Monday, 7 Nov., 10:00-11:40

O-01 High-Efficiency Video Coding (I): Inter and Intra Predictions

Time Monday, 7 Nov., 10:00-11:40
Location G302, Green Building 3F
Chairs Siwei Ma, Peking University, China
Shipeng Li, Microsoft Research Asia, China

O-01.1 Region Based Motion Vector Prediction Using Data Hiding and Decoder side Reasoning
Hongtao Wang¹, Meng Liu¹, Qian Li¹, Haitao Yang², Houqiang Li¹
¹University of Science and Technology of China, China
²Huawei Technologies Co., China

O-01.2 Advanced Spatial and Temporal Direct Mode for B Picture Coding
Yue Wang¹, Li Zhang², Siwei Ma², Wen Gao²
¹Graduate University of the Chinese Academy of Sciences, China
²Peking University, China

O-01.3 Exploiting Inter-frame Correlations In Compound Video Coding
Xiulian Peng¹, Jizheng Xu², Feng Wu²
¹University of Science and Technology of China, China
²Microsoft Research Asia, China

O-01.4 Prediction of DCT Coefficients Considering Motion Compensation Error Distributions
Julia Schmidt¹, Bernd Edler², Joern Ostermann¹
¹Gottfried Wilhelm Leibniz Universitaet Hannove, Germany
²International Audio Laboratories Erlangen, Germany

O-01.5 Rate Distortion Optimized Transform for Intra Block Coding for HEVC
Feng Zou¹, Oscar C. Au¹, Chao Pang¹, Jingjing Dai¹
¹The Hong Kong University of Science and Technology, Hong Kong
Emerging Algorithms for Image and Video Processing

Time: Monday, 7 Nov., 10:00-11:40
Location: G301, Green Building 3F
Chairs: Ching-Yung Lin, IBM Research, United States
        Yap-Peng Tan, Nanyang Technological University, Singapore

O-06.1 Extension of Non-Local Means (NLM) Algorithm with Gaussian Filtering for Highly Noisy Images
Sachin Chachada¹, Byung Tae Oh¹, Namgook Cho¹, San Phong², Daniel Manchala², C.-C. Jay Kuo¹
¹University of Southern California, United States
²Xerox Corporation, United States

O-06.2 Wide-Angle Distortion Correction by Hough Transform and Gradient Estimation
Tung-Ying Lee¹, Tzu-Shan Chang¹, Shang-Hong Lai¹, Kai-Che Liu¹, Hurng-Sheng Wu²
¹National Tsing Hua University, Taiwan
²Chang Bing Show Chwan Memorial Hospital, Taiwan

O-06.3 Video Deblurring Algorithm Using an Adjacent Unblurred Frame
Shin Cheol Jeong¹, Tae Hwan Lee¹, Byung Cheol Song¹, Yungu Lee², Yanglim Choi²
¹Inha University, Republic of Korea
²Samsung Electronics Co., Republic of Korea

O-06.4 An effective night video enhancement algorithm
Yunbo Rao¹, Zhongho Chen², Ming-ting Sun², Yu-Feng Hsu³, Zhengyou Zhang⁴
¹Electronic Science and Technology of China, China
²University of Washington, United States
³Industrial Technology Research Institute, Taiwan
⁴Microsoft Corp, United States

O-06.5 Mode-Dependent Intra Frame Interpolation for H.264/AVC Compressed Video
Xinwei Gao¹, Xiaopeng Fan¹, Debin Zhao¹
¹Harbin Institute of Technology, China
S-01 3D Video Processing and Communication (Special Session)

Time: Monday, 7 Nov., 10:00-11:40
Location: G201, Green Building 2F
Chairs: Xiangyang Ji, Tsinghua University, China

S-01.1 Fast Intra Mode Selection for Stereo Video Coding Using Epipolar Constraint
Guolei Yang\textsuperscript{1}, Luhong Liang\textsuperscript{2}, Wen Gao\textsuperscript{1}
\textsuperscript{1}Peking University, China
\textsuperscript{2}Institute of Computing Technology, Chinese Academy of Sciences, China

S-01.2 Considering Binocular Spatial Sensitivity in Stereoscopic Image Quality Assessment
Xu Wang\textsuperscript{1}, Sam Kwong\textsuperscript{1}, Yun Zhang\textsuperscript{2}
\textsuperscript{1}City University of Hong Kong, Hong Kong
\textsuperscript{2}Shenzhen Institutes of Advanced Technology, China

S-01.3 Joint Just Noticeable Difference Model Based on Depth Perception for Stereoscopic Images
Xiaoming Li\textsuperscript{1}, Yue Wang\textsuperscript{2}, Debin Zhao\textsuperscript{1}, Tingting Jiang\textsuperscript{3}, Nan Zhang\textsuperscript{4}
\textsuperscript{1}Harbin Institute of Technology, China
\textsuperscript{2}Graduate University of the Chinese Academy of Sciences, China
\textsuperscript{3}Peking University, China
\textsuperscript{4}Capital Medical University, China

S-01.4 Stereoscopic Video Coding in AVS
Xiangyang Ji\textsuperscript{1}, Yongbing Zhang\textsuperscript{1}, Lu Yu\textsuperscript{2}, Gwo Giun Lee\textsuperscript{3}
\textsuperscript{1}Tsinghua University, China
\textsuperscript{2}Zhejiang University, China
\textsuperscript{3}National Cheng Kung University, Taiwan

S-01.5 Visual system using ray-based image sensors and electronic holography display toward ultra-realistic communication
Kenji Yamamoto\textsuperscript{1}
\textsuperscript{1}National Institute of Information and Communications Technology, Japan
Monday, 7 Nov., 10:00-11:40

P-02 Computer Vision Techniques for Human Machine Interactions
Time Monday, 7 Nov., 10:00-11:40
Location Aisle, Green Building 2F
Chairs Jenn-Jier James Lien, National Cheng Kung University, Taiwan
Sheau-Fang Lei, National Cheng Kung University, Taiwan

P-02.1 Screen-Strategy Analysis in Broadcast Basketball Video using Player Tracking
Tsung-Sheng Fu¹, Hua-Tsung Chen¹, Chien-Li Chou¹, Wen-Jiin Tsai¹, Suh-Yin Lee¹
¹National Chiao Tung University, Taiwan

P-02.2 3D Ball Trajectory Reconstruction From Single-camera Sports Video For Free Viewpoint Virtual Replay
Hua-Tsung Chen¹, Chien-Li Chou¹, Wen-Jiin Tsai¹, Suh-Yin Lee¹
¹National Chiao Tung University, Taiwan

P-02.3 Human and Car Identification using Motion Vector in H.264 Compressed Video
Wei Chen¹, Quan-Xi Yang¹, Ke-Wei Lin¹, Chung-Lin Huan¹
¹National Tsing-Hua University, Taiwan

P-02.4 Weighted sparse coding residue minimization for visual tracking
Junchi Yan¹, Minglei Tong²
¹IBM Research China, China
²Shanghai University of Electric Power Shanghai, China

P-02.5 ROBUST 3D OBJECT POSE ESTIMATION FROM A SINGLE 2D IMAGE
Chia-Ming Cheng¹, Hsiao-Wei Chen¹, Tung-Ying Lee¹, Shang-Hong Lai¹, Ya-Hui Tsai²
¹National Tsing Hua University, Taiwan
²Industrial Technology Research Institute, Taiwan
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<td>Jin Li, Microsoft Corporation, United States</td>
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<td>3D Video (I): Depth and Texture Coding</td>
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<td>O-04.1</td>
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<td>Fabian Jäger(^1)</td>
<td>Fabian Jäger(^1)</td>
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<td>RWTH Aachen University, Germany</td>
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<td>Da-Hyun Yoon(^1), Yo-Sung Ho(^1)</td>
<td>Da-Hyun Yoon(^1), Yo-Sung Ho(^1)</td>
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<td>Gwangju Institute of Science and Technology, Republic of Korea</td>
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<td>Zhuoying Zeng(^1), Xin Jin(^1), Satoshi Goto(^1)</td>
<td>Zhuoying Zeng(^1), Xin Jin(^1), Satoshi Goto(^1)</td>
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<td>Qifei Wang(^1), Jin Li(^2), Gary J. Sullivan(^2), Ming-Ting Sun(^3)</td>
<td>Qifei Wang(^1), Jin Li(^2), Gary J. Sullivan(^2), Ming-Ting Sun(^3)</td>
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<td>Priority Pyramid Based Bit Allocation for Multiview Video Coding</td>
<td>Long Xu(^1), Sam Kwong(^1), Teisong Zhao(^1), Yu Zhou(^2)</td>
<td>Long Xu(^1), Sam Kwong(^1), Teisong Zhao(^1), Yu Zhou(^2)</td>
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**O-09** Large-scale multimedia content processing and analysis

Time: Monday, 7 Nov., 13:00-15:00  
Location: G301, Green Building 3F  
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Yen-Kuang Chen, Intel Corporation, United States

O-09.1 A Pivot-based Filtering Algorithm for Enhancing Query Performance of LSH  
Lei Zhang¹, Xiao-guang Gu¹, Yongdong Zhang¹, Dong-ming Zhang¹, Jin-tao Li¹  
¹Chinese Academy of Sciences, China

O-09.2 Reconfigurable Peer-to-Peer Network Image  
Chun-Rong Su¹, Jiann-Jone Chen¹, Jun-Lin Liu², De-Hui Shiue²  
¹National Taiwan University of Science and Technology, Taiwan  
²Industrial Technology Research Institute, Taiwan

O-09.3 Inferring Users’ Image-Search Goals with Pseudo-images  
Zheng Lu¹, Xiaokang Yang¹, Weiyao Lin¹, Xiaolin Chen¹, Hongyuan Zha²  
¹Shanghai Jiao Tong University, China  
²Georgia Institute of Technology, United States

O-09.4 Image Indexing Using 3D Model For Image Retrieval  
Soo-Chang Pei¹, Hsin-Hua Liu¹, Jun-Hong Chen²  
¹National Taiwan University, Taiwan  
²Oriental Institute of Technology, Taiwan

O-09.5 An Improved Automatic Commercial Detection System  
Shih-Hsuan Yang¹, Cyong-Wun Fan¹, Yu-Cheng Chen¹  
¹National Taipei University of Technology, Taiwan
**O-14 Embedded Systems and Architecture Implementations**

*Time*  
Monday, 7 Nov., 13:00-15:00

*Location*  
G201, Green Building 2F

*Chairs*  
Shao-Yi Chien, National Taiwan University, Taiwan  
Peter H. N. de With, Eindhoven University of Technology, Netherlands

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**O-14.1 Real-time Two-Stage SPECK (TSSP) Design and Implementation for Scalable Video Coding on Embedded Systems**

Marijn J. H. Loomans¹, Cornelis J. Koeleman¹, Peter H. N. de With²  
¹VDG Security, Netherlands  
²Eindhoven University of Technology, Netherlands

**O-14.2 A Novel Parallel Encoding Framework for Scalable Video Coding**

Kai Yao¹, Jun Sun¹, Jiaying Liu¹, Zongming Guo¹, Longshe Huo²  
¹Peking University, China  
²China Unicom Research Institute, China

**O-14.3 A Double-Filter Design of Deblocking Filter for H.264/AVC Macroblock Adaptive Frame Field Coding**

Chi-Chang Kuo¹  
¹Industrial Technology Research Institute, Taiwan

**O-14.4 A 94fps View Synthesis Engine for HD1080p Video**

Fu-Jen Chang¹, Yu-Cheng Tseng¹, Tian-Sheuan Chang¹  
¹National Chiao-Tung University, Taiwan
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**P-01.1 Adaptive Integer-precision Lagrange Multiplier Selection for High Performance AVS Video Coding**  
Haibing Yin¹, Bingqian Zhou¹, Chuang Zhu², Huizhu Jia²  
¹China Jiliang University, China  
²Peking University, China

**P-01.2 Divider-Free Architecture for Fast Sub-pixel Motion Prediction in H.264/AVC**  
Wei-Yu Chiang¹, Chih-Hung Kuo¹  
¹National Cheng Kung University, Taiwan

**P-01.3 Low Power Parallel Surveillance Video Encoding System Based on Joint Power-Speed Scheduling**  
Xin Jin¹, Satoshi Goto¹  
¹Waseda University, Japan

**P-01.4 Efficient Dead-Zone Plus Uniform Threshold Scalar Quantization of Generalized Gaussian Random Variables**  
Yizhou Duan¹, Jun Sun¹, Jiaying Liu¹, Zongming Guo¹  
¹Peking University, China

**P-01.5 Bit-depth Scalable Video Coding Using Error Residual Correction**  
Shyam Sundar R¹, Pandu Rangan C¹  
¹Indian Institute of Technology, India
Monday, 7 Nov., 15:20-17:00

O-15  Error-Resilient Visual Communications
Time  Monday, 7 Nov., 15:20-17:00
Location  G302, Green Building 3F
Chairs  Yueh-Min Huang, National Cheng Kung University, Taiwan
        Nadeem Ahmad Khan, Lahore University of Management Sciences, Pakistan

O-15.1  A Novel Video Coding Scheme for Lossy Networks with Scalable Bit-stream
        Adnan Ahmad¹, Huma Noor¹, Nadeem Khan¹
        ¹Lahore University of Management Sciences, Pakistan

O-15.2  Real-Time Forward Error Correction for Video Transmission
        Jimin Xiao¹, Tammam Tillo¹, Chunyu Lin², Yao Zhao²
        ¹Xian Jiaotong Liverpool University, China
        ²Beijing Jiaotong University, China

O-15.3  Unequal channel error protection of multiple description codes for wireless media streaming
        Tanay Dey¹, Abdul Bais¹, Nima Sarshar¹
        ¹University of Regina, Canada
**S-04**  
**Advanced Techniques for Distributed Video Processing and Communications (I) (Special Session)***

**Time**  
Monday, 7 Nov., 15:20-17:00

**Location**  
G301, Green Building 3F

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Weiyao Lin, Shanghai Jiao Tong University, China

**S-04.1**  
**CROSS-VIEW POST-FILTERING FOR FIDELITY ENHANCEMENT ON ASYMMETRIC CODING OF 3D VIDEO**  
Yin Zhao\(^1\), Lu Yu\(^1\), Zhenzhong Chen\(^2\)  
\(^1\)Zhejiang University, China  
\(^2\)Nanyang Technological University, Singapore

**S-04.2**  
**Distributed Video Coding: a Promising Solution for Distributed Wireless Video Sensors or Not?**  
Chieh-Chuan Chiu\(^1\), Shaoyi Chien\(^1\), Chia-han Lee\(^2\), V. Srinivasa Somayazulu\(^3\), Yen-Kuang Chen\(^3\)  
\(^1\)National Taiwan University, Taiwan  
\(^2\)Academia Sinica, Taiwan  
\(^3\)Intel-NTU Connected Context Computer Center, Taiwan

**S-04.3**  
**Progressive Adaptive Correlation Estimation (PACE) for WZVC**  
Xiaopeng Fan\(^1\), Chang Zhao\(^1\), Oscar C. Au\(^2\)  
\(^1\)Harbin Institute of Technology, China  
\(^2\)Hong Kong University of Science and Technology, Hong Kong

**S-04.4**  
**Improved Spatial Aided Low Delay Wyner-Ziv video Coding by Wavelet Shrinkage**  
Bo Wu\(^1\), Nan Zhang\(^1\), Siwei Ma\(^2\), Wen Gao\(^2\)  
\(^1\)Capital Medical University, China  
\(^2\)Peking University, China

**S-04.5**  
**CONDITIONAL RANDOM FIELD BASED SIDE-INFORMATION FUSION FOR DISTRIBUTED MULTI-VIEW VIDEO CODING**  
Yongsheng Zhang\(^1\), Hongkai Xiong\(^1\), Hao Wang\(^1\), Chang Wen Chen\(^2\)  
\(^1\)Shanghai Jiao Tong University, China  
\(^2\)State University of New York at Buffalo, United States
S-06  MPEG 3D Graphics (Special Session)

**Time**  Monday, 7 Nov., 15:20-17:00

**Location**  G201, Green Building 2F

**Chairs**  Euee S. Jang, Hanyang University, Republic of Korea

**S-06.1**  MPEG Reconfigurable Graphics Coding Framework: Overview and Design of 3D Mesh Coding

*Sinwook Lee¹, Taehee Lim¹, Euee S. Jang¹, Ji Hyung Lee², Seungwook Lee²*

¹Hanyang University, Republic of Korea
²Electronics and Telecommunications Research Institute Daejeon, Republic of Korea

**S-06.2**  Multi-Resolution 3D Mesh Coding in MPEG

*Khaled Mammou¹, Christophe Dehais¹, Faten Chaieb², Ghorbel Faouzi²*

¹FittingBox, France
²University of Manouba/ENSI, France

**S-06.3**  Multi-Resolution Texture Coding for Multi-Resolution 3D Meshes

*David Fuentes Sánchez¹, Rafael Pagés Scasso¹, Francisco Morán Burgos¹*

¹Universidad Politécnica de Madrid, Spain
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**P-07 Compressive Sensing and Protection for Visual Signals**

**Time**  Monday, 7 Nov., 15:20-17:00  
**Location** Aisle, Green Building 2F  
**Chairs** Masahiro Iwahashi, Nagaoka University of Technology, Japan  
Daniel P. K. Lun, Hong Kong Polytechnic University, Hong Kong

**P-07.1 Lossless Integer Color Transform for Four Color Components**
Masahiro IWAHASHI\(^1\), Masanori OGAWA\(^1\), Hitoshi KIYA\(^2\)
\(^1\)Nagaoka University of Technology, Japan  
\(^2\)Tokyo Metropolitan University, Japan

**P-07.2 Compressive Sensing Image Recovery Based on equalization quantization noise model**
Zhen Zhang\(^1\), Yunhui Shi\(^1\), Baocai Yin\(^1\)
\(^1\)Beijing University of Technology, China

**P-07.3 Multiple-image Compressed Encryption and Decryption by Compressive Holography**
Hong Di\(^1\), Kangfeng Zheng\(^1\), Xin Zhang\(^2\)
\(^1\)Beijing University of Posts and Telecommunications, China  
\(^2\)Chinese Academy of Sciences, China

**P-07.4 An Adaptive H.264 Video Protection Scheme for Video Conferencing**
Fangchao Wang\(^1\), Wenjun Wu\(^1\), Yihua Lou\(^1\), Aixuan Yang\(^1\)
\(^1\)Beihang University, China
Tuesday, 8 Nov., 10:00-11:40

**O-02** High-Efficiency Video Coding (II): Encoder Optimization

**Time** Tuesday, 8 Nov., 10:00-11:40  
**Location** G302, Green Building 3F  
**Chairs** Tihao Chiang, Ambarella, United States/Taiwan  
Matthias Narroschke, Panasonic R&D Center Germany, Germany

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**O-02.1** Parallelized deblocking filter for hybrid video coding  
Matthias Narroschke\(^1\)  
\(^1\)Panasonic R&D Center Germany GmbH, Germany

**O-02.2** Content-Adaptive Encoder Optimization of the H.264/AVC Deblocking Filter for Visual Quality Improvement  
Konstantin Hanke\(^1\), Peter Hosten\(^1\), Fabian Jäger\(^1\)  
\(^1\)RWTH Aachen University, Germany

**O-02.3** One-Pass Encoding Algorithm for Adaptive Loop Filter in High-Efficiency Video Coding  
Chia-Yang Tsai\(^1\), Ching-Yeh Chen\(^1\), Chih-Ming Fu\(^1\), Yu-Wen Huang\(^1\), Shawmin Lei\(^1\)  
\(^1\)MediaTek Inc., Taiwan

**O-02.4** Fast Mode Decision Algorithm for Intra Prediction in HEVC  
Liang Zhao\(^1\), Li Zhang\(^1\), Siwei Ma\(^2\), Debin Zhao\(^2\)  
\(^1\)Harbin Institute of Technology, China  
\(^2\)Peking University, China

**O-02.5** Fast Mode Decision Algorithm for Residual Quadtree Coding in HEVC  
Su-Wei Teng\(^1\), Hsueh-Ming Hang\(^1\), Yi-Fu Chen\(^2\)  
\(^1\)National Chiao-Tung University, Taiwan  
\(^2\)Chunghwa Telecom Co, Taiwan
O-08 Compressive Sensing in Image and Video Processing

Time: Tuesday, 8 Nov., 10:00-11:40
Location: G301, Green Building 3F
Chairs: Shih-Hsuan Yang, National Taipei University of Technology, Taiwan
        Wen-Hsiao Peng, National Chiao Tung University, Taiwan

O-08.1 Image Reconstruction from Random Samples with Parametric and Nonparametric Modeling
        Guangtao Zhai¹, Xiaokang Yang¹
        ¹Shanghai Jiao Tong University, China

O-08.2 High-Quality Image Restoration from Partial Random Samples in Spatial Domain
        Jian Zhang¹, Ruiqin Xiong², Siwei Ma², Debin Zhao¹
        ¹Harbin Institute of Technology, China
        ²Peking University, China

O-08.3 An Unequally Protected Distributed Compressed Video Sensing Algorithm
        Bin Li¹, Xuqi Zhu¹, Yu Liu¹, Lin Zhang¹
        ¹Beijing University of Posts and Telecommunications, China

O-08.4 Compressive Sensing based Video Scrambling for Privacy Protection
        Lingling Tong¹, Feng Dda¹, Yongdong Zhang¹, Jintao Li¹, Dongming Zhang¹
        ¹Chinese Academy of Sciences, China
S-02  Advanced 3DTV/FTV  (Special Session)

Time  Tuesday, 8 Nov., 10:00-11:40
Location  G201, Green Building 2F
Chairs  Masayuki Tanimoto, Nagoya University, Japan

S-02.1  Challenges in 3D Video Standardization
Karsten Müller¹, Philipp Merkle¹
¹Fraunhofer Institute for Telecommunications – Heinrich Hertz Institute, Germany

S-02.2  Three-Dimensional Television System Based on Integral Photography
Tomoyuki Mishina¹
¹Japan Broadcasting Corporation (NHK), Japan

S-02.3  Vision Field Capture for Advanced 3DTV Applications
Xun Cao¹, Yebin Liu¹, Xiangyang J¹, Qionghai Dai¹
¹Tsinghua University, China

S-02.4  FTV and All-Around 3DTV
Masayuki Tanimoto¹
¹Nagoya University, Japan

S-02.5  Depth-Enhanced Compression for 3D Video
Jacek Konieczny¹, Marek Domański¹
¹Poznań University of Technology, Poland
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<td>Shu-Mei Guo, National Cheng Kung University, Taiwan</td>
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**P-03.1 Two-Stage Method for Salt-and-Pepper Noise Removal Using Statistical Jump Regression Analysis**

Liang Zhang¹, Jian-Zhou Zhang²

¹Chinese Academy of Sciences, China  
²Sichuan University, China

**P-03.2 A LOW COMPLEXITY DUAL MODE EDGE DETECTOR**

Lih-Jen Kau¹, Chih-Shen Chen¹

¹National Taipei University of Technology, Taiwan

**P-03.3 Zero Spectrum Removal Using Joint Bilateral Filter for Fourier Transform Profilometry**

Tai-Chiu Hsung¹, Daniel Pak-Kong Lun¹, William W. L. Ng¹

¹The Hong Kong Polytechnic University, Hong Kong

**P-03.4 Robust Orthogonal Particle Swarm Optimization for Estimating the Fundamental Matrix**

Kai Hsuan Chan¹, Cheng-Yuan Tang², Yi-Leh Wu³, Maw Kae Hor¹

¹National Chengchi University, Taiwan  
²Huafan University, Taiwan  
³National Taiwan University, Taiwan

**P-03.5 A New Global-based Video Enhancement Algorithm by Fusing Features of Multiple Region-of-Interests**

Ning Xu¹, Weiyao Lin¹, Yu Zhou¹, Yuanzhe Chen¹, Zhenzhong Chen², Hongxiang Li³

¹Shanghai Jiao Tong University, China  
²Nanyang Technological University, Singapore  
³North Dakota State University, United States

**P-03.6 Motion Compensated Frame Interpolation using Skipped Frame Information**

Yu-Jie Huang¹, Yin-Yi Lin¹

¹National Central University, Taiwan
**O-10**  
**Representation and Analysis of Visual Signals**

**Time**  
Tuesday, 8 Nov., 13:00-15:00

**Location**  
G302, Green Building 3F

**Chairs**  
Hsu-Feng Hsiao, National Chiao Tung University, Taiwan  
Andrey S. Krylov, Lomonosov Moscow State University, Russian

**O-10.1 A Time, Space and Color-Based Classification of Different Weather Conditions**  
Xudong Zhao¹, Peng Liu¹, Jiafeng Liu¹, Xianglong Tang¹  
¹Harbin Institute of Technology, China

**O-10.2 Illumination-Robust Face Recognition via Sparse Representation**  
Koji Inoue¹, Yoshimitsu Kuroki¹  
¹Kurume National College of Technology, Japan

**O-10.3 FACE RECOGNITION USING AN ENHANCED AGE SIMULATION METHOD**  
Tian Xia¹, Jiwen Lu¹, Yap-Peng Tan¹  
¹Nanyang Technological University, Singapore

**O-10.4 Gauss-Laguerre Keypoints Descriptors for Color Images**  
Andrey S. Krylov¹, Dmitry V. Sorokin¹  
¹Lomonosov Moscow State University, Russian Federation

**O-10.5 Contextual Saliency**  
Jialue Fan¹, Ying Wu¹  
¹Northwestern University, United States

**O-10.6 Psychophysical Assessment of Perceived Interest in Natural Images: The ROI-D Database**  
Ulrich Engelke¹, Hans-Jurgen Zepernick¹  
¹Blekinge Institute of Technology, Sweden
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<th>Authors</th>
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| P-04    | Advanced Techniques and Applications for 3D Video                   | Din-Yuen Chan, National Chiayi University, Taiwan  
Guangming Shi, Xidian University, China                                                     |
| P-04.1  | New Stereo Video Coding In Redundant Wavelet Domain                 | Ahmed Suliman¹, Robert Li¹  
¹North Carolina A & T State University, United States                                           |
| P-04.2  | Decoder Picture Buffer Reduction based Effective Reference Frame Selection algorithm for Multiview Video Coding | Pei-Jun Lee¹, Kuei-Ting Kuo¹, Jin-Shun Huang¹  
¹National Chi Nan University, Taiwan                                                          |
| P-04.3  | Two-view to N-view Conversion without Depth                          | Augustine Tsai¹, Meng-Hsuan Chia¹, Wen-Kai Liu¹  
¹Institute for Information Industry, Taiwan                                                    |
| P-04.4  | Real-time free-viewpoint DIBR on GPUs for large base-line multi-view 3DTV videos | Luat Do¹, German Bravo², Svitlana Zinger¹, Peter H. N. de With¹  
¹Eindhoven University of Technology, Netherlands  
²ViNotion B.V., Netherlands                                                                   |
| P-04.5  | MULTIVIEW ENCODER PARALLELIZED FAST SEARCH REALIZATION ON NVIDIA CUDA | Chih-Te Lu¹, Hsueh-Ming Hang²  
¹National Taipei University of Technology, Taiwan  
²National Chiao-Tung University, Taiwan                                                       |
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<td>Shao-Yi Chien, National Taiwan University, Taiwan</td>
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**D-01 Demonstration Session**

**D-01.1 Recent Progress on Perceptual Video Coding**  
*Po-Yen Su¹, Yi-Hsin Huang¹, Tao-Sheng Ou¹, Homer H. Chen¹*  
¹National Taiwan University, Taiwan

**D-01.2 FPGA Design for Image Processing Using a GUI of a Web-Based VHDL Code Generator**  
*Thomas Schumann¹, Anita Ratna Dewi Susanti¹*  
¹Hochschule Darmstadt-University of Applied Sciences, Germany

**D-01.3 Hardware Encoder and Decoder for 3-D Stereo Video Streaming Applications**  
*Wen-Hao Chung¹, Yuan-Teng Chang¹, Ce-Min Fang¹, Erh-Chung Ke¹, Yu-Min Wu¹, Chi-Chang Kuo¹*  
¹Industrial Technology Research Institute, Taiwan

**D-01.4 Perceptual Multi-Cues 2D-to-3D Conversion System**  
*Chung-Te Li¹, Yen-Chieh Lai¹, Chien Wu¹, Liang-Gee Chen¹*  
¹National Taiwan University, Taiwan
O-03 High-Efficiency Video Coding (III): Entropy Coding and Scalable Extension

Time: Wednesday, 9 Nov., 10:00-11:40
Location: G302, Green Building 3F
Chairs: Yin-Yi Lin, National Central University, Taiwan
        Din-Yuen Chan, National Chiayi University, Taiwan

O-03.1 A Parallel Context Model for Level Information in CABAC
Min Gao¹, Xiaopeng Fan¹, Qiang Wang¹, Debin Zhao¹, Wen Gao²
¹Harbin Institute of Technology, China
²Peking University, China

O-03.2 A novel high efficiency fixed length coding for video compression based on symbol probability estimation
Kazuo Sugimoto¹, Ryoji Hattori¹, Shun-ichi Sekiguchi²
¹Mitsubishi Electric Corporation, Japan

O-03.3 Parsing Robustness in High Efficiency Video Coding - Analysis and Improvement
Bin Li¹, Jizheng Xu², Houqiang Li¹
¹University of Science and Technology of China, China
²Microsoft Research Asia, China

O-03.4 Adaptive Raster Scan for Slice/Frame Coding
Xin Jin¹, Satoshi Goto¹
¹Waseda University, Japan
**Wednesday, 9 Nov., 10:00-11:40**

**O-07** Computer Vision for Detection, Tracking and Surveillance  
**Time** Wednesday, 9 Nov., 10:00-11:40  
**Location** G301, Green Building 3F  
**Chairs** Shawmin Lei, MediaTek Inc., Taiwan  
Gwo Giun Lee, National Cheng Kung University, Taiwan

**O-07.1** Dynamic Video Object Detection with Single PTU Camera  
Yun Ye¹, Song Ci¹, Yanwei Liu², Hui Tang²  
¹University of Nebraska-Lincoln, United States  
²Chinese Academy of Sciences, China

**O-07.2** Video Object Tracking using Graph Cuts and Location-Dependent Appearance Models  
Peter Hosten¹, Yu Yao¹  
¹RWTH Aachen University, Germany

**O-07.3** Real-time Hand Tracking on Depth Images  
Chia-Ping Chen¹, Yu-Ting Chen¹, Ping-Han Lee¹, Yu-Pao Tsai¹, Shawmin Lei¹  
¹MediaTek Inc., Taiwan

**O-07.4** Estimating Initial Pose by Utilizing Symmetric Property for Real-Time Intelligent Transportation System  
Hui-Zhen Gu¹, Suh-Yin Lee¹  
¹National Chiao-Tung University, Taiwan

**O-07.5** Real-Time Multi-Camera Air Surveillance System Using a Simultaneous Estimation, Filtering and Rejection Tracking Algorithm  
Chung-Hsien Huang¹, Cheng-Chuan Chou¹, Yu-Feng Hsu¹, Shih Ming Yu¹  
¹Industrial Technology Research Institute, Taiwan
Wednesday, 9 Nov., 10:00-11:40

**S-03** Advanced Techniques for Content-Based Image/Video Resizing (Special Session)

- **Time**: Wednesday, 9 Nov., 10:00-11:40
- **Location**: G201, Green Building 2F
- **Chairs**: Chia-Hung Yeh, National Sun Yat-Sen University, Taiwan

**S-03.1** Fast Deconvolution-Based Image Super-Resolution Using Gradient Prior

Chun-Yu Lin¹, Chih-Chung Hsu¹, Chia-Wen Lin¹, Li-Wei Kang²

¹National Tsing Hua University, Taiwan
²Academia Sinica, Taiwan

**S-03.2** IMAGE RETARGETING BASED ON THE SENSITIVITY-TUNED VISUAL SIGNIFICANCE MAP

Yuming Fang¹, Zhenzhong Chen¹, Weisi Lin¹, Chia-Wen Lin¹, Chia-Ming Tsai¹

¹National Tsing Hua University, Taiwan

**S-03.3** Learning of Context-Aware Single Image Super-Resolution

Min-Chun Yang¹, Ting-Yao Hu¹, Chang-Heng Wang¹, Yu-Chiang Frank Wang²

¹National Taiwan University, Taiwan
²Academia Sinica, Taiwan

**S-03.4** Motion-Tolerance Contextual Visual Saliency Preserving for Video Retargeting

Duan-Yu Chen¹, Yi-Shou Luo¹, Bo-Chiang Shie¹

¹Yuan Ze University, Taiwan

**S-03.5** A Low-Complexity Upsampling Technique for H.264

Wei-Chi Chen¹, Ming Sui Lee¹

¹National Taiwan University, Taiwan
P-06 Video Transcoding/Adaptation and Robust Streaming

Time: Wednesday, 9 Nov., 10:00-11:40
Location: Aisle, Green Building 2F
Chairs: Yu-Ning Dong, Nanjing University of Posts and Telecommunications, China
        Mei-Juan Chen, National Dong-Hwa University, Taiwan

P-06.1 Region-of-Interest Segmentation Based on Bayesian Theorem for H.264 Video Transcoding
       Shu-Fen Huang¹, Mei-Juan Chen¹, Mian-Shiuan Li¹
       ¹National Dong-Hwa University, Taiwan

P-06.2 Low-Complexity Intra Prediction Algorithm for Video Down-sizing Transcoder
       Zhuo Yi Lu¹, Ke Bin Jia¹, Wan Chi Siu²
       ¹Beijing University of Technology, China
       ²Hong Kong Polytechnic University, Hong Kong

P-06.3 Resource aware real-time stream adaptation of MPEG-4 video in constrained bandwidth networks
       Anand Kotra¹, Gerhard Fohler²
       ¹Private
       ²Technische Universität Kaiserslautern, Germany

P-06.4 Interleaving-Based Error Concealment for Scalable Video Coding System
       Bin Zhao¹
       ¹Purdue University, United States

P-06.5 Data Hiding Based Error Recovery for H.264 Video Streaming over Wireless Networks
       CHEN Hai-bo¹, DONG Yu-ning¹, SHI Haixian²
       ¹Nanjing University of Posts and Telecom, China
       ²Nanjing Agricultural University, China
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<td>Lifeng Sun, Tsinghua University, China</td>
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<td>Ismael Daribo, Hiroshima City University, Japan</td>
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**O-05 3D Video (II): Depth/Disparity Estimation and Signal Acquisition**

**O-05.1 Accurate Depth Map Estimation from Video via MRF Optimization**

*Sheng-Po Tseng¹, Shang-Hong Lai²*

¹National Tsing Hua University, Taiwan

**O-05.2 Fast Disparity Estimation for Multi-view Plus Depth Video Coding**

*Brian Walter Micallef¹, Carl James Debono¹, Reuben A Farrugia¹*

¹University of Malta, Malta

**O-05.3 Fast iterative search for motion and disparity estimation in stereoscopic video coding**

*Zhi-Pin Deng¹, Ke-Bin Jia¹, Yui-Lam Chan², Chang-Hong Fu², Wan-Chi Siu²*

¹The Beijing University of Technology, China

²Hong Kong Polytechnic University, China

**O-05.4 Virtual Support Window for Adaptive-Weight Stereo Matching**

*Weidong Hu¹, Kang Zhang¹, Lifeng Sun¹, Jiyang Li¹, Yijing Li¹, Shiqiang Yang¹*

¹Tsinghua University, China

**O-05.5 Point Cloud Compression for Grid-Pattern-based 3D Scanning System**

*I. Daribo¹, R. Furukawa¹, R. Sagawa², H. Kawasaki³, S. Hiura¹, N. Asada¹*

¹Hiroshima City University, Japan

²National Institute of Advanced Industrial Science and Technology, Japan

³Kagoshima University, United States, Japan
Wednesday, 9 Nov., 13:00-15:00

O-11  Futuristic Human-Machine Interface

Time: Wednesday, 9 Nov., 13:00-15:00
Location: G301, Green Building 3F
Chairs: Wei-Yang Lin, National Chung Cheng University, Taiwan
        Byung Cheol Song, Inha University, Republic of Korea

O-11.1 Crowd Instability Analysis Using Velocity-Field Based Social Force Model
Jing Zhao¹, Yi Xu¹, Xiaokang Yang¹, Qing Yan¹
¹Shanghai Jiao Tong University, China

O-11.2 Recognizing Human Actions Using Curvature Estimation and NWFE-Based Histogram Vectors
Fu-Song Hsu¹, Cheng-Hsien Lin¹, Wei-Yang Lin¹
¹National Chung Cheng University, Taiwan

O-11.3 Adaptive Background Estimation of Outdoor Illumination Variations for Foreground Detection
Xudong Zhao¹, Peng Liu¹, Jiafeng Liu¹, Xianglong Tang¹
¹Harbin Institute of Technology, China

O-11.4 Interactive Object Segmentation Using Iterative Adjustable Graph Cut
Ran Shi², Zhi Liu¹, Yinzhu Xue¹, Xiang Zhang²
¹Shanghai University, China
²Shanghai Jiao Tong University, China

O-11.5 Spatio-Temporal De-interlacing Based on Maximum Likelihood Estimation
Ho-Taek Lee¹, Tae Hwan Lee¹, Byung Cheol Song¹
¹Inha University, Republic of Korea
Wednesday, 9 Nov., 13:00-15:00

O-13  Image Analysis for Medical Applications
- **Time**: Wednesday, 9 Nov., 13:00-15:00
- **Location**: G201, Green Building 2F
- **Chairs**: Jian-Jiun Ding, National Taiwan University, Taiwan
  Xiaokang Yang, Shanghai Jiao Tong University, China

O-13.1 Muscle Injury Determination by Image Segmentation
- **Authors**: Jian-Jiun Ding¹, Yu-Hsiang Wang¹, Lee-Lin Hu¹,
  Wei-Lun Chao¹, Yio-Wha Shau¹
- **Affiliations**: ¹National Taiwan University, Taiwan

O-13.2 An Improved Automatic Initial Snaxel Selection with Corner Tracing for Object Contour Extraction in Medical Image
- **Authors**: Roy Chaoming Hsu¹, Din-Yuen Chan¹, Wei Chieh Lai¹,
  Tzu Li Chiú¹, Cheng Tin Liu¹
- **Affiliations**: ¹National Chiayi University, Taiwan

O-13.3 Graph-cut based Antialiasing for Doppler Ultrasound Color Flow Medical Imaging
- **Authors**: Artem M. Yatchenko¹, Andrey S. Krylov¹, Andrey V. Gavrilov¹, Ivan V. Arkhipov²
- **Affiliations**: ¹Lomonosov Moscow State University, Russian Federation
  ²B.V. Petrovsky National Research Centre of Surgery, Russian Federation

O-13.4 Quantitative Assessment of 2D versus 3D Visualisation Modalities
- **Authors**: Sarah Ting¹, Tele Tan¹, Geoff West¹, Andrew Squelch²,
  Jonathan Foster³
- **Affiliations**: ¹Curtin University, Australia
  ²Western Australian School of Mines, Australia
  ³Curtin University, Australia
**P-05 Video/Image Quality Assessment**

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<td>Sheau-Fang Lei, National Cheng Kung University, Taiwan&lt;br&gt;Chih-Hung Kuo, National Cheng Kung University, Taiwan</td>
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**P-05.1 Content-based Image Quality Assessment of Natural Scene Image Distorted by Quantization**

*Tao Luo¹, Chao Wang¹, Xuanqin Mou¹*

¹Xian Jiaotong University, China

**P-05.2 Systematic Evaluation of Super-resolution Using Classification**

*Vinay P. Namboodiri¹, Vincent De Smet¹, Luc Van Gool¹*

¹K.U.Leuven, Belgium

**P-05.3 Subjective Quality Analyses of Stereoscopic Images in 3DTV System**

*Junming Zhou¹, Gangyi Jiang¹, Xiangying Mao¹, Mei Yu², Feng Shao², Zongju Peng², Yun Zhang²*

¹Ningbo University, China<br>²Chinese Academy of Sciences, China

**P-05.4 The Quality Evaluation of Image Recovery Attack for Visible Watermarking Algorithms**

*Min-Jen Tsai¹, Jung Liu¹*

¹National Chiao Tung University, Taiwan

**P-05.5 Subjective Evaluation of Transmission Errors in IPTV and 3DTV**

*Jesús Gutiérrez¹, Pablo Pérez², Fernando Jaureguizar¹, Julián Cabrera¹, Narciso García¹*

¹Universidad Politécnica de Madrid, Spain<br>²Alcatel-Lucent, Spain
O-12  **Advanced Image Coding and Processing**

**Time**: Wednesday, 9 Nov., 15:20-17:00  
**Location**: G302, Green Building 3F  
**Chairs**: Chia-Wen Lin, National Tsing Hua University, Taiwan  
Yu-Chiang Frank Wang, Academia Sinica, Taiwan

O-12.1  **A New Image Coding Scheme with Hierarchical Representation and Adaptive Interpolation**  
Xinfeng Zhang\(^1\), Ruiqin Xiong\(^2\), Siwei Ma\(^2\), Wen Gao\(^2\)  
\(^{1}\)Institute of Computing Technology, China  
\(^{2}\)Peking University, China

O-12.2  **Context-Based Adaptive Zigzag Scanning for Image Coding**  
Jian-Jiun Ding\(^1\), Wei-Yi Wei\(^1\), Hsin-Hui Chen\(^1\)  
\(^{1}\)National Taiwan University, Taiwan

O-12.3  **Separation of Superimposed Images with Unknown Motions Using Sparsity Priors**  
Qing Yan\(^1\), Xiaokang Yang\(^1\), Yi Xu\(^1\)  
\(^{1}\)Shanghai Jiao Tong University, China

O-12.4  **Image Matting Based on Mutual information**  
Xiaozhou Zhou\(^1\), Pierre Boulanger\(^1\)  
\(^{1}\)University of Alberta, Canada

O-12.5  **Zero-Error Watermarking JPEG Images by Shuffling Huffman Tree Nodes**  
Yongdong Wu\(^1\), Robert H. Deng\(^2\)  
\(^{1}\)Institute for Infocomm Research, Singapore  
\(^{2}\)Singapore Management University, Singapore
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<td>O-16</td>
<td>Video Streaming and Networking Systems</td>
<td>Zhibin James Lei, Applied Science and Technology Research Institute (ASTRI), Hong Kong</td>
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<td>Pei-Jun Lee, National Chi Nan University, Taiwan</td>
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<td>Perceptual Quality Assessment on B-D Tradeoff of P2P Assisted Layered Video Streaming</td>
<td>Jingjing Wang¹, Tom Z. J. Fu¹, Dah Ming Chiu¹, Zhibin Lei²</td>
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<td>ºThe Chinese University of Hong Kong, Hong Kong</td>
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<td>²Applied Science and Technology Research Institute, Hong Kong</td>
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<td>Towards Quality-Oriented Scheduling for Live Swarm-Based P2P Streaming</td>
<td>Chun-Yuan Chang¹, Cheng-Fu Chou¹, Ming-Hung Chen¹</td>
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<td>ºNational Taiwan University, Taiwan</td>
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<td>Distributed Markov Decision Process in Cooperative Peer Recovery for WWAN Multiview Video Multicast</td>
<td>Zhi Liu¹, Gene Cheung¹, Yusheng Ji¹</td>
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<td>ºNational Institute of Informatics, Japan</td>
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<td>MixCast Modulation for Layered Video Multicast over WLANs</td>
<td>Hao Cui¹, Chong Luo², Chang Wen Chen³, Feng Wu²</td>
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<td>ºUniversity of Science and Technology of China, China</td>
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<td>²Microsoft Research Asia, China</td>
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<td>³State University of New York at Buffalo, United States</td>
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S-05 Advanced Techniques for Distributed Video Processing and Communications (II)  (Special Session)

Time  Wednesday, 9 Nov., 15:20-17:00
Location  G201, Green Building 2F
Chairs  Weiyao Lin, Shanghai Jiao Tong University, China

S-05.1 A New Package-Group-Transmission-based Algorithm for Human Activity Recognition in Videos
Yuanzhe Chen¹, Weiyao Lin¹, Hongxiang Li², Hangzai Luo³, Yisi Tao¹, Donghua Liu⁴
¹Shanghai Jiao Tong University, China
²North Dakota State University, United States
³East China Normal University, China
⁴National University of Defense Technology, China

S-05.2 Wyner-Ziv video coding using progressive encoding and decoding
Wei Zhang¹, Qiwei Liu¹, Houqiang Li³, Chang Wen Chen¹
¹University of Science and Technology of China, China

S-05.3 Observation Quality Guaranteed Layout of Camera Networks via Sparse Representation
Chang Wang¹, Fei Qi¹, Guangming Shi¹
¹Xidian University, China

S-05.4 Multiple Description Video Coding Against Both Erasure and Bit Errors by Compressive Sensing
Liangjun Wang¹, Xiaolin Wu², Guangming Shi¹
¹Xidian University, China
²McMaster University, Canada

S-05.5 Improved Rate-Adaptive Codes for Distributed Video Coding
Jeffrey J Micallef¹, Reuben A Farrugia¹, Carl James Debono¹
¹University of Malta, Malta