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## *RESEARCH INTERESTS*

Multimedia and signal processing with emphasis on Digital Image/Video Processing and Compression, Computer Vision Techniques, including

- Image/Video Restoration and Enhancement
- Image Stylization and Assessment
- Action Understanding and Analytics

## *EDUCATION*

- **Peking University**                                                                   Beijing,  China
  Ph. D in Computer Science                                                                      07/2010
  Thesis: Rate Distortion Optimization Based Scalable Video Coding
  Advisor: Prof. Zongming Guo

- **Northwestern Polytechnic University**                               Xi'an, Shaanxi, China
  B. E. in Computer Science / Honor Class                                                 06/2005
  Advisor: Prof. Rongchun Zhao

## *WORK EXPERIENCES*

- **Peking University**                                                                   Beijing,  China
  *Associate Professor*, Institute of Computer Science and Technology          08/2012 – Present
  *Assistant Professor*, Institute of Computer Science and Technology          07/2010 – 07/2012

- **Microsoft Research Asia**                                                         Beijing, China
  *Visiting Researcher*, Internet Multimedia Group                                  03/2015 – 10/2015
  ***MSRA Star Track for Young Faculties Program***

- **University of Southern California**, (Aug. 2007 – Aug. 2008)         Los  Angeles,  CA,  US
  *Visiting Scholar*, Collaborate with Prof. C.-C. Jay Kuo                         08/2007  –  08/2008

## *GRANTS*

[1]   **PI:** MSRA Collaborative Research (***MSRA-CR***), "Remote Health and Medical Aide via Skeleton-Based Action Forecast and Detection", Project ID FY17-RES-THEME-013, 2017.01—2017.12.

[2]   **PI:** Beijing Institute of Collaborative Innovation Funding (***BICIF***), "Research on Reconstruction of X-ray Image CR System", Project ID BICIXJZZ201603002, 2016.03—2018.02.

[3]   **PI:** National Natural Science Foundation of China (***NSFC***), No.61472011. "Image Representation, Sparse Coding and Reconstruction Based on Sparse Representation", 2015.01—2018.12.

[4]   **PI:** Beijing Natural Science Foundation (***BJNSF***), No.4142021. "Research on Image Modeling and

Reconstruction Based on Sparse Representation", 2014.01—2016.12.

[5] **PI of Sub-Project:** National High Technology Research and Development Program of China (*863 Program*), No.2014AA015205, "Key Technology of Information Consumption Service and Application Demonstration Based on Media Bid Data", 2014.01—2016.12.

[6] **PI:** National Natural Science Foundation of China (*NSFC*), No.61101078, "Research on Omni-Scalable Video Coding and Super-Resolution Reconstruction", 2012.01—2014.12.

[7] **PI:** Research Fund for Doctoral Program of Higher Education of China, No.20110001120117, "Research on Scalable Video Coding and Reconstruction", 2012.01—2014.12.

## PUBLICATIONS

\* corresponding author

### [Journal]:

[1] **Jiaying Liu**, Wenhan Yang, Xinfeng Zhang, and Zongming Guo. "Retrieval Compensated Group Structured Sparsity for Image Super-Resolution", *IEEE Transactions on Multimedia* (*TMM*), Vol.19, No.2, pp.302-216, Feb. 2017.

[2] Yuming Fang, Jiebin Yan, **Jiaying Liu\***, Shiqi Wang, Qiaohong Li, and Zongming Guo, "Objective Quality Assessment of Screen Content Images by Uncertainty Weighting", *IEEE Transactions on Image Processing* (*TIP*), Vol.26, No.4, Apr. 2017.

[3] Shuai Yang, **Jiaying Liu\***, Yuming Fang, and Zongming Guo. "Joint-Feature Guided Depth Map Super-Resolution with Face Priors", *Accepted by IEEE Transactions on Cybernetics* (*TCYB*), Dec. 2016.

[4] Wenhan Yang, **Jiaying Liu\***, Mading Li, and Zongming Guo. "Isophote-Constrained Autoregressive Model with Adaptive Window Extension for Image Interpolation", *Accepted by IEEE Transactions on Circuit System for Video Technology* (*TCSVT*), Dec. 2016.

[5] Mading Li, **Jiaying Liu\***, Jie Ren, Zongming Guo. "Adaptive General Scale Interpolation Based on Weighted Autoregressive Models". *IEEE Transactions on Circuit System for Video Technology* (*TCSVT*). Vol.25, No.2, pp.200-211, Feb. 2015.

[6] Yongqin Zhang, **Jiaying Liu\***, Wenhan Yang and Zongming Guo. "Image Super-Resolution Based on Structure-Modulated Sparse Representation", *IEEE Transactions on Image Processing* (*TIP*), Vol.24, No.9, pp.2797-2810, May 2015.

[7] Xinfeng Zhang, Ruiqin Xiong, Weisi Lin, Siwei Ma, **Jiaying Liu** and Wen Gao. "Video Compression Artifact Reduction via Spatio-Temporal Multi-Hypothesis Prediction", *IEEE Transactions on Image Processing* (*TIP*), Vol.24, No.12, pp.6048-6016, Dec. 2015.

[8] Yongqin Zhang, **Jiaying Liu**, Mading Li and Zongming Guo. "Joint Image Denoising Using Adaptive Principal Component Analysis and Self-similarity", *Information Sciences*, Vol.259, pp.128-141, Feb, 2014.

[9] Jie Ren, **Jiaying Liu\*,** and Zongming Guo. "Context-Aware Sparse Decomposition for Image Denoising and Super-Resolution", *IEEE Transactions on Image Processing* (*TIP*), Vol.22, No.4, pp.1456-1469, Apr. 2013.

[10] Jun Sun, Yizhou Duan, Jiangtao Li, **Jiaying Liu\***, and Zongming Guo. "Rate-Distortion Analysis of Dead-Zone Plus Uniform Threshold Scalar Quantization and Its Application—Part I: Fundamental Theory", *IEEE Transaction on Image Processing* (*TIP*), Vol.22, No.1, pp.202-214, Jan. 2013.

[11] Jun Sun, Yizhou Duan, Jiangtao Li, **Jiaying Liu\***, and Zongming Guo. "Rate-Distortion Analysis of Dead-Zone Plus Uniform Threshold Scalar Quantization and Its Application—Part II: Two-Pass VBR Coding for H.264/AVC", *IEEE Transactions on Image Processing* (*TIP*), Vol.22, No.1, pp.215-228, Jan. 2013.

[12] Yongjin Cho, Do-Kyoung Kwon, **Jiaying Liu\***, and C.-C. Jay Kuo. "Dependent R/D Modeling Techniques

and Joint T-Q Layer Bit Allocation for H.264/SVC", *IEEE Transactions on Circuit System for Video Technology* (*TCSVT*), Vol.23, No.6, pp.1003-1015, Jun. 2013.

[13] Yongqin Zhang, Yu Ding, **Jiaying Liu**\*, and Zongming Guo. "Guided Image Filtering Using Signal Subspace Projection", *IET Image Processing*. Vol.7, No.3, pp.270-279, Mar. 2013.

[14] Jie Ren, **Jiaying Liu**, Wei Bai, Zongming Guo. "Implicit Piecewise Autoregressive Model-Based Image Interpolation Algorithm", *Journal of Software*, Vol.23, No.5, pp.1248-1259, May 2012.

[15] Yongqin Zhang, Yu Ding, Jin-Sheng Xiao, **Jiaying Liu** and Zongming Guo. "Visibility Enhancement Using an Image Filtering Approach", *EURASIP Journal on Advances in Signal Processing*, Oct. 2012.

[16] **Jiaying Liu**, Yongjin Cho, Zongming Guo and C.-C. Jay Kuo. "Bit Allocation for Spatial Scalability Coding of H.264/SVC with Dependent Rate-Distortion Analysis", *IEEE Transactions on Circuit System for Video Technology* (*TCSVT*), Vol.20, No.7, pp.967-981, Jul. 2010.

[17] **Jiaying Liu**, Zongming Guo, Yongjin Cho. "Bit Allocation in H.264/SVC Spatial-Quality with Dependent R-D Modeling", *Acta Electronica Sinica*, Vol.38, No.9, pp.2112-2117, Sep. 2010.

**[Conference]:**

**2017:**

[18] Shuai Yang, **Jiaying Liu**\*, Zhouhui Lian, and Zongming Guo. "Awesome Typography: Statistics-Based Text Effects Transfer", *Accepted by IEEE Conference on Computer Vision and Pattern Recognition* (*CVPR*), Honolulu, Hawaii, Jul. 2017.

[19] Wenhan Yang, Robby T. Tan, Jiashi Feng, **Jiaying Liu**, Zongming Guo, and Shuicheng Yan. "Joint Rain Detection and Removal from a Single Image", *Accepted by IEEE Conference on Computer Vision and Pattern Recognition* (*CVPR*), Honolulu, Hawaii, Jul. 2017.

[20] Sijie Song, Cuiling Lan, Junliang Xing, Wenjun Zeng and **Jiaying Liu**\*. "An End-to-End Spatio-Temporal Attention Model for Human Action Recognition from Skeleton Data". *Proc. of AAAI Conference on Artificial Intelligence* (*AAAI*), San Francisco, CA, Feb. 2017 (**Full / Oral**).

[21] Saboya Yang, **Jiaying Liu**\*, Shuai Yang, Wenhan Yang, and Zongming Guo. "Joint-Domain Unsupervised Stylization for Portraits", *Proc. of IEEE International Symposium on Circuits and Systems* (*ISCAS*), Baltimore, MD, May 2017.

[22] Chunhui Liu, Yanghao Li, Yueyu Hu, and **Jiaying Liu**\*. "Online Action Detection and Forecast via Multi-Task Deep Recurrent Neural Network", *Proc. of IEEE International Conference on Acoustics, Speech, and Signal Processing* (*ICASSP*), New Orleans, LA, Mar. 2017.

[23] Shihong Deng, **Jiaying Liu**\*, Mading Li, Wenhan Yang, and Zongming Guo. "General Scale Interpolation via Context-Aware Autoregressive Model and Multiplanar Constraint", *Proc. of IEEE International Conference on Acoustics, Speech, and Signal Processing* (*ICASSP*), New Orleans, LA, Mar. 2017.

[24] Shuai Yang, **Jiaying Liu**, Sifeng Xia, and Zongming Guo. "1+N Fusion: Cascaded Self-Portrait Enhancement", *Proc. of IEEE International Conference on Acoustics, Speech, and Signal Processing* (*ICASSP*), New Orleans, LA, Mar. 2017.

**2016:**

[25] Mading Li, **Jiaying Liu**\*, Zhiwei Xiong, Xiaoyan Sun, and Zongming Guo. "MARLow: A Joint Multiplanar Autoregressive and Low-Rank Approach for Image Completion", *Proc. of European Conference on Computer Vision* (*ECCV*), Amsterdam, Netherlands, Oct. 2016.

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[27] Sifeng Xia, **Jiaying Liu***, Yuming Fang, Wenhan Yang, and Zongming Guo. "Robust and Automatic Video Colorization via Multiframe Reordering Refinement", *Proc. of IEEE International Conference on Image Processing* (***ICIP***), Phoenix, AZ, Sep. 2016.

[28] Yuming Fang, **Jiaying Liu***, Yabing Zhang, Weisi Lin, and Zongming Guo. "Quality Assessment for Image Super-Resolution Based on Energy Change and Texture Variation", *Proc. of IEEE International Conference on Image Processing* (***ICIP***), Phoenix, AZ, Sep. 2016.

[29] Siren Cai, Xiaolong Li, **Jiaying Liu**, and Zongming Guo, "A New Reversible Data Hiding Scheme Exploiting High-Dimensional Prediction-Error Histogram", *Proc. of IEEE International Conference on Image Processing* (***ICIP***), Phoenix, AZ, Sep. 2016.

[30] Qiuyan Lin, **Jiaying Liu**, and Zongming Guo. "Local Ternary Pattern Based on Path Integral for Steganalysis", *Proc. of IEEE International Conference on Image Processing* (***ICIP***), Phoenix, AZ, Sep. 2016.

[31] Shuai Yang, **Jiaying Liu***, Sijie Song, Mading Li, and Zongming Guo. "Structure-Guided Image Completion via Regularity Statistics", *Proc. of IEEE International Conference on Acoustics, Speech, and Signal Processing* (***ICASSP***), Shanghai, China, March. 2016.

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[33] Yuming Fang, Jiebin Yan, **Jiaying Liu**, Shiqi Wang, Qiaohong Li, and Zongming Guo. "Objective Quality Assessment of Screen Content Images by Structure Information", *Proc. of Pacific-Rim Conference on Multimedia* (***PCM***), Xi'an, China, Sep. 2016.

[34] Shuai Yang, Sijie Song, Qikun Guo, and **Jiaying Liu***. "Facial Depth Map Enhancement via Neighbor Embedding", *Proc. of International Conference on Pattern Recognition* (***ICPR***), Cancun, Mexico, Dec. 2016.

[35] Saboya Yang, Gene Cheung, Patrick Le Callet, **Jiaying Liu**, and Zongming Guo. "Towards Computational Model of Artistic Intention: Quantify Lighting Surprise for Painting Analysis", *Proc. of International Conference on Quality of Multimedia Experience* (***QoMEX***), Lisbon, Portugal, June 2016.

**2015:**

[36] Mading Li, **Jiaying Liu***, Yu Guan and Zongming Guo. "Image Restoration Based on 3-D Autoregressive Model via Low-Rank Minimization", *Proc. of Data Compression Conference* (***DCC***), Snowbird, Utah, Apr. 2015.

[37] Wenhan Yang, **Jiaying Liu**, Shuai Yang, Zongming Guo, "Novel Autoregressive Model Based on Adaptive Window-Extension and Patch-Geodesic Distance for Image Interpolation", *Proc. of IEEE International Conference on Acoustics, Speech, and Signal Processing* (***ICASSP***), Brisbane, Australia, Apr. 2015.

[38] Yanghao Li, **Jiaying Liu***, Wenhan Yang and Zongming Guo. "Neighborhood Regression for Edge-Preserving Image Super-Resolution", *Proc. of IEEE International Conference on Acoustics, Speech, and Signal Processing* (***ICASSP***), Brisbane, Australia, Apr. 2015.

[39] Yanghao Li, **Jiaying Liu***, Wenhan Yang and Zongming Guo. "Multi-Pose Face Hallucination via Neighbor Embedding for Facial Components", *Proc. of IEEE International Conference on Image Processing* (***ICIP***), Quebec City, Canada, Sep. 2015.

[40] Qingyun Wang, **Jiaying Liu***, Wenhan Yang and Zongming Guo. "Adaptive Autoregressive Model With Window Extension via Explicit Geometry for Image Interpolation", *Proc. of IEEE International Conference on Image Processing* (***ICIP***), Quebec City, Canada, Sep. 2015.

[41] Saboya Yang, **Jiaying Liu***, Shuai Yang, Sifeng Xia and Zongming Guo. "Hierarchical Oil Painting Stylization with Limited Reference via Sparse Representation", *Proc. of IEEE International Workshop on Multimedia*

*Signal Processing* (***MMSP***), Xiamen, China, Oct. 2015. (**Top 10% Paper Awards**)

[42] Wenhan Yang, **Jiaying Liu**, Saboya Yang and Zongming Guo. "Image Super-Resolution via Group Structured Sparse Representation", *Proc. of IEEE Visual Communications and Image Processing* (***VCIP***), Singapore, Dec. 2015.

[43] Xinfeng Zhang, Weisi Lin, **Jiaying Liu** and Siwei Ma. "Compression Noise Estimation and Reduction via Patch Clustering", *Proc. of Asia Pacific Signal and Information Processing Association* (***APSIPA***), Hong Kong, China, Dec. 2015.

[44] Sijie Song, Yanghao Li, Zhihan Gao, **Jiaying Liu**\*. "Face Hallucination Based on Neighbor Embedding via Illumination Adaptation", *Proc. of Asia Pacific Signal and Information Processing Association* (***APSIPA***), Hong Kong, China, Dec. 2015.

[45] Shuai Yang, **Jiaying Liu**, Wenhan Yang and Zongming Guo. "Perspective Distorted Video Restoration and Stabilization For Mobile Devices", *Proc. of IEEE China Summit and International Conference on Signal and Information Processing* (***ChinaSIP***), Chengdu, China, Jul. 2015.

## 2014:

[46] Wenhan Yang, **Jiaying Liu**\*, Mading Li and Zongming Guo. "General Scale Interpolation Based on Fine-Grained Isophote Model with Consistency Constraint". *Proc. of IEEE International Conference on Image Processing* (***ICIP***), Paris, France, Oct. 2014.

[47] Yongqin Zhang, **Jiaying Liu**, Wei Bai and Zongming Guo. "Exploiting In-Plane Structural Complexity for Sparsity Based Image Super-Resolution". *Proc. of IEEE International Conference on Image Processing* (***ICIP***), Paris, France, Oct. 2014.

[48] Yongqin Zhang, **Jiaying Liu**\*, Mading Li and Zongming Guo. "BSIK-SVD: A Dictionary-Learning Algorithm for Block-Sparse Representations", *Proc. of IEEE International Conference on Acoustics, Speech, and Signal Processing* (***ICASSP***), Florence, Italy, May 2014.

[49] Saboya Yang, **Jiaying Liu**\*, Qiaochu Li and Zongming Guo. "Segmentation-Based Scale-Invariant Nonlocal Mean Super Resolution", *Proc. of IEEE International Symposium on Circuits and Systems* (***ISCAS***), Melbourne, Australia, Jun. 2014.

[50] Wei Bai, **Jiaying Liu**\*, Yanghao Li and Zongming Guo. "Image Transformation using Limited Reference with Application to Photo-Sketch Synthesis". *Proc. of IEEE Visual Communications and Image Processing* (***VCIP***), Valletta, Malta, Dec. 2014. (**Best paper candidate**)

[51] Mading Li, **Jiaying Liu**\*, Jie Ren and Zongming Guo. "Patch-Based Image Deblocking Using Geodesic Distance Weighted Low-Rank Approximation". *Proc. of IEEE Visual Communications and Image Processing* (***VCIP***), Valletta, Malta, Dec. 2014.

[52] Saboya Yang, **Jiaying Liu**\*, Wenhan Yang and Zongming Guo. "Sparse Representation Based Super Resolution Using Saliency and Edge Information". *Proc. of Asia Pacific Signal and Information Processing Association* (***APSIPA***), Siem Reap, Cambodia, Dec. 2014.

[53] Mading Li, **Jiaying Liu**, Chong Ruan, Lu Liu and Zongming Guo. "Block-Based Multiscale Error Concealment Using Low-Rank Completion". *Proc. of Asia Pacific Signal and Information Processing Association* (***APSIPA***), Siem Reap, Cambodia, Dec. 2014.

## 2013:

[54] **Jiaying Liu**, Yongjin Cho and Zongming Guo. "Single-Pass Dependent Bit Allocation in Temporal Scalability Video Coding", *Proc. of Data Compression Conference* (***DCC***), Snowbird, Utah, Mar. 2013.

[55] Jie Ren, **Jiaying Liu**\*, Mading Li, Wei Bai and Zongming Guo. "Image Blocking Artifacts Reduction via Patch Clustering and Low-Rank Minimization", *Proc. of Data Compression Conference* (***DCC***), Snowbird, Utah,

Mar. 2013.

[56] Jie Ren, **Jiaying Liu\***, Mading Li, and Zongming Guo. "Postprocessing of Block-Coded Videos for Deflicker and Deblocking", *Proc. of IEEE International Conference on Acoustics, Speech, and Signal Processing (**ICASSP**)*, Vancouver, Canada, May 2013.

[57] Mading Li, **Jiaying Liu\***, Jie Ren, and Zongming Guo. "Adaptive General Scale Interpolation Based on Similar Pixels Weighting", *Proc. of IEEE International Symposium on Circuits and Systems (**ISCAS**)*, Beijing, China, May 2013.

[58] Yongqin Zhang, **Jiaying Liu\***, Saboya Yang, and Zongming Guo. "Joint Image Denoising Using Self-Similarity Based Low-Rank Approximations", *Proc. of IEEE Visual Communications and Image Processing (**VCIP**)*, Sarawak, Malaysia, Nov. 2013.

[59] Wei Bai, Saboya Yang, **Jiaying Liu\***, Jie Ren, and Zongming Guo. "Image Super Resolution using Saliency-Modulated Context-Aware Sparse Decomposition", *Proc. of IEEE Visual Communications and Image Processing (**VCIP**)*, Sarawak, Malaysia, Nov. 2013.

[60] Mengyan Wang, **Jiaying Liu\***, Wei Bai, and Zongming Guo. "Illumination-Invariance and Nonlocal Mean Based Super Resolution", *Proc. of IEEE International Symposium on Circuits and Systems (**ISCAS**)*, Beijing, China, May 2013.

[61] Wei Bai, **Jiaying Liu**, Mading Li, and Zongming Guo. "Multi-Frame Super Resolution Using Refined Exploration of Extensive Self-Examples", *Proc. of International Multimedia Modeling Conference (**MMM**)*, Huangshan, China, Jan. 2013.

[62] Qiaochu Li, Qikun Guo, Saboya Yang, and **Jiaying Liu\***. "Scale-Compensated Based Nonlocal Mean Super Resolution", *Proc. of Asia Pacific Signal and Information Processing Association (**APSIPA**)*, Kaohsiung, Taiwan, Nov. 2013.

**2012:**

[63] **Jiaying Liu**, Yongjin Cho, and Zongming Guo. "Single Pass Dependent Bit Allocation for H.264 Temporal Scalability", *Proc. of IEEE International Conference on Image Processing (**ICIP**)*, Orlando, Florida, Sep. 2012.

[64] Jie Ren, Yue Zhuo, **Jiaying Liu\***, and Zongming Guo. "Illumination-Invariant Non-Local Means Based Video Denoising", P*roc. of IEEE International Conference on Image Processing (**ICIP**)*, Orlando, Florida, Sep. 2012.

[65] Yue Zhuo, **Jiaying Liu\***, Jie Ren, and Zongming Guo. "Nonlocal Based Super Resolution with Rotation Invariance and Search Window Relocation", *Proc. of IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, Kyoto, Japan, Mar. 2012.

[66] Wei Bai, **Jiaying Liu\***, Jie Ren, and Zongming Guo. "Visual-Weighted Motion Compensation Frame Interpolation with Motion Vector Refinement", *Proc. of IEEE International Symposium on Circuits and Systems (**ISCAS**)*, Seoul, Korea, May 2012.

[67] Wenyao Zhang, Jun Sun, **Jiaying Liu**, and Zongming Guo. "Optimized Bit Extraction of SVC Exploiting Linear Error Model", *Proc. of IEEE International Symposium on Circuits and Systems (**ISCAS**)*, Seoul, Korea, May 2012.

[68] Jie Ren, **Jiaying Liu\***, Mengyan Wang, and Zongming Guo. "Image Super-Resolution by Structural Sparse Coding", *Proc. of IEEE International Conference on Pattern Recognition (**ICPR**)*, Tsukuba Science City, Japan, Nov. 2012.

[69] Yue Zhuo, **Jiaying Liu\***, Mading Li, and Zongming Guo. "Super Resolution with Edge-Constrained Motion Estimation", *Proc. of Asia Pacific Signal and Information Processing Association (**APSIPA**)*, Los Angeles, Dec. 2012.

**2011:**

[70] **Jiaying Liu**, Yongjin Cho, and Zongming Guo. "Joint Spatial-Temporal Layer Bit Allocation with S-Domain Dependent R-D Modeling", *Proc. of Data Compression Conference* (**DCC**), Snowbird, Utah, March, 2011.

[71] **Jiaying Liu**, Yongjin Cho and Zongming Guo. "Practical Rate Control Algorithm for Temporal Scalable Video Coding", *Proc. of IEEE International Conference on Image Processing* (**ICIP**), Brussels, Belgium, Sep. 2011.

[72] Jie Ren, **Jiaying Liu\***, Wei Bai, and Zongming Guo. "Similarity Modulated Block Estimation for Image Interpolation", *Proc. of IEEE International Conference on Image Processing* (**ICIP**), Brussels, Belgium, Sep. 2011.

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[74] Yizhou Duan, Jun Sun, **Jiaying Liu**, and Zongming Guo. "Efficient Dead-Zone Plus Uniform Threshold Scalar Quantization of Generalized Gaussian Random Variables", *Proc. of Visual Communication and Image Processing* (**VCIP**), Tainan, Taiwan, Nov. 2011.

[75] Yan Pang, **Jiaying Liu**, and Zongming Guo. "Quality Adaptation of SVC-Based P2P Streaming". *Proc. of Asia Pacific Signal and Information Processing Association* (**APSIPA**), Xian, China, Oct. 2011.

**2009:**

[76] **Jiaying Liu**, Zongming Guo, and Yongjin Cho. "Bit Allocation for Joint Spatial-Quality Scalability in H.264/SVC", *Proc. of IEEE International Conference on Image Processing* (**ICIP**), Cairo, Egypt, Nov. 2009.

[77] **Jiaying Liu**, Yongjin Cho, and Zongming Guo. "Frame-Based Bit Allocation for Spatial Scalability in H.264/SVC", *Proc. of IEEE International Conference on Multimedia & Expo* (**ICME**), NYC, June 2009.

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[80] Pin Lv, **Jiaying Liu**, and Zongming Guo. "An Efficient and Fast Global Motion Estimation Algorithm Based on Motion Vector Field", *Proc. of SPIE International Symposium on Multispectral Image Processing & Pattern Recognition* (**MIPPR**), Yichang, Nov. 2009.

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**2008:**

[82] **Jiaying Liu**, and Zongming Guo. "Efficient Intra-$4\times4$ Mode Decision Based on Bit-rate Estimation in H.264/AVC", *Proc. of IEEE International Symposium on Circuits and Systems* (**ISCAS**), Seattle, Washington, May 2008.

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[14] **Jiaying Liu**, Zongming Guo, Zhihui Zheng, Lieseng Yang. A method and device selecting intra-frame predictive coding best mode for video coding. US Patent, No.8406286, Issue date: 03/26/2013.

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### *HONORS AND AWARDS*

- WangXuan Young Faculty Award, Peking University, 2016
- Excellent Teaching Award, Peking University, 2015
- Higher Institution Excellent Science and Technology Achievement Award, Ministry of Education of China, 2012
- Best Doctoral Dissertation, Peking University, 2012
- Excellent Teaching Award for Young Faculties, Peking University, 2011
- Advanced Teaching Award, Peking University, 2011

### *PROFESSIONAL ACTIVITIES*

- CCF, Senior Member
- IEEE, Member
- APSIPA, IVM & FPC, TC Member
- CCF TCMT, TC Member & Secretary
- IEEE CAS MSA TC, Affiliate Member
- APSIPA, Distinguished Lecturer, 2016-2017
- VCIP 2017, Registration Chair
- ICME 2017 Workshop, Organizer

- VCIP 2015/2016, Special Session Organizer / Chair
- APSIPA 2012/2015/2016, Special Session Organizer / Chair
- APSIPA 2014, Forum Keynote Speaker
- APSIPA 2012, Publication Chair
- Reviewer for
  - *IEEE Transactions on Image Processing*
  - *IEEE Transactions on Circuits and Systems for Video Technology*
  - *IEEE Transactions on Multimedia*
  - *IEEE Trans. on Broadcasting*
  - *IEEE Multimedia*
  - *IEEE Journal of Selected Topics in Signal Processing*
  - *Journal of Visual Communication and Image Representation*
  - *Signal, Image and Video Processing*
  - *IEEE Signal Processing Letter*
  - *SCIENCE CHINA Information Sciences*
- Reviewer for *IEEE ICME, ICIP*, *ICASSP*, *ISCAS*, *VCIP*, *MMSP*, *etc*.

## *TEACHING ACTIVITIES*

- Practice on Programming, **Undergraduates Course**
  - PKU EECS & YP School, Spring semester, 2011-2017
- Programming Practice and Algorithms, *MOOC Specialization at Coursera*
  - First Chinese MOOC specialization in computer science
  - More than 25000 students enrolled, Jul. 2015—Present
- Practice on Programming, **MOOC Course at Coursera**
  - 20438 students enrolled, Spring Semester, 2014
- C++ Programming, **MOOC Course at edX**
  - 3198 students enrolled, Feb. 2015
- Fundamental Algorithm Design, **MOOC course at edX**
  - 2770 students enrolled, Apr. 2015
- Practice on Programming, **MOOC Course at Chinese MOOC**
  - 1389 students enrolled, May, 2015

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