 5, pp. 21-25, May 2004. (SCI) (EI) (Impact Factor:0.374)
  41. T. T. Lu and P. C. Chang, “Selective Block-Wise Reordering Technique for Very Low Bit-Rate Wavelet Video Coding,” IEICE Trans. on Fundamentals of Electronics, Communications and Computer Sciences, vol. E87-A, no. 4, pp. 920-928, Apr. 2004. (SCI) (EI) (Impact Factor:0.366)
  42. J. T. Wang and P. C. Chang, “Error Prevention and Concealment for Scalable Video Coding with Dual-priority Transmission,” Journal of Visual Communication and Image Representation, vol. 14, Issue 4, pp. 458-473, Dec. 2003. (SCI) (EI) (Impact Factor:1.326)
  43. S. W. Sun, T. T. Lu, and P. C. Chang, “Image Watermarking Synchronization by Significant MSB Plane Matching,” in Lecture Notes in Computer Science 2532, pp. 468-476, Dec. 2002. (SCI)
  44. C. C. Lee, J. T. Wang, C. F. Wang, and P. C. Chang, “MPEG-4 video quality control over IP networks,” TL Technical Journal, vol. 32, pp. 759-776, Dec. 2001.
  45. P. C. Chang, J. H. Lin, T. H. Wang, H. M. Yu, C.M. Huang, and D.T. Chen, “Implementation of MP3 portable Player on DSP Chip,” Journal of Technology, vol. 16, No. 1, pp. 59-66, March 2001.
  46. T. H. Lee and P. C. Chang, “Error Robust H.263 Video Coding with Video Segment Regulation and Precise Error Tracking,” IEICE Trans. on Communications, vol. E84-B, No. 2, pp. 317-324, Feb. 2001. (SCI)(Impact Factor:0.359)
  47. P. C. Chang, C. S. Yu, and T. H. Lee, “Hybrid LMS-MMSE Inverse Halftoning Technique,” IEEE Trans. On Image Processing, vol. 10, No. 1, pp. 95-103, Jan. 2001 (SCI) (EI)(Impact Factor:2.848)
  48. T. H. Lee, H. H. Hsu, and P. C. Chang, “Restart Marker Regulation Technique for Progressive JPEG Image Coding in Mobile Communications,” IEEE Communications Letters, vol. 4, No. 12, pp. 411-413, Dec. 2000. (SCI) (EI)(Impact Factor:1.140)
  49. P. C. Chang and T. H. Lee, “Precise and Fast Error Tracking for Error-Resilient Transmission of H.263 Video,” IEEE Trans. on Circuits and Systems for Video Technology, vol. 10, No. 4, pp. 600-607, June 2000. (SCI) (EI)(Impact Factor:2.548)
  50. P. C. Chang, J. T. Wang, and Y. C. Lin, “Adaptive Video Quality Control based on Connection Status over ATM Networks,” IEICE Trans. on Communications, vol. E82-B, No. 9, pp. 1388-1396, Sep. 1999. (SCI) (EI)
  51. P. C. Chang and T. T. Lu, “A Scalable Video Compression Technique based on Wavelet Transform and MPEG Coding,” IEEE Trans. on Consumer Electronics, vol. 45, No. 3, pp. 788-793, Aug. 1999. (SCI) (EI)(Impact Factor:0.942)
  52. J. T. Wang and P. C. Chang, “Error Propagation Prevention Technique for Real-time Video Transmission over ATM Networks,” IEEE Trans. on Circuits and Systems for Video Technology, vol. 9, No. 3, pp. 513-523, April 1999. (SCI) (EI)(Impact Factor:2.548)
  53. H. Chang and P. C. Chang, “Adaptive Classification and Subsampling for Block

- Transform Image Coding,” *Journal of the Chinese Institute of Electrical Engineering*, vol. 4, No. 2, pp. 165-172, May 1997. (EI)
54. H. S. Wang and P. C. Chang, “On Verifying the First-Order Markovian Assumption for a Rayleigh Fading Channel Model,” *IEEE Trans. on Vehicular Technology*, vol. 45, No. 2, pp. 353-357, May 1996. (SCI) (EI)(Impact Factor:1.488)
55. R. S. Cahn, P. C. Chang, P. Kermani, and A. Kershenbaum, “INTREPID: an integrated network tool for routing, evaluation of performance, and interactive design,” *IEEE Communications Magazine*, vol. 29, No.7, pp. 40-47, July 1991. (SCI) (EI)(Impact Factor:2.446)
56. P. C. Chang, R. M. Gray, and J. May, “Fourier Transform Vector Quantization for Speech Coding,” *IEEE Trans. on Communications*, vol. COM-35, No. 10, pp. 1059-1068, Oct. 1987. (SCI) (EI)
57. P. C. Chang and R. M. Gray, “Gradient Algorithm for Designing Predictive Vector Quantizers,” *IEEE Trans. on Acoustics, Speech, and Signal Processing*, vol. ASSP-34, No. 4, pp. 679-690, Aug. 1986. (SCI)

## 二、 研討會論文

1. Y. W. Chuang, C. H. Kuo, S. W. Sun, P. C. Chang (2019). Driver behavior recognition using recurrent neural network in multiple depth cameras environment. *Electronic Imaging*, 2019(15), 56-1.
2. J. X. Xu, T. C. Lin, T. C. Yu, T. C. Tai, P. C. Chang, “Acoustic Scene Classification Using Reduced MobileNet Architecture,” in 2018 IEEE International Symposium on Multimedia (ISM), December. 2018, pp. 267-270
3. Y. S. Lan , S. W. Sun , H. C. Shih , K. L. Hua, P. C. Chang, “Machine-Learning Based Fitness Behavior Recognition from Camera and Sensor Modalities,” in 2018 IEEE International Conference on Artificial Intelligence and Virtual Reality (AIVR), December. 2018, pp. 249-250
4. C. F. Chiu, C. H. Kuo, P. C. Chang, “Smoking Action Recognition Based on Spatial-Temporal Convolutional Neural Networks,” in Proceedings, APSIPA Annual Summit and Conference ,Hawaii, November. 2018
5. Y. S. Lan , S. W. Sun , H. C. Shih , K. L. Hua, P. C. Chang, “O-Shooting: An Orientation-based Basketball Shooting Mixed Reality Game Based on Environment 3D Scanning and Object Positioning,” in 2018 IEEE 7th Global Conference on Consumer Electronics (GCCE), October. 2018, pp. 678-679
6. C. J. Lee, Y. H. Tseng, P. C. Chang, “Audio-based early warning system of vehicle approaching event for improving pedestrian's safety,” in 2018 IEEE 8th International Conference on Consumer Electronics-Berlin (ICCE-Berlin), September. 2018, pp. 1-3
7. J. T. Fang, Y. L. Tu, L. P. Yu, P. C. Chang, “Real-time Complexity Control for High Efficiency Video Coding,” in 2018 IEEE International Conference on Information Communication and Signal Processing (ICICSP), September. 2018, pp. 85-89
8. T. L. Lin, H. Y. Jiang, J. Y. Huang, P. C. Chang, “Fast Binary Tree Partition Decision in H. 266/FVC Intra Coding,” in 2018 IEEE International Conference on Consumer Electronics-

- Taiwan (ICCE-TW), May. 2018, pp. 1-2.
9. Y. C. Wu, P. C. Chang, C. Y. Wang and J. C. Wang, "Asymmetric Kernel Convolutional Neural Network for acoustic scenes classification," in 2017 IEEE International Symposium on Consumer Electronics (ISCE), Kuala Lumpur, Malaysia, Nov. 2017.
  10. J. Y. Huang, M. F. Lin, and P. C. Chang, "Transcoding or Not? -- A Study of Quantization Configuration for H.264-to-HEVC Transcoding," in 2017 IEEE 6th Global Conference on Consumer Electronics (GCCE 2017), Nagoya, Japan, Oct. 2017.
  11. Y. W. Chuang, S. W. Sun, and P. C. Chang, "Driver Posture Recognition for 360-Degree Holographic Media Browsing," in 2017 IEEE 10th International Conference on Ubi-media Computing and Workshops (Ubi-Media), Pattaya, Thailand, Aug. 2017, pp. 1-6.
  12. N. R. Li, K. W. Liang, Z. Y. Chen, H. Y. Jiang, J. T. Fang, and P. C. Chang, "A Fast TU Mode Decision Algorithm Based on Residual Difference for HEVC," in Electronic Imaging, Jan. 2017, pp. 5-9.
  13. T. H. Huang, and P. C. Chang, "Large-Scale Cover Song Retrieval System Using Machine Learning Approaches," in Proc. of the 12th IEEE International Workshop on Multimedia Information Processing and Retrieval (IEEE-MIPR 2016), California, USA, Dec. 2016.
  14. H. K. Huang, C. F. Chiu, C. H. Kuo, Y. C. Wu, Narisa N. Y. Chu, and P. C. Chang, "Mixture of Deep CNN-based Ensemble Model for Image Retrieval," in Proc. of 2016 IEEE 5th Global Conference on Consumer Electronics (GCCE), Kyoto, Japan, Oct. 2016, pp.165-166.
  15. S. Y. Peng, Y. C. Wu, and P. C. Chang, "High Dynamic Range Video Streams Based on Inexpensive Image Sensors," in Proc. of 2016 IEEE International Conference on Consumer Electronics-Berlin (ICCE-Berlin), Berlin, Germany, Sept. 2016, pp.245-248.
  16. W. Y. Kuo, C. H. Kuo, S. W. Sun, P. C. Chang, Y. T. Chen, and W. H. Cheng, "Machine learning-based behavior recognition system for a basketball player using multiple Kinect cameras," in Proc. of 2016 IEEE International Conference on Multimedia & Expo Workshops (ICMEW), Seattle, USA, July. 2016, p.1.
  17. J. T. Fang, Y. R. Chang, and P. C. Chang, "Fast Cover Song Retrieval in Advanced Audio Coding Domain based on Deep Learning Technique," in Proc. of IEEE Data Compression Conference (DCC), Snowbird, Utah, USA, March. 2016, p.591.
  18. C. H. Kuo, Y. H. Chuo, and P. C. Chang, "Using Deep Convolutional Neural Networks for Image Retrieval," in Proc. of SPIE Conf. Electronic Imaging 2016 (EI 2016), San Francisco, USA, Feb. 2016, DOI: 10.2352/ISSN.2470-1173.2016.2.VIPC-231.
  19. J. T. Fang, C. H. Kuo, C. R. Lai and P. C. Chang, "Fast CU Algorithm and Complexity Control for HEVC," in Proc. of IEEE 4th Global conference on Consumer Electronics (GCCE), Osaka, Japan, Oct. 2015, pp. 300-301.
  20. K. W. Liang, S. R. Hsu, and P. C. Chang, "Content Based Image Retrieval Utilizing HEVC Intra Coding Features," in Proc. of IEEE 4th Global conference on Consumer Electronic (GCCE), Osaka, Japan, Oct. 2015, pp. 302-303.
  21. Y. R. Tsai, Z. Y. Chen, and P. C. Chang, "Hadamard Cost-based Fast CU Depth Decision Algorithm for HEVC Intra Coding," in Proc. of IPPR Conf. Computer Vision, Graphics, and Image Processing (CVGIP), Yilan, Taiwan, Aug. 2015, Session D3-5.

22. Y. C. Liu, Z. Y. Chen, J. T. Fang, and P. C. Chang, SVM-Based Fast Intra CU Depth Decision for HEVC, in Proc. of IEEE Data Compression Conference (DCC), Snowbird, USA, Apr. 2015, p. 458.
23. K. W. Liang, Y. C. Chen, Z. Y. Chen, and P. C. Chang, Video Copy Detection Based on HEVC Intra Coding Features, in Proc. of IEEE International Conference on Consumer Electronics (ICCE), Las Vegas, USA, Jan. 2015, pp. 108-111.
24. Jia-Ching Wang, Chang-Hong Lin, En-Ting Cheng, and Po-Chi Chang, "Spectral-temporal receptive fields and MFCC balanced feature extraction for noisy speech recognition," in Proc. of Asia-Pacific Signal Information Processing Association Annual Summit and Conference (APSIPA ASC), Siem Reap, city of Angkor Wat, Cambodia, Dec. 2014, pp. 9-12.
25. C. H. Kuo, S. W. Sun, and P. C. Chang, "A Multi-Camera People Tracking Scheme based on A Skeleton-Based Pairwise Curve Matching," in IPPR Conf. Computer Vision, Graphics, and Image Processing (CVGIP), Kaohsiung, Taiwan, Aug. 2014, Session F1-4.
26. Y. T. Chung, T. M. Chang, P. C. Chang, "Classical Music Retrieval Based on Accumulated Path Similarity in AAC Compression Domain," in Proc. of the 6th International Conference on Internet Multimedia Computing and Service (ICIMCS), Xiamen China, July. 2014, pp. 189-192.
27. J. T. Fang, Z. Y. Chen, T. L. Liao, and P. C. Chang, "A Fast PU Mode Decision Algorithm for H.264/AVC to HEVC Transcoding," in Proc. Fourth International conference on Computer Science & Information Technology (CCSIT), Sydney, Australia, Feb. 2014, vol. 4, no. 2, pp. 215-225.
28. Z. Y. Chen, H. Y. Chen, and P. C. Chang, "An Efficient Fast CU Depth and PU Mode Decision Algorithm for HEVC," in Proc. the 3rd International Conference on Multimedia Technology (ICMT), Guangzhou, China, Nov. 2013, Lecture Notes in Electrical Engineering vol. 278, 2014, pp. 153-163. (Best Paper)
29. Z. Y. Chen, C. T. Tseng, and P. C. Chang, "Fast Inter Prediction for H.264 to HEVC Transcoding," in Proc. the 3rd International Conference on Multimedia Technology (ICMT), Guangzhou, China, Nov. 2013, Atlantis Press, pp. 1301-1308.
30. T. M. Chang, E. T. Chen, C. B. Hsieh, and P. C. Chang, "Cover Song Identification with Direct Chroma Feature Extraction From AAC Files," in Proc. of GCCE, Tokyo, Japan, Oct. 2013, pp. 55-56.
31. C. H. Kuo, S. W. Sun, and P. C. Chang, "A Skeleton-based Pairwise Curve Matching Scheme for People Tracking in a Multi-Camera Environment," Asia-Pacific Signal & Information Processing Association Annual Summit and Conference (APSIPA ASC), Kaohsiung, Taiwan, 2013
32. C. S. Chiang, Z. Y. Chen, and P. C. Chang, "A Fast TU Mode Decision Algorithm Based on the Gradient of Residual and Zero-block Detection for HEVC," in IPPR Conf. Computer Vision, Graphics, and Image Processing (CVGIP), Yilan, Taiwan, Aug. 2013, Session C5-5.
33. J. T. Fang, C. C. Chan, S. R. Shiu, and P. C. Chang, "Robust rate control mechanism against scene change for H.264/AVC," IEEE International Symposium on Consumer

- Electronics(ISCE), Hsinchu, Taiwan, June 3-6, 2013. pp. 241-242.
34. R. J. Wang, C. W. Huang, and P. C. Chang, "Adaptive coding configuration for multi-resolution video coding," IEEE International Symposium on Consumer Electronics(ISCE), Hsinchu, Taiwan, June 3-6, 2013, pp.239-240.
  35. Y. C. Lu, Z. Y. Chen, and P. C. Chang, "Low power multi-lane MIPI CSI-2 receiver design and hardware implementations," IEEE International Symposium on Consumer Electronics(ISCE), Hsinchu, Taiwan, June 3-6, 2013, pp.199-200.
  36. M. Y. Liu, Z. Y. Chen, and P. C. Chang, "Enhanced Intra Mode Bit Skip Algorithm for H.264/AVC," in Proc. of National Symposium on Telecommunications (NST), Changhua, Taiwan, Nov. 2012, no. CS-4.
  37. K. L. Huang, T. M. Chang, and P. C. Chang, "An object-based audio rendering system using spatial parameters," in Proc. of GCCE, Tokyo, Japan, Oct. 2012, pp. 687-688.
  38. Y. M. Shiu, T. M. Chang, and P. C. Chang, "Realization of Surround Audio by a Quadraphonic Headset," in Proc. ICCE, Las Vegas, USA, Jan. 2012, pp. 13-14.
  39. R. J. Wang, Y. T. Jiang, J. T. Fang, and P. C. Chang, "Quality Estimation for H.264/SVC Inter-layer Residual Prediction in Spatial Scalability," Pacific-Rim Symp. on Image and Video Technology (PSIVT), Nov. 2011, pp. 252-261.
  40. Y. M. Shiu, T. M. Chang, and P. C. Chang, "Surround Audio Enhanced Four-Channel Headphones," National Symp. on Telecommunications (NST), Taipei, Taiwan, Nov. 2011, pp. 702-705.
  41. Z. Y. Chen, P. C. Hsu, and P. C. Chang, "High Dynamic Range Imaging Fusion Based on Non-Linear Color Compensation," in Proc. the Fifth International Workshop on Image Media Quality and its Applications (IMQA), Kyoto, Japan, Oct. 2011, pp. 107-111.
  42. R. J. Wang, C. W. Huang, and P. C. Chang, "An MSE-Based Quality Metric for Optimal Video Post-Scaling," in Proc. the Fifth International Workshop on Image Media Quality and its Applications (IMQA), Kyoto, Japan, Oct. 2011, pp. 37-42.
  43. H. C. Chung, Z. Y. Chen, and P. C. Chang, "Low Power Architecture Design and Hardware Implementations of Deblocking Filter in H.264/AVC," in Proc. ICCE, Las Vegas, USA, Jan. 2011, pp. 405-406. (Third Best Paper in Television Technology category)
  44. R. Y. Tong, and P. C. Chang, "Low Complexity Decoding in Parametric Stereo Audio Coding Scheme," in Proc. of Nat. Symposium on Telecommunications (NST), Taipei, Taiwan, Dec. 2010, pp. 292-296.
  45. Y. C. Li, Z. Y. Chen, and P. C. Chang, "H.264/SVC Rate Allocation based on Graceful Degradation of Subjective Quality in Frame Rate Switching," in Proc. of National Symp. on Telecommunications (NST), Taipei, Taiwan, Dec. 2010, pp. 358-362.
  46. K. L. Huang, Y. T. Cheng, and P. C. Chang, "An Integrated Audio-Video Tracking System with a PTZ Video Camera and a 3-D Microphone Array," in Proc. 2010 International Security Technology and Management Conference (ISTAM), Taipei, Taiwan, Sep. 2010, pp. 151-154.
  47. K. W. Liang, J. T. Fang, L. C. Chiang, and P. C. Chang, "H.264 Rate Control Based on the Target Buffer Level and the Target Bits Allocation," in Proc. IPPR Conf. Computer Vision, Graphics, and Image Processing (CVGIP), Session A-4, No. 5, Kaohsiung, Taiwan, Aug.



2010.

48. Z. Y. Chen, J. W. Syu, and P. C. Chang, "Fast Inter-Layer Motion Estimation Algorithm on Spatial Scalability in H.264/AVC Scalable Extension," in Proc. IEEE International Conference on Multimedia & Expo, Singapore, July. 2010, pp. 442-446.
49. R. J. Wang, M. C. Chien, and P. C. Chang, "Adaptive down-sampling video coding," in Proc. SPIE Conf. Electronic Imaging 2010, vol. 7542, San Jose, CA, Jan. 2010, pp. 1-8.
50. Y. L. Yang, R. J. Wang, and P. C. Chang, "Best-View Surveillance System with object detection and tracking based on H.264 Coding Information," in Proc. of Nat. Symp. on Telecommunications (NST), Taipei, Taiwan, Dec. 2009, pp. 696-699.
51. T. C. Li, and P. C. Chang, "Spatial characteristic based scalable audio coding structure," in Proc. of National Symp. on Telecommunications (NST), Taipei, Taiwan, Dec. 2009, pp. 452-456.
52. J. T. Wang, K. W. Liang, S. F. Chang, and P. C. Chang, "Super-Resolution Image with Estimated High Frequency Compensated Algorithm," The 9th IEEE International Symposium on Communications and Information Technologies (ISCIT 2009), Incheon, Korea, Sep. 2009, pp. 175-180.
53. Z. Y. Chen, T. H. Lee, and P. C. Chang, "Adaptive Lossy Error Protection Architecture in H.264 Video Transmission," The 9th IEEE International Symposium on Communications and Information Technologies (ISCIT 2009), Incheon, Korea, Sep. 2009, pp. 775-778.
54. C. C. Lee, Y. J. Yu, and P. C. Chang, "Adaptable Packet Significance Determination Mechanism for H.264 Videos over IP Dual Stack Networks," ChinaCom2009-OCN, Xi'an, China, Aug. 2009.
55. Y. C. Wang, Z. Y. Chen, and P. C. Chang, "Fast Spatial Layer Mode Decision Based on Temporal Levels in H.264/AVC Scalable Extension," in Proc. IPPR Conf. Computer Vision, Graphics, and Image Processing (CVGIP), Nantou, Taiwan, Aug. 2009, Session A3, No. 2.
56. Y. S. Cheng, Z. Y. Chen, and P. C. Chang, "An H.264 Spatio-temporal Hierarchical Fast Motion Estimation Algorithm for High-Definition Video" IEEE International Symposium on Circuits and Systems(ISCAS), Taipei, Taiwan, May. 2009, pp. 880-883.
57. M. C. Chien, J. Y. Huang, and P. C. Chang, "Complexity Control for H.264 Video Encoding over Power-Scalable Embedded Systems," IEEE International Symposium on Consumer Electronics(ISCE), Kyoto, Japan, May. 2009, pp. 221-224.
58. Y. J. Yu, C. C. Lee, and P. C. Chang, "A Robust Priority Assignment Mechanism for Video Data over Managed IP Networks," in Proc. 9th Pacific Rim Conference on Multimedia, Tainan, Taiwan, Dec. 2008, pp. 790-793.
59. W. S. Lin, T. M. Chang, and P. C. Chang, "A Power Saving Class-D Amplifier With Variable Switching Frequency For Voice Playback Systems," in Proc. Workshop on Consumer Electronics (WCE), Taipei, Taiwan, Dec. 2008, pp. 732-736.
60. J. T. Wang, S. F. Chang, K. W. Liang, and P. C. Chang, "High Frequency Compensated Super-Resolution Algorithm," in Proc. Workshop on Consumer Electronics (WCE), Taipei, Taiwan, Dec. 2008, pp. 278-283.
61. M. C. Chien, Z. Y. Chen, and P. C. Chang, "Coding-Gain-Based Complexity Control For

- H.264 Video Encoder,” IEEE International Conference on Image Processing (ICIP), San Diego, Oct. 2008, pp. 2136-2139.
62. J. T. Wang, K. W. Liang, N. N. Chen, and P. C. Chang, “Video Noise Reduction Using H.264 Multi-Frame Trajectory,” in Proc. IPPR Conf. Computer Vision, Graphics, and Image Processing (CVGIP), Yilan, Taiwan, Aug. 2008, Session B-4, No. 4.
  63. W. D. Hong, T. H. Lee, and P. C. Chang, “Real-Time Foreground Segmentation for the Moving Camera Based on H.264 Video Coding Information,” in IEEE International Conference on Future Generation Communication and Networking, Jeju-Island, Korea, Dec. 2007, pp. 384-389.
  64. P. C. Chang and T. L. Wu, “Region Weighted Satellite Super-resolution Technology,” in Proc. National Symposium on Telecommunications (NST), Taipei, Taiwan, Nov. 2007, pp. 199-203.
  65. L. F. Huang, and P. C. Chang, “AMR to G.729A Speech Transcoding With Fast Codebook Search,” in Proc. Workshop on Consumer Electronics and Signal Processing (WCESP), Taichung, Taiwan, Nov. 2007, pp. 189-193.
  66. S. W. Sun, C. S. Lu, and P. C. Chang, “Joint Multimedia Fingerprinting and Encryption: Security Issues and Some Solutions,” in IEEE International Conference on Multimedia & Expo, Beijing, China, July 2007, pp. 1531 - 1534.
  67. C. C. Lee, P. C. Chang, and Y. A. Tsai, “The Study of Transmission Performance for Integrated TFRC and ARQ over WLANs,” in Proc. The Fourth IASTED Asian Conference, Phuket, Thailand, April. 2007, pp. 153-157.
  68. S. W. Sun, C. S. Lu, and P. C. Chang, “Biometric Template Protection: A Key-Mixed Template Approach,” International Conference on Consumer Electronics, Las Vegas, U. S. A., Jan. 2007, session 3. 1- 3. (EI)
  69. J. Y. Wang, M. S. Lai, K. W. Liang, and P. C. Chang, “Adaptive Wavelet Quantization Index Modulation Technique for Audio Watermarking,” International Computer Symposium(ICS) on Multimedia Technologies, Taipei, Taiwan, Dec. 2006.
  70. M. Y. Lin, T. H. Lee, and P. C. Chang, “Foreground Detection in Multi-Camera Surveillance System,” in 19th IPPR Conference on Computer Vision, Graphics and Image Processing, Taiwan, Aug. 2006, pp. 1010- 1016.
  71. S. F. Huang, H. K. Wu, P. C. Chang, “Adaptive Voice Smoother with Lagrangian Multiplier Method for VoIP Service,” WSEAS Proceedings of IMCAS, ROCOM, MUSP, ACOS 2006.
  72. S. W. Sun, J. R. Chen, C. S. Lu, P. C. Chang, and K. C. Fan, “Motion- Embedded Residual Error for Packet Loss Recovery of Video Transmission and Encryption,” in Proc. SPIE Conf. Electronic Imaging 2006, San Jose, CA, Jan. 2006, vol. 6077, pp. 452- 465. (EI)
  73. C. C. Lee, W. H. Chu, and P. C. Chang, “Formulating and Evaluating Impacts of IPv6 Header Overhead for Videos over Wireless Networks,” in NCS2005, session best-3, Tainan, Taiwan, Dec. 2005.
  74. Y. T. Chen, D. C. Tseng, and P. C. Chang, “Wavelet-based Medical Image Compression with Adaptive Prediction,” in Proc. of 2005 International Symposium on International Symposium on Intelligent Signal Processing and Communication Systems 2005

- (ISPACS2005), Hong Kong, Dec. 2005, pp. 825- 828. (EI)
75. P. C. Chang, T. H. Wu, and K. Y. Ho, "High Quality Switched Wavelet Packet and Discrete Cosine Transform Audio Coding Technique," in Proc. of 2005 International Symposium on International Symposium on Intelligent Signal Processing and Communication Systems 2005 (ISPACS2005), Hong Kong, Dec. 2005, pp. 749- 752. (EI)
  76. C. H. Chang, C. C. Lee, and P. C. Chang, "Adaptive Online/Offline Smoothing for Streaming Videos over Best-Effort Networks," in Proc. WCE2005, Yunlin, Taiwan, Nov. 2005, session 09- 05.
  77. P. C. Su, and P. C. Chang, "Pitch-Scale Modification Based on Formant Extraction from Resampled Speech," in Proc. WCE2005, Yunlin, Taiwan, Nov. 2005, session 06- 05.
  78. K. W. Liang, T. T. Lu, and P. C. Chang, "Image Authentication System based on Eigenvalue Decomposition," in Proc. IPPR Conf. on CVGIP 2005, Taipei, Taiwan, Aug. 2005, pp. 1331- 1336.
  79. P. C. Chang, T. H. Lee, J. B. Chen, and M. K. Tsai, "Encoder-originated Error Resilient Schemes for H.264 Video Coding," in Proc. IPPR Conf. on CVGIP 2005, Taipei, Taiwan, Aug. 2005, pp. 406- 412. (invited paper).
  80. S. W. Sun, C. S. Lu, and P. C. Chang, "Error-resilient Video Transmission and Encryption," in Proc. IPPR Conf. on CVGIP 2005, Taipei, Taiwan, Aug. 2005, pp. 287- 294.
  81. S. W. Sun, C. S. Lu, C. Y. Hsu, and P. C. Chang, "Media Hash-dependent Image Watermarking Resilient Against Both Geometric Attacks and Estimation Attacks Based on False Positive-Oriented Detection," in Proc. International Conference on Digital Archive Technologies, Taipei, Taiwan, Jun. 2005. (EI)
  82. T. H. Lee, M. K. Tsai, J. Wang, P. C. Chang, "Synchronous Backward Error Tracking Algorithm for H.264 Video Coding," in Proc. SPIE conference, Image and Video Communications and Processing 2005, Jan. 2005, vol. 5685, pp. 195- 202. (EI)
  83. C. S. Lu, S. W. Sun, and P. C. Chang, "Robust Mesh-based Content-Dependent Image Watermarking with Resistance to Both Geometric Attack and Estimation Attack," in Proc. IS&T/SPIE International Symposium on Electronic Imaging: Security, Steganography, and Watermarking of Multimedia Contents VII (EI120), San Jose, California, 2005.
  84. C. C. Lee, P. C. Chang, and K. W. Ho, "Intelligent On-line Video Traffic Smoothing with Long-Span Traffic Prediction," in Proc. WCE2004, Hsinchu, Taiwan, Nov. 2004.
  85. Y. H. Hsiao, T. H. Lee, and P. C. Chang, "Short/Long-Term Motion Vector Prediction in Multi-Frame Video Coding System," in Proc. IEEE International Conference on Image Processing, Singapore, Oct. 2004, pp. 1449-1452. (EI)
  86. C. S. Lu, S. W. Sun, and P. C. Chang, "Media Hashing -- Part III: A Geometric Distortion-Resilient Image Watermarking Scheme for Copyright Protection," in Proc. IPPR Conf. on CVGIP 2004, Hwalien, Taiwan, Aug. 2004 (best paper award).
  87. S. W. Sun, C. S. Lu, and P. C. Chang, "Robust Hash-based Image Watermarking with Resistance to Geometric Distortions and Watermark-Estimation Attack," in Proc. 3rd Workshop on Digital Archives Technologies, Taipei, Taiwan, Aug. 2004, pp. 215-222. (EI)
  88. C. S. Lu, C. Y. Hsu, S. W. Sun and P. C. Chang, "Robust Mesh-based Hashing for Copy

- Detection and Tracing of Images,” in IEEE International Conference on Multimedia & Expo, Taipei, Taiwan, June. 2004, pp. 731-734. (EI)
89. C. C. Lee and P. C. Chang, “Deterministic traffic regulation with decoder buffer constraints for streaming videos,” in IEEE International Conference on Multimedia & Expo, June 2004, pp. 475-478. (EI)
  90. T. T. Lu and P. C. Chang, “Low Rate Video Coding with Block Reordering in Wavelet Domain,” in SPIE Conf. Electronic Imaging 2004, San Jose, CA, Jan. 2004, vol. 5308, pp. 1218-1225. (EI)
  91. C. C. Lee, S. W. Chen, and P. C. Chang, “Active Packetization and Priority Description for Scalable Video over IPv6 based Wireless networks,” in Proc. SAINT, Tokyo, Japan, Jan. 2004, pp. 163-167. (EI)
  92. S. W. Sun and P. C. Chang, “Image Watermarking System Based on Centroid Projection,” in Proc. IEEE ICICS-PCM 2003, Singapore, Dec. 2003, vol. 2, pp. 1158-1162.
  93. S. W. Sun and P. C. Chang, “Video Watermarking Synchronization Based on Profile Statistics,” in Proc. IEEE Annual International Carnahan Conference on Security Technology 2003, Taipei, Taiwan, Oct. 2003, pp. 410-413. (EI)
  94. S. J. Weng, T. T. Lu, and P. C. Chang, “Key-based video watermarking system on MPEG-2,” in SPIE Conf. Electronic Imaging 2003, Santa Clara, CA, Jan. 2003, vol. 5020, pp. 516-525 (EI)
  95. S. W. Sun, T. T. Lu, and P. C. Chang, “Image Watermarking Synchronization by Significant MSB Plane Matching,” in Proc. IEEE Pacific Rim Conference on Multimedia 2002, Hsinchu, Taiwan, Dec. 2002, pp. 468-476.
  96. C. M. Huang and P. C. Chang, “Key-based Audio Watermarking System using Wavelet Packet Decomposition,” in Proc. Workshop on Consumer Electronics, Hsinchu, Taiwan, Dec. 2002, pp. 113-120.
  97. C. C. Lee, C. W. Lin, and P. C. Chang, “An Improved Traffic Modeling Scheme for MPEG Video over Content Delivery Networks,” in Proc. IEEE International Conference on Communication Systems, Singapore, Nov. 2002, pp. 738-742.
  98. P. C. Chang and H. M. Yu, “Dither-like Data Hiding in Multistage Vector Quantization of MELP and G.729 Speech Coding,” in Thirty-Sixth Asilomar Conference on Signals, Systems, and Computers, Monterey, CA, Nov. 2002, vol. 2, pp. 1199-1203. (EI)
  99. T. H. Lee and P. C. Chang, “Error Robust H.263 Video Coding System,” in Proc. SPIE Conf. Electronic Imaging and Multimedia Systems III, Shanghai, China, Oct. 2002, vol. 4925, pp. 209-218.
  100. K. C. Tsai, T.H. Lee, and P. C. Chang, “Fast Multi-level Successive Elimination Algorithm for Motion Estimation in H.26L,” in Proc. IPPR Conf. Computer Vision, Graphics and Image Processing (CVGIP), Hsinchu, Taiwan, Aug. 2002, pp. 422-428.
  101. P. C. Chang, T. T. Lu, and L. L. Lee, “Blockwise Image Watermarking System with Selective Data Embedding in Wavelet Transform Domain,” in Proc. SPIE Security and Watermarking of Multimedia Contents IV, San Jose, CA, Jan. 2002, vol. 4675, pp. 368-377. (EI)
  102. C. C. Lee, J. T. Wang, C. F. Wang, and P. C. Chang, “Adaptive MPEG-4 Source Rate

- Control over Internet for ADSL Subscribers,” in Proc. NCS 2001, Taipei, Taiwan, Dec. 2001, pp. D181-D187.
- 103.** P. C. Chang, M. T. Chou, and C. M. Huang, “Embedded Zero-tree Wavelet Packet Audio Coding with Psychoacoustic Modeling,” in Proc. NCS 2001, Taipei, Taiwan, Dec. 2001, pp. D065-D074.
  - 104.** T. T. Lu, L. L. Lee, and P. C. Chang, “A Key-based Image Watermarking System Using Subblock Composition in DCT Domain,” in Proc. Multimedia Technology and Applications Conference 2001, Irvine, CA, Nov. 2001, pp. 157-163.
  - 105.** T. T. Lu, K. W. Wen, and P. C. Chang, “Block Reordering Wavelet Packet SPIHT Image Coding,” in Proc. Second IEEE Pacific Rim Conference on Multimedia 2001, Beijing, China, Oct. 2001, pp. 442-449.
  - 106.** D. K. Lien, and P. C. Chang, “Packet Loss Recovery using Data Hiding for Embedded Zero Tree Wavelet Packet Audio Coding System,” in Proc. Workshop on Consumer Electronics 2001, Taipei, Taiwan, Oct. 2001, pp. 1A04-1-1A04-6.
  - 107.** S. F. Huang, C. H. Hsu, and P. C. Chang, “Dynamic Buffer Smoothing for Speech Quality improvement in VoIP,” in Proc. Workshop on Consumer Electronics 2001, Taipei, Taiwan, Oct. 2001, pp. 1A05-1-1A05-6.
  - 108.** P. C. Chang, T. H. Wang, and T. H. Lee, “An Efficient Data Embedding Algorithm for H.263 Compatible Video Coding,” in Proc. Data Compression Conference 2001, Snowbird, Utah, March 2001, p. 489. (EI)
  - 109.** T. H. Wang, T. H. Lee, and P. C. Chang, “Error Detection by Parity Checks for H.263 Compatible Video Coding,” in Proc. Data Compression Conference 2001, Snowbird, Utah, March 2001, p. 522. (EI)
  - 110.** P. C. Chang and J. H. Lin, “Scalable Embedded Zero Tree Wavelet Packet Audio Coding,” in Proc. IEEE Third Workshop on Signal Processing Advances in Wireless Communications SPAWC 2001, Taoyuan, Taiwan, March 2001, pp. 384-387.
  - 111.** P. C. Chang and F. S. Ju, “Error Protect of G.729 over Wireless Environment,” in Proc. Workshop on Consumer Electronics 2000, Taipei, Taiwan, Oct. 2000, pp. 117-122.
  - 112.** T. T. Lu, L. L. Lee, H. Y. Tseng, and P.C. Chang, “Error Detection and Concealment of Zerotree Wavelet Video Coding,” in Proc. Workshop on Consumer Electronics 2000, Taipei, Taiwan, Oct. 2000, pp. 159-164.
  - 113.** T. T. Lu and P. C. Chang, “Layered Error Detection with Embedded Zerotree for Wireless Image Transmission,” in Proc. IPPR Conf. Computer Vision, Graphics, and Image Processing(CVGIP), Taipei, Taiwan, Aug. 2000, pp. 582-589.
  - 114.** P. C. Chang, T. H. Lee, and C. S. Yu, “Enhanced-MMSE Inverse Halftoning using Table-Lookup Vector Quantization,” in Proc. SPIE Conf. Visual Communications and Image Processing, Perth, Australia, June. 2000. (EI), vol. 4067(II), pp. 812-821.
  - 115.** J. T. Wang and P. C. Chang, “Error Recovery of Scalable MPEG-2 Video Coding over Dual-priority DiffServ Internet Transmission,” in Proc. Workshop on Internet and Distributed Systems, Tai-Nan, Taiwan, May 2000, pp. 137-147.
  - 116.** P. C. Chang, T. T. Lu, and H. C. Chen, “Embedded Wavelet Video Coding with Error Concealment,” in Proc. SPIE Conf. Image and Video Communications and Processing, San

- Jose, CA, Jan. 2000. (EI), vol. 3974, pp. 161-170.
117. J. T. Wang, Y. C. Lin, and P. C. Chang, "Real-Time Video Quality Control based on Transmission Status in ATM Networks," in Proc. National Computer Symposium, Taipei, Taiwan, Dec. 1999, pp. B-175-183.
  118. C. C. Chen, T. H. Lee, and P. C. Chang, "H.263 Implementation on PCI/C80 DSP Evaluation System by using Parallel Processing," in Proc. Workshop on Consumer Electronics, Taipei, Taiwan, Oct. 1999, pp. 5-12.
  119. J. H. Lin and P. C. Chang, "G.723.1 Implementation on Digital Signal Processor," in Proc. Workshop on Consumer Electronics, Taipei, Taiwan, Oct. 1999, pp. 31-36.
  120. P. C. Chang and T. T. Lu, "A Scalable Video Compression Technique based on Wavelet and MPEG Coding," in Digest of Technical Papers of ICCE, Los Angeles, CA, June 1999. (EI), pp. 372-373.
  121. T. H. Lee, H. H. Hsu, and P. C. Chang, "Robust Transmission of Progressive JPEG Image Coding in Wireless Communications," in Digest of Technical Papers of ICCE, Los Angeles, CA, June 1999. (EI), pp. 234-235.
  122. Y. C. Yang, J. T. Wang, and P. C. Chang, "Error-resilient Embedded Zerotree Wavelet Image Coding," in Proc. IEEE Int. Sym. On Consumer Electronics, Taipei, Taiwan, Oct. 1998, pp. TPB1-11-15.
  123. R. S. Liaw, M. T. Chou, and P. C. Chang, "Error Protection and Concealment to G.723.1 Speech Coding in Wireless Transmission Environment," in Proc. IEEE Int. Sym. On Consumer Electronics, Taipei, Taiwan, Oct. 1998, pp. TA2-05-08.
  124. T. H. Lee, J. T. Wang, and P. C. Chang, "Precise Error Tracking for Terminating Error Propagation Effects in H.263 Video Transmission," in Proc. SPIE Conf. Electronic Imaging and Multimedia Systems II, Beijing, China, Sep. 1998. (EI), vol. 3561, pp. 265-273.
  125. J. T. Wang and P. C. Chang, "Termination of Error Propagation by Feedback for MPEG Video Coding," in Proc. IPPR Conf. Computer Vision, Graphics, and Image Processing(CVGIP), Taipei, Taiwan, Aug. 1998. (EI), pp. 582-589.
  126. J. T. Wang, S. F. Huang, and P. C. Chang, "QoP/QoS Control for Multiresolution Video Applications over ATM Networks," in Digest of Technical Papers of ICCE, WPM 15.2, Los Angeles, CA, June 1998. (EI), pp. 260-261.
  127. P. C. Chang and C. S. Yu, "Neural Net Classification and LMS Reconstruction to Halftone Images," in Proc. SPIE Conf. Visual Communications and Image Processing, San Jose, CA, Jan. 1998. (EI), vol. 3309, No. 2, pp. 592-602.
  128. D. K. Wang, Y. C. Yang and P. C. Chang, "A Scalable Subband MPEG Coding System for Video Signals," in Proc. Int. Sym. on Communications, Hsin-Chu, Taiwan, Dec. 1997, pp. 294-298.
  129. C. C. Liao, P. C. Chang, H. H. Kuo, and T. H. Lee, "Adaptive Rate Control of H.263 Video Coding," in Proc. Workshop on Consumer Electronics '97, Taipei, Taiwan, Oct. 1997, pp. B1-2/7 - B1-2/12.
  130. C. C. Liao, T. H. Lee, and P. C. Chang, "Error Concealment with Macro-block Interleaving for H.263 Video Transmissions," in Proc. IPPR Conf. on Computer Vision, Graphics, and

- Image Processing, CVGIP '97, Tai-Chung, Taiwan, Aug. 1997, pp. 570-577.
131. A. H. Chang, P. C. Chang, S. H. Huang, and Y. R. Yang, "Development of System Life-Cycle Cost Estimating Model," in Proc. 2-nd Sym. on Reliability and Maintainability, Chung-Li, Taiwan, May 1997, pp. 7-14.
  132. P. C. Chang and M. C. Chien, "Interleaving and Error Concealment for MPEG Video over ATM networks," in Proc. SPIE Conf. Electronic Imaging and Multimedia Systems, Beijing, China, Nov. 1996, vol. 2898, pp. 271-282. (EI)
  133. S. J. Li, M. C. Yang, P. C. Chang, and H. S. Wang, "Error Protection to IS-96 Variable Rate CELP Speech Coding," in Proc. 7-th IEEE Int. Sym. on Personal, Indoor, and Mobile Radio Communications, PIMRC '96, Taipei, Taiwan, Oct. 1996, vol. 3, pp. 1014-1018. (EI)
  134. P. C. Chang and J. Y. Yan, "Design and Implementation of a Software-only H.261 Video Codec," in Proc. Int. Conf. On Signal Processing Applications and Technology, ICSPAT '96, Boston, Oct. 1996, pp. 973-977.
  135. J. J. Twu and P. C. Chang, "Hierarchical Ordering Block Truncation Coding of Color Document Images," in Proc. IPPR Conf. On Computer Vision, Graphics, and Image Processing, CVGIP '96, Chia-Yi, Taiwan, Aug. 1996, pp. 462-469.
  136. K. Y. Chang and P. C. Chang, "Text Extraction from Low-Resolution Color Map Images," in Proc. IPPR Conf. On Computer Vision, Graphics, and Image Processing, CVGIP '95, Tao-Yuan, Taiwan, Aug. 1995, pp. 528-533.
  137. I. H. Chang, P. C. Chang, and T. S. Liu, "Adaptive Subsampling JPEG Image Coding," in Proc. IEEE Int. Conf. on Consumer Electronics, Chicago, IL, June 1995, pp. 264-265. (EI)
  138. Z. Y. Shae, P. C. Chang, and M. S. Chen, "Capture and Playback Synchronization in Video Conferencing," in Proc. SPIE Conf. Multimedia Computing and Networking '95, San Jose, CA, Feb. 1995, vol. 2417, pp. 90-101.
  139. D. Kandlur, M. S. Chen, P. C. Chang, and T. P. Barzilai, "Making Desktop Video Conference on Computer and Communications," in Proc. Multimedia Communications '93, Banff, Canada, April 1993, pp. 299-306.
  140. P. C. Chang, P. Kermani, and A. Kershenbaum, "Multi-Link-Speed Network Topology Design," in Proc. Int. Phoenix Conf. on Computer and Communications, Phoenix, April 1992, pp. 299-306.
  141. A. Birman, P. C. Chang, and R. Guerin, "Issues in the Design of a Frame Relay Subsystem," in Proc. IBM Communications Technology ITL '89, Research Triangle Park, North Carolina, Jan. 1989.
  142. P. C. Chang, J. May, and R. M. Gray, "Hierarchical Vector Quantizers with Table-Lookup Encoders," in Proc. IEEE International Conference on Communications, Chicago, IL, June 1985, pp. 1452-1455.

### 三、 技術報告

1. P. C. Chang, "Computational complexity reduction and control of high efficiency video coding," National Science Council, NSC103-2221-E-008-051-MY2, July. 2016.
2. P. C. Chang, "Feature extraction in compression domain for audio/video retrieval,"

- National Science Council, NSC102-2221-E-008-031- , July. 2014.
3. P. C. Chang, "Low Complexity Coding Techniques for HEVC and Its Transcoding in Cloud Systems," National Science Council, NSC101-2221-E-008-062- , July. 2013.
  4. P. C. Chang, "High quality video transmission techniques and services over heterogeneous wireless network," National Science Council, NSC100-2221-E-008-094- , July. 2012.
  5. P. C. Chang, "Complexity Control of Scalable Video/Audio coding over heterogeneous wireless networks," National Science Council, NSC100-2221-E-008-090- , July. 2012.
  6. P. C. Chang, "High quality video transmission techniques and services over heterogeneous wireless network (I)," National Science Council, NSC99-2221-E-008-004-, July. 2011.
  7. P. C. Chang, "Scalable Video/Audio coding over heterogeneous wireless networks (I)," National Science Council, NSC-99-2221-E-008-003-, July. 2011.
  8. P. C. Chang, "Scalable Video/Audio coding over heterogeneous wireless networks," National Science Council, 98-2221-E-008-064-, July. 2010.
  9. P. C. Chang, "Video transmission techniques and applications over heterogeneous wireless network," National Science Council, 98-2221-E-008-060- , July. 2010.
  10. P. C. Chang, "Robust power constrained video coding with QoS support over broadband wireless networks," National Science Council, NSC- 96-2221-E-008-016-MY2 , Oct. 2009.
  11. P. C. Chang, "Multi-dimensional Scalable Video Transmission over Broadband Wireless Networks," National Science Council, NSC- 96-2221-E-008-060-MY2 , July 2009.
  12. P. C. Chang, "Software Implementation of H.264 Encoder," National Science Council, NSC- 96-2622-E-008-010-CC3, Oct. 2008.
  13. M. C. Chien and P. C. Chang, "Detailed Proof of Optimal CABAC for ME," Jan. 2008.
  14. P. C. Chang, "Robust video delivery over wireless Internet for multi-camera surveillance systems(2/2)," National Science Council, NSC- 95-2221-E-008-037- , July 2007.
  15. P. C. Chang, "Noise Reduction and image enhancement preprocessing in video surveillance," National Science Council, NSC- 95-2622-E-008-004-CC3, April 2007.
  16. P. C. Chang, "Robust Watermarking for H.264/AVC Video Signals," National Science Council, NSC- 94-2213-E-231-006-, July 2006.
  17. P. C. Chang, "Robust video delivery over wireless Internet for multi-camera surveillance systems(1/2)," National Science Council, NSC- 94-2213-E-008-021-, July 2006.
  18. P. C. Chang, "Robust error tracking technique in H.264 video coding," National Science Council, NSC- 93-2213-E-228-006-, July 2005.
  19. P. C. Chang, "DSP implementation and performance improvement of H.26L video coder," National Science Council, NSC- 92-2213-E-228-005-, July 2004.
  20. P. C. Chang, "Real-Time Implementation of AAC Decoder on a Fixed-Point DSP," National Science Council, NSC- 92-2622-E-008-009-CC3, Aug. 2004.



21. P. C. Chang, "Integrated QoS and IPR guarantees for audio/video applications over wireless networks," National Science Council, NSC- 92-2213-E-008-037, May 2004.
22. P. C. Chang, "Data Compression Techniques for Remote Missile Tracking(2/2)," National Science Council, NSC-92-CS-7-008-003, Mar. 2004.
23. P. C. Chang, "Robust Watermarking for Audio and Video Signals(2/2)," National Science Council, NSC-91-2219-E-008-008, Aug. 2003.
24. P. C. Chang, "Data Compression Techniques for Remote Missile Tracking(1/2)," National Science Council, NSC-91-2623-7-008-008, Apr. 2003.
25. P. C. Chang, "Robust Watermarking for Audio and Video Signals(1/2)," National Science Council, NSC-90-2213-E-008-037, Aug. 2002.
26. P. C. Chang, "Design and Applications of Wireless Broadband Communication Systems," National Science Council, NSC-89-2213-E-008-081, Aug. 2001.
27. P. C. Chang, "Design of Wireless SFH/TDMA Campus Multimedia Communication System (3/3)," National Science Council, NSC-88-2213-E-008-081, NSC-88-2213-E-008-030, Aug. 2001.
28. P. C. Chang, "Speech and Video Coding for IMT2000 CDMA-Based Systems (3/3)," National Science Council, NSC-88-2219-E-008-001, NSC-88-2219-E-008-002, NSC-89-2219-E-008-048, Aug. 2001.
29. P. C. Chang, "VoIP with Quality of Service," Institute for Information Industry, Dec. 2000.
30. P. C. Chang, "Speech and Video Coding for IMT2000 CDMA-Based Systems (2/3)," National Science Council, NSC-88-2219-E-008-001, NSC-89-2219-E-008-048, Aug. 2000.
31. P. C. Chang, "Audio/Video Codec in Wireless SFH-S TDMA Campus Multimedia Communication System (3/3)," National Science Council, NSC-87-2213-E-008-036, NSC-88-2213-E-008-031, NSC-89-2213-E-008-036, Aug. 2000.
32. P. C. Chang, "Design of Wireless SFH/TDMA Campus Multimedia Communication System (2/3)," National Science Council, NSC-88-2213-E-008-030, Aug. 1999.
33. P. C. Chang, "QoP/QoS Control on Hierarchical MPEG Video Communications," NSC-87-2213-E-0008-041 , Aug. 1998.
34. P. C. Chang, "Compression of Super Large Scale MPEG Video ," Mentor Data System Inc., Aug. 1998.
35. P. C. Chang and R. M. Li, "Laboratory Manual for Digital Communication Systems," June 1998.
36. P. C. Chang, "A Hierarchical Approach to the Transport of MPEG Video over ATM Networks," National Science Council, NSC 86-2213-E-008-017, Aug. 1997.
37. P. C. Chang, "Speech and Video Compression for Wireless Communication (3/3) ," National Science Council, NSC 84-2221-E-008-006, NSC 85-2221-E-008-014, NSC 86-2221-E-008-013, Aug. 1997.
38. Y. Lin and P. C. Chang, "Compression and Reconstruction of Documents (3/3)," Chung-

- Hua Telecommunications Lab. , TL 83-5213, TL 85-5210, TL 86-5205, July 1997.
39. P. C. Chang, "The study of a reliable life cycle cost model for weapon systems," Chung-Shan Institute of Science and Technology , NSC 86-2623-D-008-003, June 1997.
  40. P. C. Chang, "H.261 Video Codec Application for W89K PA-RISC," Winbond Company, April 1996.
  41. P. C. Chang and K. T. Fan, "Laboratory Manual for Special Projects of Communications," Mar. 1996. ( 八十六年度第一期通訊科技教育改進計畫優秀教材 )
  42. P. C. Chang, "Efficient Audio/Video Coding in Packet Networks," National Science Council, NSC 83-0404-E-008-018 and NSC 84-2213-E-008-023 , Aug. 1995.
  43. C. S. Yu and P. C. Chang, "Laboratory Manual for Principles of Communications," June 1995.
  44. P. C. Chang , J. T. Liu, Z.Y. Shae, and M. S. Chen, "Audio Capture and Playback Synchronization in Video Conferencing by Silence Segmentation," IBM Technical Disclosure Bulletin, YO894-0020, 1994.
  45. P. C. Chang, Z. Y. Shae, and M. S. Chen, "Audio Echo Suppression by Automatic Receiving-gain Control," IBM Technical Disclosure Bulletin, YO894-0019, 1994.
  46. Z. Y. Shae, P. C. Chang, and M. S. Chen, "Video Perceptual Capture and Playback Synchronization in Multimedia Conferencing," IBM Technical Disclosure Bulletin, YO894-0018, 1994.
  47. P. C. Chang, J. T. Liu, Z. Y. Shae, and M. S. Chen, "Audio Mixing with Shared Playback Buffer in Multiparty Video Conferences," IBM Technical Disclosure Bulletin, YO893-0276, Aug. 1993.
  48. P. C. Chang, P. Kermani, and A. Kershenbaum, "Mesh Network Topological Design based on Multiple Link Types," IBM Research Report, RC 17025, July 1991.
  49. P. C. Chang, P. Kermani, and A. Kershenbaum, "Traffic Redirection Technique in Multispeed Network Design," YO890-0934, IBM TDB, vol. 34, no. 6, pp. 371-374, Nov. 1991.
  50. R. Cahn, P. C. Chang, P. Kermani, and A. Kershenbaum, "A study of Network Clustering Algorithms," IBM Research Report, RC 16046, Aug. 1990.
  51. P. C. Chang, "Automatic Exposure Metering by Differential Vector Quantization," YO890-0114, IBM TDB, vol. 33, no. 3B, pp. 75-76, Aug. 1990.
  52. A. Birman, P. C. Chang, J. S. C. Chen, and R. Guerin, "High Speed Buffer for N x 1 Packet Multiplexing," YO888-0842, IBM TDB, vol. 32, no. 8A, pp. 418-421, Jan. 1990.
  53. Birman, P. C. Chang, J. S. C. Chen, and R. Guerin, "System with Buffers for High-Speed 1-to N Switching of Data Packets," YO888-0866, IBM TDB, vol. 32, no. 8A, pp. 401-403, Jan. 1990.
  54. P. C. Chang and R. Guerin, "RAM-Based Packet Switch with Overflow Buffers," YO889-0358, IBM TDB, vol. 32, no. 8B, pp. 308-310, Jan. 1990.

55. A. Birman, P. C. Chang, and R. Guerin, "A Frame Handler with Dynamic Allocation of Buffer Space," YO889-0113, IBM TDB, vol. 32, no. 6B, pp. 37-40, Nov. 1989.
56. T. Ancheta, A. Birman, P. C. Chang, and R. Guerin, "Parallel Architecture for High Speed Bit Stuffing and Byte Alignment," YO888-0843, IBM TDB, vol. 32, no. 6B, pp. 31-34, Nov. 1989.
57. A. Birman, P. C. Chang, J. S. C. Chen, and R. Guerin, "Buffer Sizing in an ISDN Frame Relay Switch," RC 14836, Aug. 1989.
58. T. Ancheta, P. C. Chang, et al., "Architecture and Design of a High Speed Frame Relay System," RC 14653, June 1989.
59. P. C. Chang, Y. H. Lee, and L. Lien, "High-Speed Packet Switching Using an Auxiliary Tag Pipe," YO887-0840, IBM TDB, vol. 31, no. 9, Feb. 1989.
60. P. C. Chang, M. Chen and K. Maruyama, "Low-complexity One-way Speaker Phone," YO888-0888, IBM TDB, Dec. 1988.
61. P. C. Chang, Y. Hsu and L. Lien, "Address Chaining Scheme to provide Simultaneous-Multiple-Write Capability for Memory," YO888-0176, IBM TDB, vol. 32, no. 1, June 1988.
62. P. C. Chang and L. Lien, "Enhancing 'No Operation' Logic Signals in Multi-Module Space Switches," YO887-0479, IBM TDB, vol. 31, no. 3, Aug. 1988.
63. P. C. Chang, et al., "Inter-Shelf Switching System Design and Architecture," Document No. ATSL870002, Aug. 1987.
64. P. C. Chang, "Predictive, Hierarchical, and Transform Vector Quantization for Speech Coding," Ph.D. dissertation, Department of Electrical Engineering, Stanford University, May 1986.

#### 四、 專利

1. P. C. Chang , T. M. Chang and Y. M. Shiu, "多聲道降混音裝置台灣發明," TW, Patent Number:101101210 100081
2. P. C. Chang , T. M. Chang and Y. M. Shiu , "低複雜度之改良式多聲道降混音架構美國發明," US, Application Number:13/417,157 100081
3. P. C. Chang and M. C. Chien , "METHOD OF CONTROLLING COMPLEXITY FOR VIDEO COMPRESSOR," US, Patent Number: US 8,077,777 B2, 2007.08-2027.08
4. P. C. Chang and M. C. Chien , "視訊編碼之複雜度控制方法," ROC, Patent Number: I 338509, 2011.03-2027.03
5. P. C. Chang and W. S. Lin , "數位音訊放大器," ROC, Patent Number: I 303515 , 2008.11-2025.09
6. P. C. Chang and T. H. Wu , "具混合小波封包與離散餘弦轉換之音訊壓縮裝置," ROC, Patent Number: 246256 , 2005.12-2024.07

7. P. C. Chang and C. C. Chen , “METHOD AND APPARATUS OF MIXING AUDIOS,” US, Application Number: 10,202,863, 2003.1
8. P. C. Chang, F. S. Chu, and T. H. Lee , “Progressive FAX image compression system and method,” ROC, Patent Number: 131,594, 2001.04 - 2019.07
9. T. Ancheta, A. Birman, P. C. Chang, and R. Guerin , “Parallel Architecture for High speed Flag Detection and Packet Identification,” US, Patent Number: 4,974,223 ,1990.11 - 2009.10