VCIP 2015 Technical Program

Conference Venue: Nanyang Executive Centre (NEC), Nanyang Technological University, Singapore

Sunday, 13 December 2015

09:00 Tutorial 1 (Lecture Room 1)

| High Efficiency Video Coding - Coding Tools and Specification: HEVC Version 2 and Beyond

12:00 *Mathias Wien, RWTH Aachen University, Germany*

Tutorial 2 (Lecture Room 2)

Regularities of Visual Data and Their Applications

Shenghua Gao, Shanghai Tech University, China
Kui Jia, Advanced Digital Sciences Center, Singapore
Tianzhu Zhang, Chinese Academy of Sciences, China
Weisheng Dong, Xidian University, China

14:00 Tutorial 3 (Lecture Room 1)

| HEVC Screen Content Coding (SCC) - Standardization and Technologies

17:00 *Ji-Zheng Xu, Microsoft Research Asia, China*
Wen-Hsiao Peng, National Chiao Tung University, Taiwan

Tutorial 4 (Lecture Room 2)

Cloud Communications for Highly Interactive Multimedia Communications

Anil Fernando, University of Surrey, UK

Monday, 14 December 2015

08:30 Opening Ceremony (Auditorium)

09:00 Keynote Speech I (Auditorium)

Design and Implementation of Stereo Matching for Depth Estimation in Computer Vision Applications

Professor Liang-Gee Chen, National Taiwan University, Taiwan

10:00 Coffee/Tea Break

10:30 Oral Session MO1A: Image and Video Processing I (Auditorium)

Session Chair: Chia-Wen Lin, National Tsinghua University, Taiwan

1. Registration of Undersampled Images via Higher Resolution Spectrum Restoration
   Qiang Song[1], Ruiqin Xiong[1], Xinfeng Zhang[2], Siwei Ma[1], Wen Gao[1]
   [1]Peking University
   [2]Nanyang Technological University

2. 2D Nonlocal Sparse Representation for Image Denoising
   Na Qi[1], Yunhui Shi[1], Xiaoyan Sun[2], Wenpeng Ding[1], Baocai Yin[1]
   [1]Beijing University of Technology
   [2]Microsoft Research

3. Perceptually-aware Distributed Compressive Video Sensing
   Jin Xu[1], Soufiene Djahel[1], Yuansong Qiao[2], Zhizhong Fu[3]
   [1]University College of Dublin (UCD)
   [2]Athlone Institute of Technology
   [3]University of Electronic Science and Technology of China

4. Merge Mode Based Fast Inter Prediction for HEVC
   Zhengxue Cheng, Heming Sun, Dajiang Zhou, Shinji Kimura
   Waseda University

5. Weighted Rate-Distortion Optimization for Screen Content Intra Coding
   Wei Xiao[1], Bin Li[2], Jizheng Xu[2], Guangming Shi[1], Feng Wu[3]
   [1]Xidian University
   [2]Microsoft
   [3]University of Science and Technology of China

10:30 Oral Session MO1B: Systems and Techniques for Human Interaction (Lecture Room 1)

Session Chair: Yongtian Wang, Beijing Institute of Technology, China

1. Fixation Prediction through Multimodal Analysis
   Xiongkuo Min, Guangtao Zhai, Chunjia Hu, Ke Gu
   Shanghai Jiao Tong University

2. A Robust Facial Landmark Detection Method in Multi-views
   Xinran Liu, Fei Su
   Beijing University of Posts and Telecommunications

3. Fusion of Submanifold and Local Texture Features for Palmprint Authentication
   Asha Rani, Manisha Verma, Balasubramanian Raman
   Indian institute of technology Roorkee

4. Encoding Scale into Fisher Vector for Human Action Recognition
   Bowen Zhang, Hanli Wang
   Tongji University

5. Spatio-temporal Quality Pooling Adaptive to Distortion Distribution and Visual Attention
   Yichen Li, Xiaoqiang Guo, Haiying Wang
   Beijing University of Posts and Telecommunications

12:00 Lunch Break

13:00 Oral Session MO2A: Cloud Multimedia Systems, Applications and Services (Auditorium)

Session Chair: Jiangbo Lu, Advanced Digital Sciences Center (ADSC), Singapore

1. 3View Deep Canonical Correlation Analysis for Cross-modal Retrieval
   Jie Shao, Zhicheng Zhao, Fei Su, Ting Yue
   Beijing University of Posts and Telecommunications

2. Improving Tag Matrix Completion for Image Annotation and Retrieval
   Zhen Qin, Chunguang Li, Honggang Zhang, Jun Guo
   Beijing University of Posts and Telecommunications

3. QCCE: Quality Constrained Co-saliency Estimation for Common Object Detection
   Koteswar Jerripothula, Jianfei Cai, Junsong Yuan
   Nanyang Technological University

4. Hierarchical Video Summarization with Loitering Indication
   Ruipeng Lu, Hua Yang, Ji Zhu, Shuang Wu, Jia Wang, Dave Bull
   Shanghai Jiao Tong University

5. Salient Object Detection using HOS Based L0 Smoothing and Shape-Aware Region Merging
   Hyunjun Eun, Jonghee Kim, Changick Kim
   Korea Advanced Institute of Science and Technology

13:00 Special Session MO2B: Human-Centric Visual Computing (Lecture Room 1)

Organizers: Weihong Deng, Beijing University of Posts and Telecommunications, China
Xiuzhuang Zhou, Capital Normal University, China

1. DeepEmo: Real-world Facial Expression Analysis via Deep Learning
   Weihong Deng, Jiani Hu, Shuo Zhang, Jun Guo
   Beijing University of Posts and Telecommunications

2. Active Appearance Model Search Using Partial Least Squares Regression
   Yongxin Ge[1], Min Chen[1], Martin Jagersand[2], Dan Yang[1]
   [1]Chongqing University
   [2]University of Alberta

3. Neighborhood Repulsed Correlation Metric Learning for Kinship Verification
   Haibin Yan[1], Xiuzhuang Zhou[2], Yongxin Ge[3]
   [1]Beijing University of Posts and Telecommunications
   [2]Capital Normal University
   [3]Chongqing University

4. Face Recognition Based on Random Feature
   Shasha Li, Weihong Deng
   Beijing University of Posts and Telecommunications

5. Improving Golf Swing Skills Using Intelligent Glasses
   Hua-Tsung Chen, Tzu-Wei Huang, Chien-Li Chou, Hou-Chun Tsai, Suh-Yin Lee
   National Chiao Tung University

14:30 Coffee/Tea Break

14:30 Poster/Demo Session MPD1 (Education Wing Atrium)

Session Chair: Shizheng Wang, Nanyang Technological University, Singapore

Posters

1. A Novel Depth Motion Vector Coding Exploiting Spatial and Inter-component Clustering Tendency
   Shampa Shahriyar[1], Manzur Murshed[2], Mortuza Ali[2], Manoranjan Paul[3]
   [1]Monash University
   [2]Federation University Australia
   [3]Charles Sturt University

2. Residual-consensus Driven Linear Matching
   Hao Wang
   Shanghai Jiao Tong University

3. An Adaptive Search Range Method for HEVC with the K-Nearest Neighbor Algorithm
   Yuchen Li, Yitong Liu, Hongwen Yang, Dacheng Yang
   Beijing University of Posts and Telecommunications

4. Detail-Preserving Tone Mapping for Low Dynamic Range Displays with Adaptive Gamma Correction
   Cheolkon Jung, Xiaoke Wang
   Xidian University

5. Perceptual Block Merging for Quadtree-Based Partitioning in HEVC Using Disorderly Concealment Effect
   Cheolkon Jung, Yao Chen, Qiaozhou Lin
   Xidian University

6. Image Denoising via Sparse Approximation Using Eigenvectors of Graph Laplacian
   Yibin Tang[1], Ying Chen[2], Ning Xu[3], Aimin Jiang[3], Yuan Gao[3]
   [1]College of Internet of Things
   [2]Southeast University
   [3]Hohai University

7. Weighted Transformable Spatial Pyramid and Scalable Query for Object Retrieval
   Ziou Zheng, Wenmin Wang, Ronggang Wang
   Peking University

8. Centroid Adapted Frequency Selective Extrapolation for Reconstruction of Lost Image Areas
   Wolfgang Schnurrer, Markus Jonscher, Jürgen Seiler, Thomas Richter, Michel Bätz, Andre Kaup
   Friedrich-Alexander-Universität Erlangen-Nürnberg

9. Power-Constrained Backlight Scaling Using Brightness Compensated Contrast-Tone Mapping Operation
   Cheolkon Jung, Lu Wang
   Xidian University

10. Rate Control for Screen Content Coding Based on Picture Classification
    Yaoyao Guo[1], Bin Li[2], Songlin Sun[1], Jizheng Xu[2]
    [1]Beijing University of Posts and Telecommunications
    [2]Microsoft

11. A Novel SSIM Index for Image Quality Assessment using a New Luminance Adaptation Effect Model in Pixel Intensity Domain
    Sung-Ho Bae, Munchurl Kim
    Korea Advanced Institute of Science and Technology

12. Enhanced Inter Prediction with Localized Weighted Prediction in HEVC
    Na Zhang[1], Yiran Lu[1], Xiaopeng Fan[1], Ruiqin Xiong[2], Debin Zhao[1], Wen Gao[2]
    [1]Harbin Institute of Technology;
    [2]Peking University

13. Parallel Intra Coding for HEVC on CPU plus GPU Platform
    Juncheng Ma[1], Falei LUO[2], Shanshe Wang[1], Nan Zhang[3], Siwei Ma[1]
    [1]Peking University
    [2]Institute of Computing Technology
    [3]School of Biomedical Engineering, Capital Medical University

14. Temporal Trimap Propagation using Motion-Assisted Shape Blending
    Jubin Johnson, Deepu Rajan, Hisham Cholakkal
    Nanyang Technological University

15. 3D Facial Clone based on Depth Patches
    Jerome Manceau, Catherine Soladié, Renaud Séguier
    CentraleSupelec

16. Fast Super-Resolution Algorithm using ELBP Classifier
    Dong-yoon Choi, Byung Cheol Song
    Inha University

17. An Efficient All Zero Block Detection Algorithm Based on Frequency Characteristics of DCT in HEVC
    Henglu Wei, WEI ZHOU, Xin Zhou, Zhemin Duan
    Northwestern Polytechnical University

18. Early SKIP Mode Decision Based on Bayesian Model for HEVC
    Qiang Hu, Zhiru Shi, Xiaoyun Zhang, Zhiyong Gao
    Shanghai Jiao Tong University;

19. Time and Energy Modeling of an INTRA-ONLY HEVC Encoder
    Rafael Rodriguez-Sanchez[1], Maria Teresa Alonso[2], Jose Luis Martinez[2], Rafael Mayo[1], Enrique S. Quintana-Orti[1]
    [1]Universitat Jaume I
    [2]Universidad de Castilla-La Mancha

20. Hybrid Angular Intra/Template Matching Prediction for HEVC Intra Coding
    Tao Zhang[1], Haoming Chen[2], Ming-Ting Sun[2], Debin Zhao[1], Wen Gao[3]
    [1]Harbin Institute of Technology
    [2]University of Washington
    [3]Peking University

21. Image Semantic Quality Assessment for Compression of Car-Plate Images
    Dandan Wang, Dong Liu, Fangdong Chen
    University of Science and Technology of China

22. Noise-aided Dynamic Range Compression using Selective Processing in a Statistics-dependent Stochastic Resonance Model
    Rajlaxmi Chouhan, Prabir Biswas
    IIT Kharagpur

23. Reducing HEVC Encoding Complexity Using Two-Stage Motion Estimation
    Gabriel Cebrián Márquez[1], Chi Ching Chi[2], Jose Luis Martinez[1], Pedro Ángel Cuenca Castillo[1], Mauricio Álvarez Mesa[2], Sergio Sanz Rodríguez[2], EBen Juurlink[2]
    [1]High-Performance Networks and Architectures (RAAP), Univ. of Castilla-La Mancha
    [2]Embedded Systems Architecture (AES). Technische Universität Berlin

24. Reference Picture Selection Using Checkerboard Pattern for Resilient Video Coding
    Joao Carreira[1], Pedro Assuncao[2], Sergio Faria[2], Erhan Ekmekcioglu[1], Ahmet Kondoz[1], Hyun Lim[3]
    [1]Loughborough University in London
    [2]Instituto de Telecomunicações/Instituto Politecnico de Leiria
    [3]Institute for Digital Technologies, Loughborough University

25. No-Reference Video Quality Assessment by HEVC Codec Analysis
    Xin Huang, Jacob Søgaard, Søren Forchhhammer
    Danmarks Tekniske Universitet

26. Fast Rate Distortion Optimized Quantization for HEVC
    Yongfei Zhang, Rui Tian, Jiangang Liu, Ning Wang
    Beihang University

27. Part-based Deep Network for Pedestrian Detection in Surveillance Videos
    Qi Chen, Wenhui Jiang, Yanyun Zhao, Zhicheng Zhao
    Beijing University of Posts and Telecommunications

Demos

1. Automatic Multiview Synthesis – Prototype Demo
    Michael Schaffner[12], Frank Gürkaynak[1], Hubert Kaeslin[1], Luca Benini[1], Aljosa Smolic[2]
    [1]Eidgenössische Technische Hochschule Zürich
    [2]Disney Research Zurich

2. Kvazaar HEVC Still Image Coding on Raspberry Pi 2 for Low-Cost Remote Surveillance
    Marko Viitanen, Ari Koivula, Jarno Vanne, Timo Hämäläinen
    Tampere University of Tech

3. Glasses-free Light Field 3D Display
   Shizheng Wang, Xiangyu Zhang, Qijia Cheng, Rajendran Kaviya, Phil Surman, Junsong Yuan, and Xiao Wei Sun
   Nanyang Technological University

4. Head Tracked Multiview 3D Display
   Phil Surman, Shizheng Wang, Xiangyu Zhang, Lei Zhang, Xiao Wei Sun
   Nanyang Technological University

5. Omnidirectional-view Three-dimensional Displays Using Multiple Mini-projectors
   Weitao Song[1], Qiudong Zhu[1], Dongdong Weng[1], Yue Liu[1], Yongtian Wang[2]
   [1]Beijing Institute of Technology
   [2]University of Connecticut

6. A Real-time Head Tracker for Autostereoscopic Display
   Guo Song, Phil Surman, Zhenfeng Zhuang, Xiao Wei Sun
   Nanyang Technological University

7. Viewable Floating Displays using Simple Secondary Optical Elements
   Zhenfeng Zhuang, Hongjuan Wang, Phil Surman, Xiao Wei Sun
   Nanyang Technological University

16:00 Oral Session MO3A: Visual Communications I (Auditorium)

Session Chair: Wen-Hsiao Peng, National Chiao Tung University, Taiwan

1. A Markov Decision based Rate Adaption Approach for Dynamic HTTP Streaming
   Chao Zhou[1], Chia-Wen Lin[2]
   [1]Huawei
   [2]National Tsinghua University, Taiwan

2. Reconstruction of Videos Taken by a Non-Regular Sampling Sensor
   Markus Jonscher, Jürgen Seiler, Michel Bätz, Thomas Richter, Wolfgang Schnurrer, Andre Kaup
   Friedrich-Alexander-Universität Erlangen-Nürnberg

3. Perceptual Video Quality Assessment for Adaptive Streaming Encoding
   Estêvão Monteiro[1], Ricardo Scholz[2], Carlos Ferraz[2], Tsang Ren[2], Roberto Barros[2]
   [1]Universidade Federal de Pernambuco
   [2]Centro de Informática

4. Delay-Constrained Rate Control For Real-Time Video Streaming Over Wireless Networks
   Yufeng Geng[1], Xinggong Zhang[1], Tong Niu[1], Chao Zhou[2]， Zongming Guo[1]
   [1]Peking University
   [2]Huawei

5. Classification-Aware Distortion Metric for HEVC Intra Coding
   Massimo Minervini, Sotirios Tsaftaris
   IMT Institute for Advanced Studies Lucca

16:00 Special Session MO3B: Image Sparse Representation and Its Applications (Lecture Room 2)

Organizers: Jiaying Liu, Peking University, China
Xinfeng Zhang, Nanyang Technological University, Singapore
Xianming Liu, Harbin Institute of Technology

1. Sparsity-based Joint Gaze Correction and Face Beautification for Conferencing Video
   Xianming Liu[12], Gene Cheung[1], Deming Zhai[2], Debin Zhao[2]
   [1]National Institute of Informatics
   [2]Harbin Institute of Technology

2. A Dual Structured-Sparsity Model for Compressive-Sensed Video Reconstruction
   Chen Zhao, Jian Zhang, Siwei Ma, Ruiqin Xiong, Wen Gao
   Peking University

3. Image Super-Resolution via Group Structured Sparse Representation
   Wenhan Yang, Jiaying Liu, Saboya Yang, Zongming Guo
   Peking University

4. Single Image Super-resolution via 2D Nonlocal Sparse Representation
   Na Qi[1], Yunhui Shi[1], Xiaoyan Sun[2], Wenpeng Ding[1], Baocai Yin[1]
   [1]Beijing University of Technology
   [2]Microsoft Research

5. Moiré Pattern Removal from Texture Images via Low-rank and Sparse Matrix Decomposition
   Fanglei Liu, Jingyu Yang, Huanjing Yue
   Tianjin University

18:30 | 20:30 Welcome Reception @ The Attic, NTU Campus Clubhouse (Next to NEC)

Tuesday, 15 December 2014

09:00 Keynote Speech 2 (Auditorium)

Computer Vision: From Recognition to Understanding
Dr Yong Rui, Microsoft Research Asia, China

10:00 Coffee/Tea Break

10:30 Oral Session TO1A: Image and Video Coding (Auditorium)

Session Chair: Hanzi Wang, Xiamen University, China

1. Deblocking Strength Prediction based CTU-level SAO Category Determination in HEVC Encoder
   Gaoxing Chen[1], Zhenyu Pei[1], Zhenyu Liu[2], Takeshi Ikenaga[1]
   [1]Waseda University
   [2]Tsinghua University

2. Efficient Background Picture Coding for Videos Obtained from Static Cameras
   Fangdong Chen, Li Li, Dong Liu, Houqiang Li, Zhuoyi Lv, Haitao Yang
   University of Science and Technology of China

3. An Optimized Probability Estimation Model for Binary Arithmetic Coding
   Jing Cui[1], Shanshe Wang[2], Nan Zhang[3], Siwei Ma[2]
   [1]Seoul National University
   [2]Peking University
   [3]Capital Medical University

4. Virtual View Distortion Estimation for Depth Map Coding
   Chao Yang, Ping An, Deyang Liu, Liquan Shen
   Shanghai University

5. Rearrangement Pixel Granularity Template Matching for Lossy Screen Content Picture Intra Coding
   Zheng Wang, Pin Tao, Lixin Feng
   Tsinghua University

10:30 Oral Session TO1B: Embedded Systems and Visual Information Processing (Lecture Room 1)

Session Chair: Munchurl Kim, Advanced Institute of Science and Technology, Korea

1. A High-Throughput Deblocking Filter VLSI Architecture for HEVC
   Wei Zhou, Jinzhi Zhang, Xin Zhou, Tongqing Liu
   Northwestern Polytechnical University

2. Enhancing Low-light Color Images Using An RGB-NIR Single Sensor
   Hiroki Yamashita, Daisuke Sugimura, Takayuki Hamamoto
   Tokyo University of Science

3. Cross-Modal Correlation Learning with Deep Convolutional Architecture
   Yan Hua[1], Hu Tian[2], Anni Cai[2], Ping Shi[1]
   [1]Communication University of China
   [2]Beijing University of Posts and Telecommunications

4. Supervised Dictionary Learning for Blind Image Quality Assessment
   Feng Shao
   Ningbo University

5. Subjective Rate-distortion Optimization in HEVC with Perceptual Model of Multiple Faces
   Yufan Liu[1], Haoji Hu[2], Mai Xu[1]
   [1]Beihang University
   [2]Zhejiang University

12:00 Lunch Break

13:00 Oral Session TO2A: Visual Communications II (Auditorium)

Session Chair: Guangtao Zhai, Shanghai Jiao Tong University, China

1. Q-Learning Based Control Algorithm for HTTP Adaptive Streaming
   Virginia Martín, Julián Cabrera, Narciso García
   Universidad Politécnica de Madrid, Grupo de Tratamiento de Imàgenes

2. Progressive Pseudo-Analog Transmission for Mobile Video Live Streaming
   Cuiling Lan[1], Dongliang He[2], Chong Luo[1], Feng Wu[2], Wenjun Zeng[1]
   [1]Microsoft Research
   [2]University of Science and Technology of China (USTC)

3. Compressive Sensing based Image Transmission with Side Information at the Decoder
   Xiaodan Song[1], Xiulian Peng[2], Jizheng Xu[2], Guangming Shi[1], Feng Wu[3]
   [1]Xidian University
   [2]Microsoft
   [3]University of Science and Technology of China

4. On Display-Camera Synchronization for Visible Light Communication
   Kaixuan Liu[1], Xiaolin Wu[1], Xiao Shu[2]
   [1]Shanghai Jiao Tong University
   [2]McMaster University

5. Efficient SAO Coding Algorithm for x265 Encoder
   Shibo Yin, Xiaoyun Zhang, Zhiyong Gao
   Shanghai Jiao Tong University

13:00 Special Session TO2B: Emerging Techniques for Glasses-Free 3D Displays (Lecture Room 1)

Organizers: Philip Surman, Shizheng Wang, Junsong Yuan, Yuanjin Zheng, and Xiao Wei Sun
Nanyang Technological University, Singapore

Invited Talk: Recent Progress in Glasses-Free 3D Displays at Beijing Institute of Technology

Yongtian Wang

Beijing Institute of Technology

1. Automatic Multiview Synthesis-Towards a Mobile System on a Chip
   Michael Schaffner[1], Frank K. Gurkaynak[1], Hubert Kaeslin[1], Luca Benini[1], Aljoscha Smolic[2]
   [1]ETH Zurich
   [2]Disney Research Zurich

2. Glasses-free 3D Display with Glasses-assisted Quality: Key Innovations for Smart Directional Backlight Autostereoscopy
   Hang Fan, Yangui Zhou, Haowen Liang, Jiahui Wang, Peter Krebs, Daikun Lin, Kunyang Li, Jianbang Su, Haiyu Chen, Xiaolu Wang, Jianying Zhou
   Sun Yat-Sen University

3. Region Adaptive Workload Prediction for Parallel View Synthesis
   Zhanqi Liu, Xin Jin, Qionghai Dai
   Tsinghua University

4. Multi-phase Joint Reconstruction Framework for Multi-view Video Compression using Block-based Compressive Sensing
   Mansoor Ebrahim
   Sunway University

5. Two-layer Optimized Light Field Display Using Depth Initialization
   Shizheng Wang, Zhenfeng Zhuang, Phil Surman, Junsong Yuan, Yuanjin Zheng, Xiao Wei Sun
   Nanyang Technological University

14:30 **Coffee/Tea Break**

15:00 | 16:00 **Panel Session: What's Next in Visual Communications and Image Processing? (Auditorium)**

Panel Chair: Wenjun Zeng, Microsoft Research Asia, China

Panelists:

Pierre Moulin, University of Illinois at Urbana-Champaign, USA

Yong Rui, Microsoft Research Asia, China

Simon See, nVIDIA Corporation

Ming-Ting Sun, University of Washington, USA

(Shuttle buses leaving NEC for Gardens by the Bay at 16:15, 16:30 and 16:45)

17:00 **Visit to Cloud Forest Conservatory @ Gardens by the Bay**

18:30 | 21:30 **Conference Banquet @ Gardens by the Bay**

Wednesday, 16 December 2015

09:00 Keynote Speech 3 (Auditorium)

Robust Hashing and its Applications to Content Identification and Retrieval
Professor Pierre Moulin, University of Illinois at Urbana-Champaign, USA

10:00 Coffee/Tea Break

10:30 Oral Session WO1A: 3D Videos and Video Coding I (Auditorium)

Session Chair: Xiaolin Wu, Shanghai Jiao Tong University, China

1. A Novel Light Field Super-resolution Framework Based on Hybrid Imaging System
   Judong Wu, Haoqian Wang, Xingzheng Wang, Yongbing Zhang
   Tsinghua University

2. Quad-tree based Inter-view Motion Prediction
   Ji Ma[1], Na Zhang[1], Xiaopeng Fan[1], Ruiqin Xiong[2], Debin Zhao[1]
   [1]Harbin Institute of Technology
   [2]Peking University

3. Modeling of Packet-Loss-Induced Distortion in 3-D Synthesized Views
   Pan Gao, Wei Xiang
   University of Southern QLD

4. An Adaptive Hierarchical QP Setting for Screen Content Coding
   Jiahao Li[1], Bin Li[2], Jizheng Xu[2], Ruiqin Xiong[1]
   [1]Peking University
   [2]Microsoft

5. Automatic Foreground Segmentation Using Light Field Images
   Xianyu Chen, Feng Dai, Yike Ma, Yongdong Zhang
   Institute of Computing Tech.

10:30 Oral Session WO1B: Multimedia Content Analysis (Lecture Room 1)

Session Chair: Wenjun Zeng, Microsoft Research Asia, China

1. Discriminatively-learned Global Image Representation Using CNN as a Local Feature Extractor for Image Retrieval
   Wei-Lin Ku, Hung-Chun Chou, Wen-Hsiao Peng
   National Chiao Tung University

2. Designing A Composite Dictionary Adaptively From Joint Examples
   Zhangyang Wang, Yingzheng Yang, Jianchao Yang, and Thomas Huang
   University of Illinois at Urbana-Champaign

3. Improving VLAD with Regional PCA Whitening
   Mingmin Zhen, Ronggang Wang, Wenmin Wang
   Peking University

4. Invariant Image Recognition under Projective Deformations: An Image Normalization Approach
   Xue Wei[1], Son Lam Phung[1], Abdesselam Bouzerdoum[1], Amine Bermak[2]
   [1]University of Wollongong
   [2]Hong Kong University of Science and Technology

5. Image Tag Completion and Refinement by Subspace Clustering and Matrix Completion
   Yuqing Hou, Zhouchen Lin
   Peking University

12:00 Lunch Break

13:00 Oral Session WO2A: 3D Videos and Video Coding II (Auditorium)

Session Chair: Joohee Kim, Illinois Institute of Technology, USA

1. Image-Guided Depth Propagation Using Superpixel Matching and Adaptive Autoregressive Model
   Jiji Cai, Cheolkon Jung
   Xidian University

2. Accurate Image Specular Highlight Removal Based on Light Field Imaging
   Chenxue Xu, Xingzheng Wang, Haoqian Wang, Yongbing Zhang
   Tsinghua University

3. Super-Resolution for Mixed-Resolution Multiview Images Using a Relative Frequency Response Estimation Method
   Thomas Richter, Annelie Habermann, Andre Kaup
   Friedrich-Alexander-Universität Erlangen-Nürnberg

4. Fast Depth Estimation using Spatio-temporal Prediction for Stereo-based Pedestrian Detection
   Amin Zarshenas, Maral Mesmakhosroshahi, Joohee Kim
   Illinois Institute of Technology

5. Structure-aware Priority Belief Propagation for Depth Estimation
   Kuanyu Ju, Botao Wang, Hongkai Xiong
   Shanghai Jiao Tong University

13:00 Special Session WO2B: Perceptual Visual Information Processing and Its Applications (Lecture Room 1)

Organizers: Yuming Fang, Jiangxi University of Finance and Economics, China
Hantao Liu, University of Hull, UK
Wen-Jiin Tsai, National Chiao-Tung University, Taiwan
Nevrez İmamoğlu, RIKEN, Brain Science Institute, Japan

1. Hybrid Image Retargeting
   Wen-Jiin Tsai, Chun-Fu Chen
   National Chiao-Tung University

2. Quality Assessment for Out-of-Focus Blurred Images
   Yutao Liu[1], Guangtao Zhai[3], Xianming LIU[12], Debin Zhao[1]
   [1]Harbin Institute of Technology
   [2]NII
   [3]Shanghai Jiao Tong University

3. Incremental SfM Based Lossless Compression of JPEG Coded Photo Album
   Hao Wu[1], Xiaoyan Sun[2], Jingyu Yang[1], Feng Wu[3]
   [1]Tianjin University
   [2]Microsoft Research
   [3]University of Science and Technology of China (USTC)

4. Visual Attention on Human Face
   Xiongkuo Min, Guangtao Zhai, Ke Gu
   Shanghai Jiao Tong University

5. Local Feature Aggregation for Blind Image Quality Assessment
   Jingtao Xu, Qiaohong Li, Peng Ye, Haiqing Du, Yong Liu
   Beijing University of Posts and Telecommunications

14:30 Coffee/Tea Break

14:30 Poster/Demo Session WPD1 (Education Wing Atrium)

Session Chair: Jingjing Meng, Nanyang Technological University, Singapore

Posters

1. An Efficient Probabilistic Occupancy Map-Based People Localization Approach
   Yen-Shuo Lin, Hua-Tsung Chen, Jen-Hui Chuang
   National Chiao Tung University

2. MI3: Multi-Intensity Infrared Illumination Video Database
   Chia-Hsin Chan, Hua-Tsung Chen, Wen-Chih Teng, Chin-Wei Liu, Jen-Hui Chuang
   National Chiao Tung University

3. Gradient Magnitude Similarity for Tone-Mapped Image Quality Assessment
   Yanping Lu[1], Qin Tu[1], Maozheng Zhao[1], Ran Gao[1], Aidong Men[1], Dongfei Wang[2]
   [1]Beijing University of Posts and Telecommunications
   [2]Academy of Broadcasting Science, SAPPRFT

4. A Fast Super-Resolution Method Based on Sparsity Properties
   Yuanchao Bai, Huizhu Jia, Xiaodong Xie, Rui Chen, Ming Jiang, Wen Gao
   Peking University

5. Joint Image Compression and Encryption Based on Alternating Transforms with Quality Control
   Peiya Li, Kwok-Tung Lo
   The Hong Kong Polytechnic University

6. Adaptive Motion Vector Resolution Prediction in Block-Based Video Coding
   Zhao Wang[1], Juncheng Ma[1], Falei LUO[2], Siwei Ma[1]
   [1]Peking University
   [2]Institute of Computing Technology

7. An Adaptive Inter CU Depth Decision Algorithm for HEVC
   Jie Liu, Huizhu Jia, Guoqing Xiang, Xiaofeng Huang, BinBin Cai, Chuang Zhu, Xiaodong Xie
   Peking University

8. Confidence Indicators Based Pose Estimation for High-Quality 3D Reconstruction Using Depth Image
   Ranga Ramanujam Srinivasan, Zhengyu Xia, Joohee Kim, Young Park
   Illinois Institute of Technology

9. Region-of-Interest Based Coding Scheme for Synthesized Video
   Wenbo Zhao[1], Jingjing Fu[2], Yan Lu[2], Shipeng Li[2], Debin Zhao[1]
   [1]Harbin Institute of Technology
   [2]Microsoft Research

10. Reducing Search Space for Fast Pedestrian Detection
    Maral Mesmakhosroshahi, Joohee Kim
    Illinois Institute of Technology

11. Graph Based Spatiotemporal Saliency Detection Incorporating Low and High Level Features
    Ran Gao[1], Qin Tu[1], Cuiwei Li[1], MaoZheng Zhao[1], Guangtao Fu[2], Bo Yang[1]
    [1]Beijing University of Posts and Telecommunications
    [2]Academy of Broadcasting Science, SAPPRFT

12. Visual Saliency Detection Based On Mutual Information In Compressed Domain
    Ran Gao[1], Qin Tu[1], Jun Xu[1], Yanping Lu[1], Wei Xie[2], Aidong Men[1]
    [1]Beijing University of Posts and Telecommunications
    [2]Academy of Broadcasting Science, SAPPRFT

13. Fast Uyghur Text Detection in Videos Based on Learning of Baseline Feature
    Chang Liu, Yi Fan Song, Zhicheng Zhao, Fei Su
    Beijing University of Posts and Telecommunications

14. Video Denoising Algorithm via Multi-scale Joint Luma–Chroma Bilateral Filter
    Yuanyuan Gao, Hai-Miao Hu, Jiawei Wu
    Beihang University

15. On Comparison of Intra Line Copy and Intra String Copy for HEVC Screen Content Coding
    Ru-Ling Liao, Chun-Chi Chen, Wen-Hsiao Peng
    National Chiao Tung University

16. Rate-Distortion Based Sparse Coding for Image Set Compression
    Xinfeng Zhang[1], Lin Weisi[1], Siwei Ma[2], Shiqi Wang[2], Wen Gao[2]
    [1]Nanyang Technological University (NTU)
    [2]Peking University

17. Joint Image Dehazing and Contrast Enhancement using the HSV Color Space
    Yi Wan, Qiqiang Chen
    Lanzhou University

18. Fast Parameter Estimation Algorithm for Sample Adaptive Offset in HEVC Encoder
    Sayed El Gendy, Ahmed Shalaby, Mohammed S. Sayed
    Egypt-Japan University of Science and Technology (EJUST)

19. HEVC to VP9 Transcoder
    Enrique de la Torre[1], Rafael Rodriguez-Sanchez[2], Jose Luis Martinez[1]
    [1]Universidad de Castilla-La Mancha
    [2]Universitat Jaume I

20. Decorrelation-Stretch based Cloud Detection for Total Sky Images
    Muming Zhao[1], Chongyang Zhang[1], Wenjun Zhang[1], Wei Li[2], Jian Zhang[3]
    [1]Shanghai Jiao Tong University
    [2]Technology Center of Shanghai Electric Power T&D Group, Shanghai;
    [3]University of Technology, Sydney

21. A HVS-Guided Approach for Real-time Image Interpolation
    Rui Chen, Huizhu Jia, Xiaodong Xie, Wen Gao
    Peking University

22. Reflection Removal for Stele Images via Sparse Signal Decomposition
    Jun Wang, Jingyu Yang
    Tianjin University

23. SimDSR: Simultaneous Detection and Segmentation for Repetitive Patterns
    Hao Wang
    Shanghai Jiao Tong University

24. Spatial Complexity Based Optimal Initial Quantization Parameter Determination
    Xin Liu, Xiaoqiang Guo, Haiying Wang, Jianyi Shi
    Beijing University of Posts and Telecommunications

25. Registration-Reliability based Strategy to Enhance Multi-Frame Super-Resolution Algorithms
    Qiang Song, Ruiqin Xiong, Xiaopeng Fan, Siwei Ma, Wen Gao
    Peking University

26. Enhancing Nighttime Surveillance Video via Gradient Fusion
    Wenbo Li[1], Xiaoyan Sun[2], Feng Wu[1]
    [1]University of Science and Technology of China (USTC)
    [2]Microsoft Research

Demos

1. Kvazaar HEVC Still Image Coding on Raspberry Pi 2 for Low-Cost Remote Surveillance
   Marko Viitanen, Ari Koivula, Jarno Vanne, Timo Hämäläinen
   Tampere University of Tech

2. Glasses-free Light Field 3D Display
   Shizheng Wang, Xiangyu Zhang, Qijia Cheng, Rajendran Kaviya, Phil Surman, Junsong Yuan, and Xiao Wei Sun
   Nanyang Technological University

3. Head Tracked Multiview 3D Display
   Phil Surman, Shizheng Wang, Xiangyu Zhang, Lei Zhang, Xiao Wei Sun
   Nanyang Technological University

4. A Real-time Head Tracker for Autostereoscopic Display
   Guo Song, Phil Surman, Zhenfeng Zhuang, Xiao Wei Sun
   Nanyang Technological University

5. Viewable Floating Displays using Simple Secondary Optical Elements
   Zhenfeng Zhuang, Hongjuan Wang, Phil Surman, Xiao Wei Sun
   Nanyang Technological University

16:00 Oral Session WO3A: Image and Video Processing II (Auditorium)

Session Chair: Hongkai Xiong, Shanghai Jiao Tong University, China

1. Optimized Truncation Model for Adaptive Compressive Sensing Acquisition of Images
   Xiangwei Li, Xuguang Lan, Meng Yang, Jianru Xue, Nanning Zheng
   Xi'an Jiao Tong University

2. Adaptive Local Nonparametric Regression for Fast Single Image Super-Resolution
   Yulun Zhang[1], Yongbing Zhang[1], Jian Zhang[2], Haoqian Wang[1], Xingzheng Wang[1]， Qionghai Dai[1]
   [1]Tsinghua University
   [2]Peking University

3. A Novel Image Quality Assessment based on an Adaptive Feature for Image Characteristics and Distortion Types
   Sung-Ho Bae, Munchurl Kim
   Korea Advanced Institute of Science and Technology

4. Ant Colony Optimization Inspired Saliency Detection Using Compressed Video Information
   Cuiwei Li[1], Qin Tu[1], Jun Xu[1], Ran Gao[1], Qiang Wang[2], Yongyu Chang[1]
   [1]Beijing University of Posts and Telecommunications
   [2]Academy of Broadcasting Science, SAPPRFT

5. Vegetation Coverage Detection from Very High Resolution Satellite Imagery
   Jiayuan Fan, Tao Chen, Shijian Lu
   *Institute for Infocomm Research, A*STAR, Singapore*

16:00 Special Session WO3B: Video Analysis and Understanding (Lecture Room 1)

Organizers: Yongxin Ge, Chongqing University, China
Xin Feng, Chongqing University of Technology, China

1. Image Set Querying Based Localization
   Lei Deng, Siyuan Huang, Yueqi Duan, Baohua Chen, Jie Zhou
   Tsinghua University

2. On Video Source Format of Screen Content Compression
   Xin Feng[1], Feng Yang[1], Hao Zhang[2], Ningning Shi[3], Zhan Ma[3]
   [1]Chongqing University of Technology
   [2]Central South University
   [3]Nanjing University

3. An Effective Algorithm for Motion Estimation of Human Faces
   Min Xu, Yuanyuan Shang, Kai Jin
   Capital Normal University

4. An Effective View and Time-invariant Action Recognition Method Based on Depth Videos
   Zhi Liu[1], Xin Feng[1], Yingli Tian[2]
   [1]Chongqing University of Technology
   [2]City University of New York

5. Efficient Image Retrieval Based Mobile Indoor Localization
   Ruoyun He[1], Yitong Wang[2], Qingyi Tao[1], Jianfei Cai[1], Ling-yu Duan[2]
   [1]Nanyang Technological University
   [2]Peking University

17:30 End of Program