ICIP 2017 Technical Program

Video Coding I

Session Chair: Ce Zhu, University of Electronic Science and Technology of China

MA-L1.1 10:30 **INTRA PREDICTION USING FULLY CONNECTED NETWORK FOR VIDEO CODING**
Jiahao Li, Peking University; Bin Li, Jizheng Xu, Microsoft Research Asia; Ruiqin Xiong, Peking University

MA-L1.2 10:50 **A NOVEL ANGLE-RESTRICTED TEST ZONE SEARCH ALGORITHM FOR PERFORMANCE IMPROVEMENT OF HEVC**
Niras Cheeckottu Vayalil, Macquarie University; Manoranjan Paul, Charles Sturt University; Yinan Kong, Macquarie University

MA-L1.3 11:10 **CHROMA ADJUSTMENT FOR HDR VIDEO**
Jacob Ström, Per Wennersten, Ericsson Research

MA-L1.4 11:30 **PROBABILISTIC GRAPHICAL MODEL BASED FAST HEVC INTER PREDICTION**
Meiyuan Fang, Jiangtao Wen, Tsinghua University; Yuxing Han, South China Agriculture University

MA-L1.5 11:50 **MOTION COMPENSATION USING CRITICALLY SAMPLED DWT SUBBANDS FOR LOW-BITRATE VIDEO CODING**
Vildan Atalay Aydin, Hassan Foroosh, University of Central Florida

MA-L1.6 12:10 **MULTI-MODAL/MULTI-SCALE CONVOLUTIONAL NEURAL NETWORK BASED IN-LOOP FILTER DESIGN FOR NEXT GENERATION VIDEO CODEC**
Jihong Kang, Seoul National University; Sungjei Kim, Korea Electronics Technology Institute; Kyoung Mu Lee, Seoul National University

Advanced Camera Techniques

Session Chair: Wei FENG, Tianjin University

MA-L2.1 10:30 **BLOCK-WISE LENSLESS COMPRESSIVE CAMERA**
Xin Yuan, Gang Huang, Hong Jiang, Paul Wilford, Bell Labs

MA-L2.2 10:50 **ROBUST PLANE-BASED CALIBRATION FOR LINEAR CAMERAS**
Simon Donné, Hiep Luong, Stijn Dhondt, Nathalie Wuyts, Dirk Inzé, Bart Goossens, Wilfried Philips, Ghent University

MA-L2.3 11:10 **ENHANCEMENT OF PHASE DETECTION FOR AUTOFOCUS**
Chin-Cheng Chan, Shao-Kang Huang, Homer Chen, National Taiwan University

MA-L2.4 11:30 **EXPONENTIAL COORDINATES BASED ROTATION STABILIZATION FOR PANORAMIC VIDEOS**
Hoang-Phong Nguyen, Tien-Thong Nguyen Do, Jinwook Kim, Korea Institute of Science and Technology

MA-L2.5 11:50 **360-DEGREE VIDEO STITCHING FOR DUAL-FISHEYE LENS CAMERAS BASED ON RIGID MOVING LEAST SQUARES**
Tuan Ho, Ioannis Schizas, K. R. Rao, University of Texas Arlington; Madhukar Budagavi, Samsung Research America

MA-L2.6 12:10 **DATA DRIVEN CODED APERTURE DESIGN FOR DEPTH RECOVERY**
Prasan Shedligeri, Sreyas Mohan, Kaushik Mitra, Indian Institute of Technology Madras

Contour-based Segmentation

Session Chair: Haojie LI, Dalian University of Technology

MA-L3.1 10:30 **EFFICIENT CLOUD DETECTION IN REMOTE SENSING IMAGES USING EDGE-AWARE SEGMENTATION NETWORK AND EASY-TO-HARD TRAINING STRATEGY**
Kun Yuan, Gaofeng Meng, Dongcai Cheng, Jun Bai, Shiming Xiang, Chunhong Pan, Institute of Automation, Chinese Academy of Sciences

MA-L3.2 10:50 **ROBUST ELLIPSE DETECTION VIA ARC SEGMENTATION AND CLASSIFICATION**
Huixu Dong, I-Ming Chen, Dilip K. Prasad, Nanyang Technological University

MA-L3.3 11:10 **A DIRECTED GRAPH APPROACH TO ACTIVE CONTOURS**
Adrian Barbu, Florida State University

MA-L3.4 11:30 **CIRCLE DETECTION BY ARC-SUPPORT LINE SEGMENTS**
Changsheng Lu, Siyu Xia, Southeast University; Wanming Huang, Joint Stars Technology CO., LTD; Ming Shao, University of Massachusetts; Yun Fu, Northeastern University

MA-L3.5 11:50 **IMAGE SEGMENTATION USING CONTOUR, SURFACE, AND DEPTH CUES**
Xiang Fu, Chen Chen, Jian Li, University of Southern California; Changhu Wang, Toutiao AI Lab; C.-C Jay Kuo, University of Southern California

MA-L3.6 12:10 **ENSEMBLE OF ACTIVE CONTOUR BASED IMAGE SEGMENTATION**
Wei Xu, Xiaodong Yue, Shanghai University; Yufei Chen, Tongji University; Marek Reformat, University of Alberta

Biometric Recognition I

Session Chair: Bir Bhanu, University of California at Riverside

MA-L4.1 10:30 **HUMAN SKELETON TREE RECURRENT NEURAL NETWORK WITH JOINT RELATIVE MOTION FEATURE FOR SKELETON BASED ACTION RECOGNITION**
Shenghua Wei, Yonghong Song, Yuanlin Zhang, Xi'an Jiaotong University

MA-L4.2 10:50 **FACE SPOOFING DETECTION BY FUSING BINOCULAR DEPTH AND SPATIAL PYRAMID CODING MICRO-TEXTURE FEATURES**
Xiao Song, Xu Zhao, Tianwei Lin, Shanghai Jiao Tong University

MA-L4.3 11:10 **FACE ANTI-SPOOFING VIA DEEP LOCAL BINARY PATTERNS**
Lei Li, Xiaoyi Feng, Xiaoyue Jiang, Zhaoqiang Xia, Northwestern Polytechnical University; Abdenour Hadid, Center for Machine Vision Research (CMV)

MA-L4.4 11:30 **DEEP MULTI-TASK LEARNING FOR GAIT-BASED BIOMETRICS**
Manuel Marin-Jimenez, University of Cordoba; Francisco Castro, Nicolas Guil, University of Malaga; Fernando de la Torre, Carnegie Mellon University; Rafael Medina-Carnicer, University of Cordoba

MA-L4.5 11:50 **LOCALIZED MULTI-KERNEL DISCRIMINATIVE CANONICAL CORRELATION ANALYSIS FOR VIDEO-BASED PERSON RE-IDENTIFICATION**
Guangyi Chen, Jiwen Lu, Jianjiang Feng, Jie Zhou, Tsinghua University

MA-L4.6 12:10 **ON THE ACCURACY AND ROBUSTNESS OF DEEP TRIPLET EMBEDDING FOR FINGERPRINT LIVENESS DETECTION**
Federico Pala, Bir Bhanu, University of California, Riverside

3D Shape and Pose

Session Chair: Stefan Winkler, ADSC, Singapore

MA-L5.1 10:30 **REAL-TIME MONOCULAR 6-DOF HEAD POSE ESTIMATION FROM SALIENT 2D POINTS**
Jilliam Maria Diaz Barros, German Research Center for Artificial Intelligence (DFKI); Frederic Garcia, Bruno Mirbach, IEE S.A.; Didier Stricker, German Research Center for Artificial Intelligence (DFKI)

MA-L5.2 10:50 **PERSONALIZED POSE ESTIMATION FOR BODY LANGUAGE UNDERSTANDING**
Zhengyuan Yang, Jiebo Luo, University of Rochester

MA-L5.3 11:10 **ACCELERATED RANSAC FOR 2D HOMOGRAPHY ESTIMATION BASED ON GLOBAL BRIGHTNESS CONSISTENCY**
Gaku Nakano, NEC Corporation

MA-L5.4 11:30 **MONDRIAN STEREO**
Dylan Quenneville, Daniel Scharstein, Middlebury College

MA-L5.5 11:50 **STEREOSCOPIC CLOUD BASE RECONSTRUCTION USING HIGH-RESOLUTION WHOLE SKY IMAGERS**
Florian M. Savoy, University of Illinois at Urbana-Champaign; Soumyabrata Dev, Yee Hui Lee, Nanyang Technological University; Stefan Winkler, University of Illinois at Urbana-Champaign

MA-L5.6 12:10 **LOCALIZING BODY JOINTS FROM SINGLE DEPTH IMAGES USING GEODETIC DISTANCES AND RANDOM TREE WALK**
Sebastian Handrich, Ayoub Al-Hamadi, Otto-von-Guerick-University

People and Action

Session Chair: Wu Liu, Beijing University of Posts and Telecommunications

MA-L6.1 10:30 **DEEP PEDESTRIAN ATTRIBUTE RECOGNITION BASED ON LSTM**
Zhong Ji, Weixiong Zheng, Yanwei Pang, Tianjin University

MA-L6.2 10:50 **DIRECT MULTI-SCALE DUAL-STREAM NETWORK FOR PEDESTRIAN DETECTION**
Sang-Il Jung, Ki-Sang Hong, POSTECH

MA-L6.3 11:10 **INTEGRATED METRIC LEARNING WITH ADAPTIVE CONSTRAINTS FOR PERSON RE-IDENTIFICATION**
Lei Hao, Wenbin Yao, Chao Pei, Yuesheng Zhu, Peking University

MA-L6.4 11:30 **PERSON IDENTIFICATION USING SPATIOTEMPORAL MOTION CHARACTERISTICS**
Muhammad Hassan Khan, University of Siegen; Muhammad Shahid Farid, University of the Punjab; Marcin Grzegorzek, University of Economics in Katowice

MA-L6.5 11:50 **SEQUENTIAL SEGMENT NETWORKS FOR ACTION RECOGNITION**
Quan-Qi Chen, Yu-Jin Zhang, Tsinghua University

Perceptual Quality Evaluation of Advanced Multimedia Systems

Session Co-Chairs: Ke Gu, Nanyang Technological University; Guangtao Zhai, Shanghai Jiao Tong University; Patrick Le Callet, Université de Nantes; Weisi Lin, Nanyang Technological University

MA-L7.1 10:30 **BLIND QUALITY ASSESSMENT OF MULTIPLY-DISTORTED IMAGES BASED ON STRUCTURAL DEGRADATION**
Tao Dai, Tsinghua University; Ke Gu, Beijing University of Technology; Zhi-Ya Xu, Qingtao Tang, Tsinghua University; Haoyi Liang, University of Virginia; Yongbing Zhang, Shu-Tao Xia, Tsinghua University

MA-L7.2 10:50 **SUBJECTIVE AND OBJECTIVE QUALITY EVALUATION OF SONAR IMAGES FOR UNDERWATER ACOUSTIC TRANSMISSION**
Weiling Chen, Fei Yuan, En Cheng, Key Laboratory of Underwater Acoustic Communication and Marine Information Technology (Xiamen University); Weisi Lin, School of Computer Science and Engineering

MA-L7.3 11:10 **PERCEPTUAL QUALITY ASSESSMENT OF HEVC MAIN PROFILE DEPTH MAP COMPRESSION FOR SIX DEGREES OF FREEDOM VIRTUAL REALITY VIDEO**
Sebastian Schwarz, Miska Hannuksela, Nokia Technologies Oy

MA-L7.4 11:30 **LEARNING NATURAL STATISTICS OF BINOCULAR CONTRAST FOR NO REFERENCE QUALITY ASSESSMENT OF STEREOSCOPIC IMAGES**
Yi Zhang, Damon Chandler, Shizuoka University

MA-L7.5 11:50 **GLOBAL QUALITY OF ASSESSMENT AND OPTIMIZATION FOR THE BACKWARD-COMPATIBLE STEREOSCOPIC DISPLAY SYSTEM**
Yuanchun Chen, Guangtao Zhai, Shanghai Jiao Tong University; Jiantao Zhou, University of Macau; Zhaolin Wan, Harbin Institute of Technology; Lu Tang, Xuzhou Medical University

MA-L7.6 12:10 **EFFECT OF VISUALIZATION TECHNIQUES ON SUBJECTIVE QUALITY OF LIGHT FIELD IMAGES**
Pradip Paudyal, Federica Battisti, Marco Carli, Università degli Studi Roma TRE

Trends in Statistical Analysis of Manifold-valued Data: Theory and Applications to Imaging

Session Co-Chairs: Baba C. Vemuri, University of Florida Gainesville; Yannick Berthoumieu, University of Bordeaux

MA-L8.1 10:30 **MVIRT, A TOOLBOX FOR MANIFOLD-VALUED IMAGE RESTORATION**
Ronny Bergmann, University of Kaiserslautern

MA-L8.2 10:50 **CLASSIFICATION APPROACH BASED ON THE PRODUCT OF RIEMANNIAN MANIFOLDS FROM GAUSSIAN PARAMETRIZATION SPACE**
Yannick Berthoumieu, Lionel Bombrun, Christian Germain, Salem Said, Université de Bordeaux

MA-L8.3 11:10 **STATISTICAL ANALYSIS OF LONGITUDINAL DATA AND APPLICATIONS TO NEURO-IMAGING**
Rudrasis Chakraborty, Baba Vemuri, University of Florida

MA-L8.4 11:30 **A MAP ESTIMATION ALGORITHM FOR BAYESIAN POLYNOMIAL REGRESSION ON RIEMANNIAN MANIFOLDS**
Prasanna Muralidharan, University of Utah; Jacob Hinkle, National Renewable Energy Lab; P. Thomas Fletcher, University of Utah

MA-L8.5 11:50 **DEFORMATION TRANSFER OF 3D HUMAN SHAPES AND POSES ON MANIFOLDS**
Abd El Rahman Shabayek, Djamila Aouada, Alexandre Saint, Björn Ottersten, SnT, University of Luxembourg

MA-L8.6 12:10 **ON SOME GLOBAL TOPOLOGICAL ASPECTS OF MANIFOLD LEARNING**
Jonathan Manton, The University of Melbourne; Nicolas Le Bihan, CNRS

Linear and Non-linear Filtering I

Session Chair: Xin Li, West Virginia University

MA-L9.1 10:30 **A NONLOCAL OPERATOR MODEL FOR MORPHOLOGICAL IMAGE PROCESSING**
Zhonggui Sun, Liaocheng University; Xinbo Gao, Xidian University; Dongmei Zhang, Liaocheng University

MA-L9.2 10:50 **LEARNING A LOW-COHERENCE DICTIONARY TO ADDRESS SPECTRAL VARIABILITY FOR HYPERSPECTRAL UNMIXING**
Danfeng Hong, German Aerospace Center (DLR);Technical University of Munich(TUM); Naoto Yokoya, German Aerospace Center (DLR);Technical University of Munich(TUM);The University of Tokyo; Jocelyn Chanussot, University of Grenoble Alpes/CNRS; Xiao Xiang Zhu, German Aerospace Center (DLR);Technical University of Munich(TUM)

MA-L9.3 11:10 **FAST HIGH-DIMENSIONAL FILTERING USING CLUSTERING**
Pravin Nair, Kunal Chaudhury, Indian Institute of Science

MA-L9.4 11:30 **FLICKER REMOVAL AND SUPERPIXEL-BASED MOTION TRACKING FOR HIGH SPEED VIDEOS**
Ali Kanj, Hugues Talbot, Université Paris-Est Marne-la-Vallée; Raoul Rodriguez Luparello, Sublab Production

MA-L9.5 11:50 **EDGE/STRUCTURE PRESERVING SMOOTHING VIA RELATIVITY-OF-GAUSSIAN**
Bolun Cai, Xiaofen Xing, Xiangmin Xu, South China University of Technology

MA-L9.6 12:10 **MULTICHANNEL GUIDED IMAGE FILTER**
Chang Liu, Xiaolin Wu, Shanghai Jiao Tong University; Xiao Shu, McMaster University

Sensing and Acquisition

Session Chair: Pablo Musé, Universidad de la Republica

MA-PA.1 MULTI-VIEW TASK-DRIVEN RECOGNITION IN VISUAL SENSOR NETWORKS
Ali Taalimi, Alireza Rahimpour, Liu Liu, Hairong Qi, University of Tennessee

MA-PA.2 MF-LRTC: MULTI-FILTERS GUIDED LOW-RANK TENSOR CODING FOR IMAGE RESTORATION
Hongyang Lu, Sanqian Li, Qiegen Liu, Yuhao Wang, Nanchang University

MA-PA.3 SAMPLING PATTERN DESIGN ALGORITHM FOR ATOMIC FORCE MICROSCOPY IMAGES
Yufan Luo, Sean Andersson, Boston university

MA-PA.4 LOW POWER DEPTH ESTIMATION FOR TIME-OF-FLIGHT IMAGING
James Noraky, Vivienne Sze, Massachusetts Institute of Technology

MA-PA.5 FAST INITIALIZATION FOR FEATURE-BASED MONOCULAR SLAM
Shaobo Zhang, Sheng Liu, Jianhua Zhang, Zhenhua Wang, Xiaoyan Wang, Zhejiang University of Technology

MA-PA.6 HYPERLAPSE GENERATION OF OMNIDIRECTIONAL VIDEOS BY ADAPTIVE SAMPLING BASED ON 3D CAMERA POSITIONS
Masanori Ogawa, Toshihiko Yamasaki, Kiyoharu Aizawa, The University of Tokyo

MA-PA.7 SQUARE TO HEXAGONAL LATTICE CONVERSION IN THE FREQUENCY DOMAIN
Xiangguo Li, Henan University of Technology; Bryan Gardiner, Sonya Coleman, University of Ulster

MA-PA.8 DENOISING RADIO INTERFEROMETRIC IMAGES BY SUBSPACE CLUSTERING
Nezihe Merve Gürel, Paul Hurley, Matthieu Simeoni, IBM Zurich Research Laboratory

MA-PA.9 IMPROVED DENOISING VIA POISSON MIXTURE MODELING OF IMAGE SENSOR NOISE
Jiachao Zhang, Nanjing University of Science and Technology

Partial Differential Equation Based Processing

Session Chair: Byung Cheol Song, Inha University

MA-PB.1 AVOIDING BLEEDING IN IMAGE BLENDING
Minxuan Wang, Zhe Zhu, Songhai Zhang, Tsinghua University; Ralph Martin, Cardiff University; Shi-Min Hu, Tsinghua University

MA-PB.2 LEVEL-SET FORMULATION BASED ON OTSU METHOD WITH MORPHOLOGICAL REGULARIZATION
Jeová Farias Sales Rocha Neto, Alan Magalhaes Braga, Fatima Nelsizeuma Sombra de Medeiros, Regis Cristiano Pinheiro Marques, Federal University of Ceará

MA-PB.3 ROBUST ACTIVE CONTOURS FOR MAMMOGRAM IMAGE SEGMENTATION
Shafiullah Soomro, Kwang Nam Choi, Chung-Ang University

MA-PB.4 GLAND SEGMENTATION GUIDED BY GLANDULAR STRUCTURES: A LEVEL SET FRAMEWORK WITH TWO LEVELS
Chen Wang, University of Electronic Science and Technology of China; Ji Bao, Hong Bu, Sichuan University

MA-PB.5 A LEVEL SET METHOD FOR CONVEXITY PRESERVING SEGMENTATION OF CARDIAC LEFT VENTRICLE
Cong Yang, Xi'an Jiaotong University; Xue Shi, Donglan Yao, Chunming Li, University of Electronic Science and Technology of China

Image and Video Networking

Session Chair: Gene Cheung, National Institute of Informatics

MA-PC.1 TAG TREE CREATION OF SOCIAL IMAGE FOR PERSONALIZED RECOMMENDATION
Ying Yang, Jing Zhang, Jihong Liu, Jiafeng Li, Li Zhuo, Beijing University of Technology

MA-PC.2 NESTED POLYGONAL CHAIN MAPPING OF OMNIDIRECTIONAL VIDEO
Kashyap Kammachi Sreedhar, Miska Hannuksela, Nokia Technologies

MA-PC.3 VIEWPORT-AWARE ADAPTIVE 360° VIDEO STREAMING USING TILES FOR VIRTUAL REALITY
Cagri Ozcinar, Ana De Abreu, Aljosa Smolic, Trinity College Dublin

MA-PC.4 MULTI-STREAM SWITCHING FOR INTERACTIVE VIRTUAL REALITY VIDEO STREAMING
Gene Cheung, National Institute of Informatics; Zhi Liu, Waseda University; Zhiyou Ma, Jack Z. G. Tan, Kandao Technology

MA-PC.5 CORRELATION MODEL SELECTION FOR INTERACTIVE VIDEO COMMUNICATION
Navid Mahmoudian Bidgoli, Thomas Maugey, Aline Roumy, INRIA Rennes Bretagne-Atlantique

MA-PC.6 TRAINING SAMPLE SELECTION FOR DEEP LEARNING OF DISTRIBUTED DATA
Zheng Jiang, Xiaoqing Zhu, Wai-Tian Tan, Rob Liston, Cisco System

Stereoscopic, Multiview, and 3D Processing I

Session Chair: Aydin Alatan, Middle East Technical University

MA-PD.1 MULTI-MODAL 3D RECONSTRUCTION AND MEASUREMENTS OF ZEBRAFISH LARVAE AND ITS ORGANS USING AXIAL-VIEW MICROSCOPY
Yuanhao Guo, Rob van Wijk, Elke Krekels, Herman Spaink, Piet Hein van der Graaf, Fons Verbeek, Leiden University

MA-PD.2 3D POINT CLOUD REGISTRATION WITH SHAPE CONSTRAINT
Swapna Agarwal, Brojeshwar Bhowmick, Tata Consultancy Services Limited

MA-PD.3 REAL-TIME 3D FACE RECONSTRUCTION FROM ONE SINGLE IMAGE BY DISPLACEMENT MAPPING
Tao Wu, Fei Zhou, Qingmin Liao, Tsinghua University

MA-PD.4 HIGH QUALITY RECONSTRUCTION OF DYNAMIC OBJECTS USING 2D-3D CAMERA FUSION
Cansen Jiang, University Bourgogne Franche-Comte; Dennis Christie, Gunadarma University; Danda Pani Paudel, ETH Zürich; Cédric Demonceaux, University Bourgogne Franche-Comte

MA-PD.5 MULTICOLOR REMOVAL BASED ON COLOR LINES AND IMPROVED HOUGH TRANSFORM FOR SFS
Tianqi Wang, Terumasa Aoki, Tohoku University

MA-PD.6 OPTIMIZING LANDMARK INSERTIONS FOR INTERACTIVE LIGHT FIELD STREAMING
Yuan Yuan, University of Alberta; Gene Cheung, National Institute of Informatics; Pascal Frossard, École polytechnique fédérale de Lausanne

MA-PD.7 VIEWPOINT CALIBRATION METHOD BASED ON POINT FEATURES FOR POINT CLOUD FUSION
Liang Zhang, Xiao Zhang, Juan Song, Peiyi Shen, Guangming Zhu, Shaokai Dong, Xidian University

MA-PD.8 VIRTUAL REVIEW OF LARGE SCALE IMAGE STACK ON 3D DISPLAY
Jonathan Sarton, Nicolas Courilleau, Université de Reims Champagne-Ardenne; Anne-Sophie Herard, Thierry Delzescaux, Commissariat à l'énergie atomique et aux énergies alternatives (CEA); Yannick Remion, Laurent Lucas, Université de Reims Champagne-Ardenne

Registration, Fusion, and Matching

Session Chair: Thierry Blu, Chinese University of Hong Kong

MA-PE.1 FAST EXPOSURE FUSION USING EXPOSEDNESS FUNCTION
Mansour Nejati, Maryam Karimi, Isfahan University of Technology; Reza Soroushmehr, University of Michigan; Nader Karimi, Shadrokh Samavi, Isfahan University of Technology; Kayvan Najarian, University of Michigan

MA-PE.2 A DATA-DRIVEN APPROACH TO FEATURE SPACE SELECTION FOR ROBUST MICRO-ENDOSCOPIC IMAGE RECONSTRUCTION
Pascal Bourdon, David Helbert, Laboratoire XLIM, UMR CNRS 7252

MA-PE.3 VISUAL SALIENCE AND STACK EXTENSION BASED GHOST REMOVAL FOR HIGH-DYNAMIC-RANGE IMAGING
Zijie Wang, Qin Liu, Nanjing University; Takeshi Ikenaga, Waseda University

MA-PE.4 DISPARITY ADAPTED WEIGHTED AGGREGATION FOR LOCAL STEREO
Julia Navarro, Antoni Buades, Universitat de les Illes Balears

MA-PE.5 MULTI-MODAL METRIC LEARNING FOR VEHICLE RE-IDENTIFICATION IN TRAFFIC SURVEILLANCE ENVIRONMENT
Yi Tang, Di Wu, Zhi Jin, Wenbin Zou, Xia Li, Shenzhen University

MA-PE.6 AN AUTOMATIC IMAGE REGISTRATION EVALUATION MODEL ON DENSE FEATURE POINTS BY PINHOLE CAMERA SIMULATION
Wen-Liang Du, Xiao-Lin Tian, Macau University of Science and Technology

MA-PE.7 REGISTRATION OF MULTITEMPORAL GF-1 REMOTE SENSING IMAGES WITH WEIGHTING PERSPECTIVE TRANSFORMATION MODEL
Ruitao Feng, Xinghua Li, Wuhan University; Wenli Zou, China University of Geosciences; Huanfeng Shen, Wuhan University

MA-PE.8 NON-RIGID IMAGE DEFORMATION ALGORITHM BASED ON MRLS-TPS
Huabing Zhou, Yuyu Kuang, Wuhan Institute of Technology; Zhenghong Yu, Guangdong Polytechnic of Science and Technology; Shiqiang Ren, Anna Dai, Yanduo Zhang, Tao Lu, Wuhan Institute of Technology; Jiayi Ma, Wuhan University

MA-PE.9 REALISTIC IMAGE COMPOSITE WITH BEST-BUDDY PRIOR OF NATURAL IMAGE PATCHES
Yuan Wang, Fan Zhong, Xiangyu Sun, Xueying Qin, Shandong University

MA-PE.10 ALIGNMENT OF OPTIC NERVE HEAD OPTICAL COHERENCE TOMOGRAPHY B-SCANS IN RIGHT AND LEFT EYES
Marzieh Mokhtari, Hossein Rabbani, Alireza Mehri Dehnavi, MISP Research Center

Object Detection I

Session Chair: Zhengjun Zha, University of Science and Technology of China

MA-PF.1 SO-BRIEF: FAST RECOGNITION OF RECTANGULAR OBJECTS
Philippe Métais, ENSEEIHT; Jian-Jiun Ding, National Taiwan University

MA-PF.2 SALIENCY DETECTION VIA LOCAL SINGLE GAUSSIAN MODEL
Nan Xu, Yanqing Guo, Xiangwei Kong, School of Information and Communication Engineering, Dalian University of Technology

MA-PF.3 FAST AIRCRAFT DETECTION BASED ON REGION LOCATING NETWORK IN LARGE-SCALE REMOTE SENSING IMAGES
Zhongxing Han, Hui Zhang, Jinfang Zhang, Xiaohui Hu, Institute of Software Chinese Academy of Sciences

MA-PF.4 ANOMALY DETECTION IN THERMAL IMAGES USING DEEP NEURAL NETWORKS
Lile Cai, Yiqun Li, Institute for Infocomm Research

MA-PF.5 ROBUST IMAGE-BASED CRACK DETECTION IN CONCRETE STRUCTURE USING MULTI-SCALE ENHANCEMENT AND VISUAL FEATURES
Xiangzeng Liu, Xi'an Microelectronics Technology Institute; Yunfeng Ai, University of Chinese Academy of Sciences; Sebastian Scherer, Carnegie Mellon University

MA-PF.6 MULTI-PART COMPACT BILINEAR CNN FOR PERSON RE-IDENTIFICATION
Jian Liu, Zhen Yang, Tao Zhang, Huilin Xiong, Shanghai Jiao Tong University

MA-PF.7 TX-CNN: DETECTING TUBERCULOSIS IN CHEST X-RAY IMAGES USING CONVOLUTIONAL NEURAL NETWORK
Chang Liu, Yu Cao, Marlon F. Alcantara, Benyuan Liu, Maria J. Brunette, University of Massachusetts, Lowell; Jesus Peinado, Partners in Health Perú; Walter H. Curioso, University of Washington

MA-PF.8 A NOVEL FRAMEWORK TO INTEGRATE CONVOLUTIONAL NEURAL NETWORK WITH COMPRESSED SENSING FOR CELL DETECTION
Yao Xue, Nilanjan Ray, Judith Hugh, Bigras Gilbert, University of Alberta

MA-PF.9 INCORPORATING A LOCALLY ESTIMATED APPEARANCE MODEL IN THE GRAPH-CUTS ALGORITHM TO EXTRACT SMALL HEPATIC VESSELS
Neda Sangsefidi, Amir Hossein Foruzan, Ardeshir Dolati, Shahed University; Yen-Wei Chen, Ritsumeikan University

MA-PF.10 IMPROVING CHANNEL FEATURES USING STATISTICAL ANALYSIS FOR PEDESTRIAN DETECTION
Chen Zhang, Joohee Kim, Illinois Institute of Technology

MA-PF.11 MULTIVIEW PEDESTRIAN LOCALISATION VIA A PRIME CANDIDATE CHART BASED ON OCCUPANCY LIKELIHOODS
Yuyao Yan, University of Liverpool; Ming Xu, Xi'an Jiaotong University-Liverpool University; Jeremy Smith, University of Liverpool

Image Classification and Applications I

Session Chair: Xilin Chen, ICT, Chinese Academy of Sciences

MA-PG.1 AN ACCURATE SALIENCY PREDICTION METHOD BASED ON GENERATIVE ADVERSARIAL NETWORKS
Bing Yan, Haoqian Wang, Xingzheng Wang, Yongbing Zhang, Tsinghua University

MA-PG.2 TAD16K: AN ENHANCED BENCHMARK FOR AUTONOMOUS DRIVING
Yuming Li, Jue Wang, Tengfei Xing, Tianlu Liu, Chengjun Li, Kuifeng Su, Tencent

MA-PG.3 GENERALIZED POOLING PYRAMID WITH HIERARCHICAL DICTIONARY SPARSE CODING FOR EVENT AND OBJECT RECOGNITION
Shuai Chen, Bo Ma, Pei Luo, Beijing Institute of Technology

MA-PG.4 POLSAR DATA ONLINE CLASSIFICATION BASED ON MULTI-VIEW LEARNING
Xiangli Nie, Shuguang Ding, Bo Zhang, Hong Qiao, Xiayuan Huang, Chinese Academy of Sciences

MA-PG.5 RECOGNITION OF PATTERNS IN VECTOR FIELDS BY GAUSSIAN-HERMITE INVARIANTS
Bo Yang, Northwestern Polytechnical University; Jitka Kostková, Jan Flusser, Tomáš Suk, Institute of Information Theory and Automation; Roxana Bujack, Los Alamos National Laboratory

MA-PG.6 HAND GESTURE RECOGNITION USING A SKELETON-BASED FEATURE REPRESENTATION WITH A RANDOM REGRESSION FOREST
Shaun Canavan, Walter Keyes, Ryan Mccormick, Julie Kunnumpurath, Tanner Hoelzel, Lijun Yin, Binghamton University

MA-PG.7 RANKING VIDEO SEGMENTS WITH LSTM AND DETERMINANTAL POINT PROCESSES
Juan Liu, Oregon State University; Zhengyang Wu, Magic Leap; Fuxin Li, Oregon State University

MA-PG.8 LEARNING-BASED TONE MAPPING OPERATOR FOR IMAGE MATCHING
Aakanksha Rana, Télécom ParisTech; Giuseppe Valenzise, Frederic Dufaux, CentraleSupélec

MA-PG.9 AUTOMATIC ESTIMATION OF DETERIORATION LEVEL ON TRANSMISSION TOWERS VIA DEEP EXTREME LEARNING MACHINE BASED ON LOCAL RECEPTIVE FIELD
Keisuke Maeda, Sho Takahashi, Takahiro Ogawa, Miki Haseyama, Hokkaido University

MA-PG.10 LEARNING TO SEGMENT ON TINY DATASETS: A NEW SHAPE MODEL
Maxime Tremblay, André Zaccarin, Université Laval

Demo Session

Session Co-Chairs: Qionghai Dai, Tsinghua University; Qi Tian, University of Texas at San Antonio

MA-D.1 A DEEP LEARNING NETWORK FOR VISION-BASED VACANT PARKING SPACE DETECTION SYSTEM
Ching-Chun Huang, Hoang Tran Vu, National Chung Cheng University

MA-D.2 DEMONSTRATION ABSTRACT: MOTION CONSISTENT VIDEO INPAINTING
Thuc Trinh Le, LTCI, Télécom ParisTech, Université Paris-Saclay; Andrés Almansa, MAP5, CNRS & Université Paris Descartes; Yann Gousseau, LTCI, Télécom ParisTech, Université Paris-Saclay; Simon Masnou, Univ Lyon, Univ Claude Bernard Lyon 1 & CNRS, Institut Camille Jordan

MA-D.3 DEMONSTRATION OF AN HMM-BASED PHOTOREALISTIC EXPRESSIVE AUDIO-VISUAL SPEECH SYNTHESIS SYSTEM
Panagiotis Paraskevas Filntisis, Athanasios Katsamanis, Petros Maragos, National Technical University of Athens

MA-D.4 DEMONSTRATION OF A SIMPLE FREE VIEWPOINT TELEVISION SYSTEM
Marek Domanski, Adrian Dziembowski, Tomasz Grajek, Adam Grzelka, Krzysztof Klimaszewski, Dawid Mieloch, Robert Ratajczak, Olgierd Stankiewicz, Jakub Siast, Jakub Stankowski, Krzysztof Wegner, Poznan University of Technology

MA-D.5 IMAGE-GUIDED SURGICAL NAVIGATION SYSTEMS
Xiongbiao Luo, Xiamen University, Xiamen, China and Boston Scientific Corporation

MA-D.6 VIEWPORT-DEPENDENT 360 DEGREE VIDEO STREAMING BASED ON THE EMERGING OMNIDIRECTIONAL MEDIA FORMAT (OMAF) STANDARD
Robert Skupin, Yago Sanchez, D. Podborski, Cornelius Hellge, Thomas Schierl, Fraunhofer HHI - Heinrich Hertz Institute

MA-D.7 INTERACTION-FREE HAND SEGMENTATION USING KINECT CAMERA
Yiwei Wang, Cheolkon Jung, Xidian University

MA-D.8 STEREO-PLUS-DEPTH IMAGING SYSTEM
Inyong Yun, Sungkyunkwan University; Cheolkon Jung, Xidian University; Joongkyu Kim, Sungkyunkwan University

MA-D.9 GRANULARITY-BASED INTERACTIVE IMAGE DISPLAY
Geng-Zhi Wildsky Fann, Mei-Chen Yeh, National Taiwan Normal University

MA-D.10 DEMONSTRATION OF RAPID FREQUENCY SELECTIVE RECONSTRUCTION FOR IMAGE RESOLUTION ENHANCEMENT
Nils Genser, Jürgen Seiler, Markus Jonscher, André Kaup, Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU)

Video Coding II

Session Chair: Ricardo de Queiroz, Universidade de Brasilia

MP-L1.1 14:00 DECODER SIDE MERGE MODE AND AMVP IN HEVC SCREEN CONTENT CODING
Sik-Ho Tsang, Wei Kuang, Yui-Lam Chan, Wan-Chi Siu, The Hong Kong Polytechnic University

MP-L1.2 14:20 A SWITCHABLE LOOP-RESTORATION WITH SIDE-INFORMATION FRAMEWORK FOR THE EMERGING AV1 VIDEO CODEC
Debargha Mukherjee, Google Inc.; Shunyao Li, University of California, Santa Barbara; Yue Chen, Google Inc.; Aamir Anis, University of Southern California; Sarah Parker, James Bankoski, Google Inc.

MP-L1.3 14:40 SURVEILLANCE VIDEO CODING WITH VEHICLE LIBRARY
Changyue Ma, Dong Liu, University of Science and Technology of China; Xiulian Peng, Microsoft Research Asia; Feng Wu, University of Science and Technology of China

MP-L1.4 15:00 GLOBAL AND LOCALLY ADAPTIVE WARPED MOTION COMPENSATION IN VIDEO COMPRESSION
Sarah Parker, Yue Chen, Google Inc.; David Barker, Peter de Rivaz, Argon Design; Debargha Mukherjee, Google Inc.

MP-L1.5 15:20 ON GENERALIZING THE ESTIMATION-THEORETIC FRAMEWORK TO SCALABLE VIDEO CODING WITH QUADTREE STRUCTURED BLOCK PARTITIONS
Shunyao Li, Tejaswi Nanjundaswamy, Bohan Li, Kenneth Rose, University of California, Santa Barbara

MP-L1.6 15:40 LEARNING SEPARABLE TRANSFORMS BY INVERSE COVARIANCE ESTIMATION
Eduardo Pavez, Antonio Ortega, University of Southern California; Debargha Mukherjee, Google Inc.

Video Quality Assessment

Session Co-Chairs: Moncef Gabbouj, Tampere University of Technology; Tsung-Jung LIU, National Chung Hsing University

MP-L2.1 14:00 **MUTUAL REFERENCE FRAME-QUALITY ASSESSMENT FOR FIRST-PERSON VIDEOS**
Chen Bai, Amy Reibman, Purdue University

MP-L2.2 14:20 **INVESTIGATING THE IMPACT OF HIGH FRAME RATES ON VIDEO COMPRESSION**
Alex Mackin, Fan Zhang, Miltiadis Alexios Papadopoulos, Dave Bull, University of Bristol

MP-L2.3 14:40 **A FRAME RATE DEPENDENT VIDEO QUALITY METRIC BASED ON TEMPORAL WAVELET DECOMPOSITION AND SPATIOTEMPORAL POOLING**
Fan Zhang, Alex Mackin, David Bull, University of Bristol

MP-L2.4 15:00 **BLIND VIDEO QUALITY ASSESSMENT BASED ON SPATIO-TEMPORAL INTERNAL GENERATIVE MECHANISM**
Yun Zhu, Yongfang Wang, Yuan Shuai, Shanghai University

MP-L2.5 15:20 **JOINT EFFECT OF STALLING AND PRESENTATION QUALITY ON THE QUALITY-OF-EXPERIENCE OF STREAMING VIDEOS**
Hojatollah Yeganeh, Sharif University of Technology; Farzad Qassemi, Shahid Beheshti University; Hamid R. Rabiee, Sharif University of Technology

MP-L2.6 15:40 **A PERCEPTUALLY RELEVANT SHEARLET-BASED ADAPTATION OF THE PSNR**
Sebastian Bosse, Mischa Siekmann, Wojciech Samek, Thomas Wiegand, Fraunhofer Institute for Telecommunications, Heinrich Hertz Institute

Image and Video Segmentation I

Session Chair: Zhaohui Harry Sun, Kitware

MP-L3.1 14:00 **SPEEDING UP THE KÖHLER'S METHOD OF CONTRAST THRESHOLDING**
Guillaume Noyel, International Prevention Research Institute

MP-L3.2 14:20 **DEPTH-AWARE OBJECT INSTANCE SEGMENTATION**
Linwei Ye, University of Manitoba; Zhi Liu, Shanghai University; Yang Wang, University of Manitoba

MP-L3.3 14:40 **BACT-3D: A LEVEL SET SEGMENTATION APPROACH FOR DENSE MULTI-LAYERED 3D BACTERIAL BIOFILMS**
Jie Wang, Rituparna Sarkar, Arslan Aziz, Andrea Vaccari, Andreas Gahlmann, Scott T. Acton, University of Virginia

MP-L3.4 15:00 **INTERACTIVE EXPLORATION OF MICROSTRUCTURAL FEATURES IN GIGAPIXEL MICROSCOPY IMAGES**
Hsueh-Chien Cheng, Antonio Cardone, Amitabh Varshney, University of Maryland

MP-L3.5 15:20 **AUTOMATIC ESTIMATION OF ICE BOTTOM SURFACES FROM RADAR IMAGERY**
Mingze Xu, David Crandall, Geoffrey Fox, Indiana University; John Paden, University of Kansas

MP-L3.6 15:40 **NIGHTTIME SKY/CLOUD IMAGE SEGMENTATION**
Soumyabrata Dev, Nanyang Technological University; Florian M. Savoy, Advanced Digital Sciences Center (ADSC), University of Illinois at Urbana-Champaign; Yee Hui Lee, Nanyang Technological University; Stefan Winkler, Advanced Digital Sciences Center (ADSC), University of Illinois at Urbana-Champaign

Classification & Recognition

Session Chair: Mingyi He, Northwestern Polytechnical University

MP-L5.1 14:00 **OPTIMISTIC AND PESSIMISTIC NEURAL NETWORKS FOR OBJECT RECOGNITION**
René Grzeszick, Sebastian Sudholt, Gernot Fink, TU Dortmund University

MP-L5.2 14:20 **SCNN: SEQUENTIAL CONVOLUTIONAL NEURAL NETWORK FOR HUMAN ACTION RECOGNITION IN VIDEOS**
Hao Yang, Chunfeng Yuan, Junliang Xing, Weiming Hu, CAS Center for Excellence in Brain Science and Intelligence Technology National Laboratory of Pattern Recognition, Institute of Automation, Chinese Academy of Sciences

MP-L5.3 14:40 **GROUND2SKY LABEL TRANSFER FOR FINE-GRAINED AERIAL CAR RECOGNITION**
Baochen Sun, Microsoft AI and Research Group; Xingchao Peng, Boston University; Stella X. Yu, UC Berkeley / ICSI; Kate Saenko, Boston University

MP-L5.4 15:00 **COUPLED ANALYSIS-SYNTHESIS DICTIONARY LEARNING FOR PERSON RE-IDENTIFICATION**
Lingchuan Sun, Beijing University of Posts and Telecommunications; Yun Zhou, Academy of Broadcasting Science; Zhuqing Jiang, Aidong Men, Beijing University of Posts and Telecommunications

MP-L5.5 15:20 **PASSIVE MILLIMETER WAVE IMAGE CLASSIFICATION WITH LARGE SCALE GAUSSIAN PROCESSES**
Pablo Morales, University of Granada; Adrián Pérez-Suay, University of Valencia; Rafael Molina, University of Granada; Gustau Camps-Valls, University of Valencia; Aggelos K. Katsaggelos, Northwestern University

MP-L5.6 15:40 **HYPERSPECTRAL IMAGE CLASSIFICATION VIA SHAPE-ADAPTIVE DEEP LEARNING**
Atif Mughees, Tsinghua University; Ahmad Ali, Pakistan Institute of Engineering and Applied Sciences; Linmi Tao, Tsinghua University

Deep Learning for Retrieval

Session Chair: Yang Cong, Shenyang Institute of Automation

MP-L6.1 14:00 DEEP REGIONAL FEATURE POOLING FOR VIDEO MATCHING
*Yan Bai, Peking University; Jie Lin, Vijay Chandrasekhar, A*STAR; Yihang Lou, Peking University; Shiqi Wang, City University of Hong Kong; Ling-Yu Duan, Tiejun Huang, Peking University; Alex Kot, NTU*

MP-L6.2 14:20 LEARNING CIRCULANT SUPPORT VECTOR MACHINES FOR FAST IMAGE SEARCH
Ramin Raziperchikolaei, Miguel Carreira-Perpinan, University of California, Merced

MP-L6.3 14:40 UNSUPERVISED CONVOLUTIONAL NEURAL NETWORKS FOR LARGE-SCALE IMAGE CLUSTERING
Chih-Chung Hsu, Chia-Wen Lin, National Tsing Hua University

MP-L6.4 15:00 DEEP JOINT DISCRIMINATIVE LEARNING FOR VEHICLE RE-IDENTIFICATION AND RETRIEVAL
Yuqi Li, Yanghao Li, Hongfei Yan, Jiaying Liu, Peking University

MP-L6.5 15:20 MULTI-MODAL JOINT EMBEDDING FOR FASHION PRODUCT RETRIEVAL
Antonio Rubio, Institut de Robòtica i Informàtica Industrial (CSIC-UPC); Yu Longlong, Wide Eyes Technologies; Edgar Simo-Serra, Waseda University; Francesc Moreno-Noguer, Institut de Robòtica i Informàtica Industrial (CSIC-UPC)

MP-L6.6 15:40 DEEP NETWORK-BASED IMAGE CODING FOR SIMULTANEOUS COMPRESSION AND RETRIEVAL
Qingyu Zhang, Dong Liu, Houqiang Li, University of Science and Technology of China

Object Detection II

Session Chair: Sanghoon Lee, Yonsei University

MP-L7.1 14:00 **A UNIQUE TARGET REPRESENTATION AND VOTING MECHANISM FOR VISUAL TRACKING**
Changlin Xiao, Alper Yilmaz, The Ohio State University

MP-L7.2 14:20 **HIERARCHICAL BILINEAR NETWORK FOR HIGH PERFORMANCE FACE DETECTION**
Jiangjing Lv, Xiaohu Shao, Chongqing Institute of Green and Intelligent Technology; University of Chinese Academy of Sciences; Junliang Xing, National Laboratory of Pattern Recognition, Institute of Automation, Chinese Academy of Sciences; Pengcheng Liu, Xiangdong Zhou, Xi Zhou, Chongqing Institute of Green and Intelligent Technology

MP-L7.3 14:40 **DETECTOR WITH FOCUS: NORMALIZING GRADIENT IN IMAGE PYRAMID**
Yonghyun Kim, Bong-Nam Kang, Daijin Kim, POSTECH

MP-L7.4 15:00 **ACCURATE SMALL OBJECT DETECTION VIA DENSITY MAP AIDED SALIENCY ESTIMATION**
Xiaoqun Zhou, Yuexian Zou, Yi Wang, Peking University

MP-L7.5 15:20 **SALIENCY DETECTION BY FORWARD AND BACKWARD CUES IN DEEP-CNN**
Nevrez Imamoglu, National Institute of Advanced Industrial Science and Technology; Chi Zhang, Jiangxi University of Finance and Economics; Wataru Shimoda, National Institute of Advanced Industrial Science and Technology; Yuming Fang, Jiangxi University of Finance and Economics; Boxin Shi, National Institute of Advanced Industrial Science and Technology

MP-L7.6 15:40 **AUTOMATIC MARTIAN DUST STORM DETECTION VIA DECISION LEVEL FUSION BASED ON DEEP EXTREME LEARNING MACHINE**
Keisuke Maeda, Takahiro Ogawa, Miki Haseyama, Hokkaido University

Saliency Detection and Applications for Image and Video Analysis

Session Co-Chairs: Junwei Han, Northwestern Polytechnical University; Xueming Qian, Xi'an Jiaotong University; Ismail Ben Ayed, University of Quebec; Jinchang Ren, University of Strathclyde

MP-L8.1 14:00 **AN INTEGRATED APPROACH TO VISUAL ATTENTION MODELLING USING SPATIAL-TEMPORAL SALIENCY AND OBJECTNESS**
*Jean-Baptiste Weibel, Image & Pervasive Access Lab (IPAL); Hui Li Tan, Shijian Lu, Institute for Infocomm Research, A*STAR*

MP-L8.2 14:20 **REFLECTANCE-BASED SURFACE SALIENCY**
Gilles Pitard, The Norwegian Colour and Visual Computing Laboratory, NTNU; Gaëtan Le Goïc, Alamin Mansouri, Laboratoire LE2I, Université de Bourgogne Franche-Comté; Hugues Favrelière, Maurice Pillet, Laboratoire SYMME, Université Savoie Mont-Blanc; Sony George, Jon Yngve Hardeberg, The Norwegian Colour and Visual Computing Laboratory, NTNU

MP-L8.3 14:40 **NOVEL EVALUATION METRICS FOR SEAM CARVING BASED IMAGE RETARGETING**
Tam V. Nguyen, University of Dayton; Guangyu Gao, Beijing Institute of Technology

MP-L8.4 15:00 **SALIENCY DETECTION FOR SEISMIC APPLICATIONS USING MULTI-DIMENSIONAL SPECTRAL PROJECTIONS AND DIRECTIONAL COMPARISONS**
Muhammad Amir Shafiq, Zhiling Long, Tariq Alshawi, Ghassan AlRegib, Georgia Institute of Technology

MP-L8.5 15:20 **LABEL PROPAGATION BASED SALIENCY DETECTION VIA GRAPH DESIGN**
Tianhao Zhang, Yuan Zhou, Shuwei Huo, Chunping Hou, Tianjin University

MP-L8.6 15:40 **MULTI-SCALE CONVOLUTIONAL NEURAL NETWORKS FOR CROWD COUNTING**
Lingke Zeng, Xiangmin Xu, Bolun Cai, Suo Qiu, Tong Zhang, South China University of Technology

Blurring and Lighting

Session Chair: Xin Li, West Virginia University

MP-L9.1 14:00 **VISIBILITY ENHANCEMENT VIA OPTIMAL GAMMA TONE MAPPING FOR OST DISPLAYS UNDER AMBIENT LIGHT**
Kyu-Ho Lee, Jae-Woo Kim, Jong-Ok Kim, Korea University

MP-L9.2 14:20 **IMPROVED SCENE CAPTURE IN UNFAVORABLE LIGHTING CONDITIONS**
Megha Nawhal, IBM Research, India; Saumik Bhattacharya, K S Venkatesh, Indian Institute of Technology Kanpur

MP-L9.3 14:40 **MOTION BLUR REMOVAL VIA COUPLED AUTOENCODER**
Kavya Gupta, Brojeshwar Bhowmick, Tata Consultancy Services Limited; Angshul Majumdar, Indraprastha Institute of Information Technology Delhi

MP-L9.4 15:00 **SHADOW REMOVAL BASED ON CLUSTERING CORRECTION OF ILLUMINATION FIELD FOR URBAN AERIAL REMOTE SENSING IMAGES**
Shuang Luo, Huifang Li, Huanfeng Shen, Wuhan University

MP-L9.5 15:20 **BLIND IMAGE DEBLURRING USING CLASS-ADAPTED IMAGE PRIORS**
Marina Ljubenovic, Mario Figueiredo, Instituto de Telecomunicações

MP-L9.6 15:40 **GAUSSIAN BLUR ESTIMATION FOR PHOTON-LIMITED IMAGES**
Jizhou Li, The Chinese University of Hong Kong; Feng Xue, National Key Laboratory of Science and Technology on Test Physics and Numerical Mathematics; Thierry Blu, The Chinese University of Hong Kong

Watermarking and Steganography

Session Chair: William Puech, Université de Montpellier

MP-L4.1 14:20 **CONTRIBUTION-BASED FEATURE TRANSFER FOR JPEG MISMATCHED STEGANALYSIS**
Chaoyu Feng, Xiangwei Kong, Ming Li, Yong Yang, Yanqing Guo, School of Information and Communication Engineering, Dalian University of Technology

MP-L4.2 14:40 **A NEW BLIND COLOR IMAGE WATERMARKING BASED ON A PSYCHOVISUAL MODEL AND QUANTIZATION APPROACHES**
Pascal Lefevre, Philippe Carré, University of Poitiers, XLIM; Philippe Gaborit, University of Limoges, XLIM

MP-L4.3 15:00 **RETHINKING THE HIGH CAPACITY 3D STEGANOGRAPHY: INCREASING ITS RESISTANCE TO STEGANALYSIS**
Zhenyu Li, University of York; Se ´bastien Beugnon, William Puech, Université de Montpellier; Adrian Bors, University of York

MP-L4.4 15:20 **IMPROVING SPATIAL IMAGE ADAPTIVE STEGANALYSIS INCORPORATING THE EMBEDDING IMPACT ON THE FEATURE**
Chao Xia, Qingxiao Guan, Xianfeng Zhao, Institute of Information Engineering, Chinese Academy of Sciences; Jing Dong, Institute of Automation, Chinese Academy of Sciences; Zhoujun Xu, Beijing Information Technology Institute

MP-L4.5 15:40 **DCT/DWT BLIND MULTIPLICATIVE WATERMARKING THROUGH STUDENT-T DISTRIBUTION**
Antonis Mairgiotis, Technological Educational Institute of Thessaly; Lisimachos P. Kondi, University of Ioannina; Yongyi Yang, Illinois Institute of Technology

Representation and Modeling I

Session Chair: Dimitri Androutsos, Ryerson University

MP-PA.1 IMAGE DEBLURRING IN THE PRESENCE OF SALT-AND-PEPPER NOISE
Liming Hou, Hongqing Liu, Zhen Luo, Yi Zhou, Chongqing University of Posts and Telecommunications; Trieu-Kien Truong, I-Shou University

MP-PA.2 A GABOR FEATURE FUSION FRAMEWORK FOR HYPERSPECTRAL IMAGERY CLASSIFICATION
Sen Jia, Bin Deng, Huimin Xie, Lin Deng, Shenzhen University

MP-PA.3 UNSUPERVISED FEATURE SELECTION BY MANIFOLD REGULARIZED SELF-REPRESENTATION
Siqi Liang, Nankai University; Qian Xu, Pengfei Zhu, Qinghua Hu, Changqing Zhang, Tianjin University

MP-PA.4 NATURALNESS-PRESERVED TONE MAPPING IN IMAGES BASED ON PERCEPTUAL QUANTIZATION
Cheolkon Jung, Kaiqiang Xu, Xidian University

MP-PA.5 SELECTING ATTENTIVE FRAMES FROM VISUALLY COHERENT VIDEO CHUNKS FOR SURVEILLANCE VIDEO SUMMARIZATION
Wenzhong Wang, Qiaoqiao Zhang, Bin Luo, Jin Tang, Rui Ruan, Chenglong Li, Anhui University

MP-PA.6 SEMI-SUPERVISED MULTI-OUTPUT IMAGE MANIFOLD REGRESSION
Hui Wu, IBM Research; Scott Spurlock, Elon University; Richard Souvenir, Temple University

MP-PA.7 ESTIMATION OF SIGNAL-DEPENDENT NOISE LEVEL FUNCTION USING MULTI-COLUMN CONVOLUTIONAL NEURAL NETWORK
Jingyu Yang, Xin Liu, Xiaolin Song, Kun Li, Tianjin University

MP-PA.8 SALPROP: SALIENT OBJECT PROPOSALS VIA AGGREGATED EDGE CUES
Prerana Mukherjee, Brejesh Lall, Indian Institute of Technology Delhi; Sarvaswa Tandon, National Institute of Technology

Linear and Non-linear Filtering II

Session Chair: Sei-ichiro Kamata, Waseda University

MP-PB.1 A FAMILY OF RISK ESTIMATORS AS CRITERIA FOR PSF ESTIMATION: FROM SURE TO GCV
Feng Xue, Lian Xue, Jiaqi Liu, National Key Laboratory of Science and Technology on Test Physics and Numerical Mathematics

MP-PB.2 SKELLAM DISTRIBUTION BASED ADAPTIVE TWO-STAGE NON-LOCAL METHODS FOR PHOTON-LIMITED POISSON NOISY IMAGE RECONSTRUCTION
Lingyan Zhao, Jun Zhang, Zhihui Wei, Nanjing University of Science and Technology

MP-PB.3 CONVOLUTIONAL NEURAL NETWORK-BASED DEPTH IMAGE ARTIFACT REMOVAL
Lijun Zhao, Beijing Jiaotong University; Jie Liang, Simon Fraser University; Huihui Bai, Beijing Jiaotong University; Anhong Wang, Taiyuan University of Science and Technology; Yao Zhao, Beijing Jiaotong University

MP-PB.4 SEMANTIC IMAGE CONTENT FILTERING VIA EDGE-PRESERVING SCALE-AWARE FILTER
Wei Ye, Kai-Kuang Ma, Nanyang Technological University

MP-PB.5 A BIDIRECTIONAL ADAPTIVE BANDWIDTH MEAN SHIFT STRATEGY FOR CLUSTERING
Fanyang Meng, Hong Liu, Shenzhen Graduate School, Peking University; Yongsheng Liang, Wei Liu, ShenZhen Institute of Information Technology; Jihong Pei, Shenzhen University

MP-PB.6 EXTENDED CONJUGATE POLAR FOURIER TRANSFORM IN CONVOLUTION NETWORK
Can Xu, Shanghai Jiao Tong University; Wenrui Dai, University of California, San Diego; Hongkai Xiong, Shanghai Jiao Tong University

MP-PB.7 COMPLEX COEFFICIENT REPRESENTATION FOR IIR BILATERAL FILTER
Norishige Fukushima, Graduate School of Engineering, Nagoya Institute of Technology; Kenjiro Sugimoto, Sei-ichiro Kamata, Waseda University

Image and Video Compression Standards

Session Co-Chairs: Ji-Zheng Xu, Microsoft Research Asia; Hanli Wang, Tongji University

MP-PC.1 SELECTIVE MOTION ESTIMATION STRATEGY BASED ON CONTENT CLASSIFICATION FOR HEVC SCREEN CONTENT CODING
Mengmeng Zhang, Shuai Wang, North China University of Technology; Bin Li, Microsoft Research Asia

MP-PC.2 AN EFFICIENT INTRA CODING ALGORITHM BASED ON STATISTICAL LEARNING FOR SCREEN CONTENT CODING
Hao Yang, Liquan Shen, Ping An, Shanghai University

MP-PC.3 FAST MODE DECISION ALGORITHM FOR HEVC SCREEN CONTENT INTRA CODING
Wei Kuang, Sik-Ho Tsang, Yui-Lam Chan, Wan-Chi Siu, The Hong Kong Polytechnic University

MP-PC.4 TEMPORAL CORELATION BASED HIERARCHICAL QUANTIZATION PARAMETER DETERMINATION FOR HEVC VIDEO CODING
Yimin Zhou, Hongyu Wang, Ling Tian, Ce Zhu, University of Electronic Science and Technology of China

MP-PC.5 GEOMETRIC DERIVED MOTION VECTOR FOR MOTION PREDICTION IN BLOCK-BASED VIDEO CODING
Yucheng Sun, Lu Yu, Zhejiang University

MP-PC.6 CODING BLOCK-LEVEL PERCEPTUAL VIDEO CODING FOR 4:4:4 DATA IN HEVC
Lee Prangnell, Miguel Hernández-Cabronero, Victor Sanchez, University of Warwick

MP-PC.7 VIDEO DECODING ENERGY ESTIMATION USING PROCESSOR EVENTS
Christian Herglotz, André Kaup, Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU)

MP-PC.8 CONTENT ADAPTIVE QUANTIZATION PARAMETER CASCADING FOR RANDOM-ACCESS STRUCTURE IN HEVC
Kaifang Yang, Shaanxi Normal University; Shuai Wan, Northwestern Polytechnical University; Yanchao Gong, Xi'an University of Posts and Telecommunications; Yan Feng, Northwestern Polytechnical University

Stereoscopic, Multiview, and 3D Processing II

Session Chair: Yulan Guo, National University of Defense Technology

MP-PD.1 AN EFFICIENT LOCAL METHOD FOR STEREO MATCHING USING DAISY FEATURES
Xiaoming Peng, Abdesselam Bouzerdoum, Son Lam Phung, The University of Wollongong

MP-PD.2 A PARALLEL CONVOLUTIONAL NEURAL NETWORK ARCHITECTURE FOR STEREO VISION ESTIMATION
Yao Chou, Dah-Jye Lee, Brigham Young University; Dong Zhang, Sun Yat-sen University; Karina Hill, Brigham Young University

MP-PD.3 STEREO AMBIGUITY INDEX FOR SEMI-GLOBAL MATCHING
Mathias Paget, Jean-Philippe Tarel, Université Paris-Est, IFSTTAR; Pascal Monasse, Université Paris-Est, Ecole des Ponts

MP-PD.4 UNSUPERVISED STEREO MATCHING USING CORRESPONDENCE CONSISTENCY
Sunghun Joung, Seungryong Kim, Bumsub Ham, Kwanghoon Sohn, Yonsei University

MP-PD.5 CONVOLUTIONAL COST AGGREGATION FOR ROBUST STEREO MATCHING
Somi Jeong, Seungryong Kim, Bumsub Ham, Kwanghoon Sohn, Yonsei University

MP-PD.6 FULLY AUTOMATED HIGHLY ACCURATE 3D RECONSTRUCTION FROM MULTIPLE VIEWS
Thomas Ebner, Oliver Schreer, Ingo Feldmann, Fraunhofer Institute for Telecommunications, Heinrich Hertz Institute

Motion Estimation and Analysis I

Session Chair: Leandro A. F. Fernandes, Universidade Federal Fluminense

MP-PE.1 A GENERAL FORM OF ILLUMINATION-INVARIANT DESCRIPTORS IN VARIATIONAL OPTICAL FLOW ESTIMATION
Dinh Hoan Trinh, Walter Blondel, Christian Daul, Université de Lorraine

MP-PE.2 A SPARSE APPROACH TO PEDESTRIAN TRAJECTORY MODELING USING MULTIPLE MOTION FIELDS
Catarina Barata, Jacinto C. Nascimento, Jorge S. Marques, Instituto Superior Técnico

MP-PE.3 OCCLUSION DETECTION IN DENSE STEREO ESTIMATION WITH CONVEX OPTIMIZATION
Pauline Tan, Onera; Antonin Chambolle, Ecole polytechnique, CNRS, Université Paris-Saclay; Pascal Monasse, Ecole des Ponts ParisTech, CNRS, Université Paris Est

MP-PE.4 AN OBJECT BASED GRAPH REPRESENTATION FOR VIDEO COMPARISON
Xin Feng, Chongqing University of Technology; Yuanyi Xue, Yao Wang, NYU Tandon School of Engineering

MP-PE.5 FSVO: SEMI-DIRECT MONOCULAR VISUAL ODOMETRY USING FIXED MAPS
Zhiheng Fu, National University of Defense Technology; Yulan Guo, Institute of Computing Technology, Chinese Academy of Sciences; Zaiping Lin, Wei An, National University of Defense Technology

MP-PE.6 JOINT COARSE-AND-FINE REASONING FOR DEEP OPTICAL FLOW
Victor Vaquero, Institut de Robòtica i Informàtica Industrial (CSIC-UPC); German Ros, Toyota Research Institute; Francesc Moreno-Noguer, Institut de Robòtica i Informàtica Industrial (CSIC-UPC); Antonio M. Lopez, Computer Vision Center; Alberto Sanfeliu, Institut de Robòtica i Informàtica Industrial (CSIC-UPC)

MP-PE.7 A SEMI-GLOBAL MOTION ESTIMATION OF A REPETITION PATTERN REGION FOR FRAME INTERPOLATION
Van Thang Nguyen, Lee Hyuk-Jae, Seoul National University

Object Tracking I

Session Chair: Yuchao Dai, Australia National University

MP-PF.1 REGION-BASED FULLY CONVOLUTIONAL SIAMESE NETWORKS FOR ROBUST REAL-TIME VISUAL TRACKING
Longchao Yang, Peilin Jiang, Fei Wang, Xuan Wang, Xi'an Jiaotong University

MP-PF.2 A NOVEL ADAPTIVE KERNEL CORRELATION FILTER TRACKER WITH MULTIPLE FEATURE INTEGRATION
Zhonggeng Liu, Zhichao Lian, Yang Li, School of Computer Science and Engineering, Nanjing University of Science and Technology

MP-PF.3 MULTI-OBJECT TRACKING BY VIRTUAL NODES ADDED MIN-COST NETWORK FLOW
Peixin Liu, Xiaofeng Li, Haoyang Feng, Zhizhong Fu, University of Electronic Science and Technology of China

MP-PF.4 SPATIAL-SEQUENTIAL-SPECTRAL CONTEXT AWARENESS TRACKING
Jianwu Fang, Zheng Li, Jianru Xue, Xi'an Jiaotong University

MP-PF.5 ROBUST VISUAL TRACKING VIA MULTI-VIEW DISCRIMINANT BASED SPARSE REPRESENTATION
Kang Bin, Nanjing University of Posts and Telecommunications; Liang Dong, Nanjing University of Aeronautics and Astronautics; Zhang Suofei, Nanjing University of Posts and Telecommunications

MP-PF.6 JOINT TRACKING AND GAIT RECOGNITION OF MULTIPLE PEOPLE IN VIDEO
Maryam Babaee, Gerhard Rigoll, Mohammadreza Babaee, Institute for Human-Machine Communication, TU Munich

MP-PF.7 OBJECT TRACKING WITH ADAPTIVE ELASTIC NET REGRESSION
Shunli Zhang, Weiwei Xing, Beijing Jiaotong University

MP-PF.8 GATE CONNECTED CONVOLUTIONAL NEURAL NETWORK FOR OBJECT TRACKING
Kokul Thanikasalam, Clinton Fookes, Sridharan Sridha, Queensland University of Technology; Ramanan Amirthalingam, University of Jaffna; Amalka J. Pinidiyaarachchi, University of Peradeniya, Sri Lanka

MP-PF.9 INTER-CAMERA TRACKING BASED ON FULLY UNSUPERVISED ONLINE LEARNING
Young-Gun Lee, Zheng Tang, Jenq-Neng Hwang, University of Washington; Zhijun Fang, Shanghai University of Engineering Science

MP-PF.10 A HIERARCHICAL FEATURE MODEL FOR MULTI-TARGET TRACKING
Mohib Ullah, Ahmed Kedir Mohammed, Faouzi Alaya Cheikh, Norwegian University of Science and Technology; Zhaohui Wang, Hainan University

MP-PF.11 INTEGRATION OF PRECISE IRIS LOCALIZATION INTO ACTIVE APPEARANCE MODELS FOR AUTOMATIC INITIALIZATION AND ROBUST DEFORMABLE FACE TRACKING
Sebastian Vater, Ralph Ivancevic, Fernando Puente León, Karlsruhe Institute of Technology

Image Classification and Applications II

Session Chair: Haojie Li, Dalian University of Technology

MP-PG.1 RECOVERING COMPLEX NON-RIGID 3D STRUCTURES FROM MONOCULAR IMAGES BY UNION OF NONLINEAR SUBSPACES
Yanan Chen, Fei Wang, Xuan Wang, Xi'an Jiaotong University

MP-PG.2 ACCURATE MESH-BASED ALIGNMENT FOR GROUND AND AERIAL MULTI-VIEW STEREO MODELS
Yang Zhou, University of Chinese Academy of Sciences; Shuhan Shen, Institute of Automation, Chinese Academy of Sciences; Xiang Gao, University of Chinese Academy of Sciences; Zhanyi Hu, Institute of Automation, Chinese Academy of Sciences

MP-PG.3 DIFFUSE-SPECULAR SEPARATION OF MULTI-VIEW IMAGES UNDER VARYING ILLUMINATION
Kouki Takechi, Takahiro Okabe, Kyushu Institute of Technology

MP-PG.4 AN AERIAL CHANGE DETECTION SYSTEM USING MULTIPLE DETECTOR FUSION AND ADABOOST CLASSIFICATION
Yi Tan, Subhodev Das, Ali Chaudhry, SRI International

MP-PG.5 SLIDING WINDOW FILTER BASED UNKNOWN OBJECT POSE ESTIMATION
Jiaru Song, University of Toronto

MP-PG.6 POINT DENSITY-INVARIANT 3D OBJECT DETECTION AND POSE ESTIMATION
Su-A Kim, Intel Visual Computing Institute, Saarland Informatics Campus, Germany; Kuk-Jin Yoon, Gwangju Institute of Science and Technology

MP-PG.7 DEEP-MAPNETS : A RESIDUAL NETWORK FOR 3D ENVIRONMENT REPRESENTATION
Manohar Kuse, Sunil Prasad Jaiswal, Shaojie Shen, The Hong Kong University of Science and Technology

MP-PG.8 SINGLE IMAGE DEPTH PREDICTION USING SUPER-COLUMN SUPER-PIXEL FEATURES
Xufeng Guo, Kien Nguyen, Simon Denman, Clinton Fookes, Sridha Sridharan, Queensland University of Technology

MP-PG.9 TINY HEAD POSE CLASSIFICATION BY BODILY CUES
Irtiza Hasan, University of Verona; Theodore Tsesmelis, Istituto Italiano di Tecnologia; Fabio Galasso, Corporate Innovation OSRAM GmbH; Alessio Del Bue, Istituto Italiano di Tecnologia; Marco Cristani, University of Verona

MP-PG.10 DETECTION OF STATIONARY FOREGROUND OBJECTS USING MULTIPLE NONPARAMETRIC BACKGROUND-FOREGROUND MODELS ON A FINITE STATE MACHINE
Carlos Cuevas, Raquel Martínez, Daniel Berjón, Narciso García, Universidad Politécnica de Madrid

Multispectral imaging

Session Chair: Zhiwei Xiong, University of Science and Technology of China

MQ-L1.1 16:30 **STRUCTURED BINARY FEATURE EXTRACTION FOR HYPERSPECTRAL IMAGERY CLASSIFICATION**
Zisha Zhong, Bin Fan, National Laboratory of Pattern Recognition, Institute of Automation, Chinese Academy of Sciences; Jun Bai, Research Center for Brain-inspired Intelligence, Institute of Automation, Chinese Academy of Sciences; Shiming Xiang, Chunhong Pan, National Laboratory of Pattern Recognition, Institute of Automation, Chinese Academy of Sciences

MQ-L1.2 16:50 **MULTIMODAL FUSION VIA A SERIES OF TRANSFERS FOR NOISE REMOVAL**
Chang-Hwan Son, Kunsan National University; Xiao-Ping Zhang, Ryerson University

MQ-L1.3 17:10 **A VARIATIONAL PANSHARPENING APPROACH BASED ON REPRODUCIBLE KERNEL HILBERT SPACE AND HEAVISIDE FUNCTION**
Liang-Jian Deng, University of Electronic Science and Technology of China; Gemine Vivone, North Atlantic Treaty Organization (NATO) Science & Technology Organization (STO); Weihong Guo, Case Western Reserve University; Mauro Dalla Mura, Jocelyn Chanussot, University of Grenoble Alpes

MQ-L1.4 17:30 **UNSUPERVISED HYPERSPECTRAL BAND SELECTION VIA MULTI-FEATURE INFORMATION-MAXIMIZATION CLUSTERING**
Marco Bevilacqua, Yannick Berthoumieu, Institut polytechnique de Bordeaux

MQ-L1.5 17:50 **CAMERA SPECTRAL SENSITIVITY, ILLUMINATION AND SPECTRAL REFLECTANCE ESTIMATION FOR A HYBRID HYPERSPECTRAL IMAGE CAPTURE SYSTEM**
Lin Zhang, Ying Fu, Beijing Institute of Technology; Yinqiang Zheng, National Institute of Informatics; Hua Huang, Beijing Institute of Technology

Image Representation I

Session Co-Chairs: Dimitri Androutsos, Ryerson University; Moncef Gabbouj, Tampere University of Technology

MQ-L2.1 16:30 **CONVOLUTIONAL FACTOR ANALYSIS INSPIRED COMPRESSIVE SENSING**
Xin Yuan, Bell Labs; Yunchen Pu, Duke University

MQ-L2.2 16:50 **WEIGHTED MEDIAN-SHIFT ON GRAPHS FOR GEOMETRIC MODEL FITTING**
Xiong Zhou, Hanzi Wang, Guobao Xiao, Xing Wang, Yan Yan, Xiamen University; Liming Zhang, University of Macau

MQ-L2.3 17:10 **POLYGONIZATION OF REMOTE SENSING CLASSIFICATION MAPS BY MESH APPROXIMATION**
Emmanuel Maggiori, Yuliya Tarabalka, Inria Sophia Antipolis Mediterranee; Guillaume Charpiat, Inria Saclay; Pierre Alliez, Inria Sophia Antipolis Mediterranee

MQ-L2.4 17:30 **FISHER VECTOR BASED CNN ARCHITECTURE FOR IMAGE CLASSIFICATION**
Yan Song, Peiseng Wang, Xinhai Hong, University of Science and Technology of China; Ian McLoughlin, University of Kent

MQ-L2.5 17:50 **LINEAR APPROXIMATION OF MEAN CURVATURE**
Yuanhao Gong, ETH Zürich; Yuan Xie, Chinese Academy of Sciences

Segmentation Using Deep Learning

Session Chair: Adrian Barbu, Florida State University

MQ-L3.1 16:30 **CONTEXT-AWARE CASCADE NETWORK FOR SEMANTIC LABELING IN VHR IMAGE**
Yongcheng Liu, Bin Fan, Lingfeng Wang, Jun Bai, Shiming Xiang, Chunhong Pan, Institute of Automation, Chinese Academy of Sciences

MQ-L3.2 16:50 **MICROVASCULATURE SEGMENTATION OF ARTERIOLES USING DEEP CNN**
Yasmin Kassim, University of Missouri; V. B. Surya Prasath, Olga V. Glinskii, Vladislav V. Glinsky, Virginia H. Huxley, Kannappan Palaniappan, University of Missouri-Columbia

MQ-L3.3 17:10 **DEEP CNN WITH COLOR LINES MODEL FOR UNMARKED ROAD SEGMENTATION**
Shashank Yadav, Suvam Patra, Indian Institute of Technology Delhi; Chetan Arora, Indraprastha Institute of Information Technology Delhi; Subhashis Banerjee, Indian Institute of Technology Delhi

MQ-L3.4 17:30 **VOLUME SEGMENTATION USING CONVOLUTIONAL NEURAL NETWORKS WITH LIMITED TRAINING DATA**
Hsueh-Chien Cheng, Amitabh Varshney, University of Maryland

3D Analysis

Session Chair: Yang Cong, Shenyang Institute of Automation

MQ-L5.1 16:30 **CLASSIFICATION OF MULTI-FOCAL NEMATODE IMAGE STACKS USING A PROJECTION BASED MULTILINEAR APPROACH**
Min Liu, Xueping Wang, Xiaoyan Liu, Hunan University; Hongzhong Zhang, Columbia University

MQ-L5.2 16:50 **A ROTATION INVARIANT 3D INDOOR SCENE LABELING APPROACH BASED ON CONDITIONAL RANDOM FIELDS**
Yankun Lang, Haiyuan Wu, Qian Chen, Wakayama University

MQ-L5.3 17:10 **VIEW-INVARIANT OBJECT RECOGNITION USING HOMOGRAPHY CONSTRAINTS**
Sina Lotfian, Hassan Foroosh, University of Central Florida

MQ-L5.4 17:30 **PRINCIPAL CURVATURE OF POINT CLOUD FOR 3D SHAPE RECOGNITION**
Justin Lev, Universite Grenoble Alpes; Joo Hwee Lim, Institute for Infocomm Research; Nizar Ouarti, Universite Pierre et Marie Curie

MQ-L5.5 17:50 **INTEGRATED 3D FEATURE AUGMENTATION AND VIEW SELECTION IN COMMERCIAL PRODUCT SEARCH**
Anu Susan Skaria, Kim-Hui Yap, Nanyang Technological University

Content Summarization

Session Chair: Zhengjun Zha, University of Science and Technology of China

MQ-L6.1 16:30 **POI SUMMARIZATION BY COMBINING AESTHETICS AND DIVERSITY USING 3D RECONSTRUCTION**
Cheng Li, Xueming Qian, Guoshuai Zhao, Xi'an Jiaotong University

MQ-L6.2 16:50 **SUMMARIZATION OF HUMAN ACTIVITY VIDEOS USING A SALIENT DICTIONARY**
Ioannis Mademlis, Anastasios Tefas, Ioannis Pitas, Aristotle University of Thessaloniki

MQ-L6.3 17:10 **WHEN SALIENCY MEETS SENTIMENT: UNDERSTANDING HOW IMAGE CONTENT INVOKES EMOTION AND SENTIMENT**
Honglin Zheng, Tianlang Chen, Quanzeng You, Jiebo Luo, University of Rochester

MQ-L6.4 17:30 **MVLFDA-BASED VIDEO PREFERENCE ESTIMATION USING COMPLEMENTARY PROPERTIES OF FEATURES**
Akira Toyoda, Takahiro Ogawa, Miki Haseyama, Hokkaido University

MQ-L6.5 17:50 **BATCH-NORMALIZED RECURRENT HIGHWAY NETWORKS**
Chi Zhang, Thang Nguyen, Shagan Sah, Raymond Ptucha, Rochester Institute of Technology; Alexander Loui, Kodak Alaris Inc.; Carl Salvaggio, Rochester Institute of Technology

Object Tracking II

Session Chair: Wei Feng, Tianjing University

MQ-L7.1 16:30 **ONLINE MULTI-OBJECT TRACKING WITH CONVOLUTIONAL NEURAL NETWORKS**
Long Chen, Haizhou Ai, Chong Shang, Zijie Zhuang, Tsinghua University; Bo Bai, Huawei Technologies

MQ-L7.2 16:50 **COMP-LOP: COMPLEX FORM OF LOCAL ORIENTATION PLANE FOR OBJECT TRACKING**
Miaobin Cen, Cheolkon Jung, Xidian University

MQ-L7.3 17:10 **ONLINE MULTI-OBJECT TRACKING BASED ON HIERARCHICAL ASSOCIATION AND SPARSE REPRESENTATION**
Zijian Lin, Huicheng Zheng, Bo Ke, Lvran Chen, Sun Yat-sen University

MQ-L7.4 17:30 **DEEP TRACKING WITH OBJECTNESS**
Xinyu Wang, Hanxi Li, Jiangxi Normal University; Yi Li, Toyota Research Institute; Fatih Porikli, Australian National University; Mingwen Wang, Jiangxi Normal University

Object Detection III

Session Chair: Guijin Wang, Tsinghua University

MQ-L8.1 16:30 **A HIGHLY ACCURATE FACIAL REGION NETWORK FOR UNCONSTRAINED FACE DETECTION**
Han Shu, Dangdang Chen, Yali Li, Shengjin Wang, Tsinghua University

MQ-L8.2 16:50 **REAL-TIME OBJECT DETECTION BY A MULTI-FEATURE FULLY CONVOLUTIONAL NETWORK**
Yajing Guo, Beijing University of Posts and Telecommunications; Xiaoqiang Guo, Academy of Broadcasting Science; Zhuqing Jiang, Aidong Men, Beijing University of Posts and Telecommunications; Yun Zhou, Academy of Broadcasting Science

MQ-L8.3 17:10 **OBJECT LOCALIZATION BY OPTIMIZING CONVOLUTIONAL NEURAL NETWORK DETECTION SCORE USING GENERIC EDGE FEATURES**
Elham Etemad, Qigang Gao, Dalhousie University

MQ-L8.4 17:30 **GATED ADDITIVE SKIP CONTEXT CONNECTION FOR OBJECT DETECTION**
Haoran Li, Hongxun Yao, Yuxin Hou, Xiaoshuai Sun, Harbin Institute of Technology

MQ-L8.5 17:50 **RELIABLE PEDESTRIAN DETECTION USING A DEEP NEURAL NETWORK TRAINED ON PEDESTRIAN COUNTS**
Sanjukta Ghosh, Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU) , Siemens Corporate Technology; Peter Amon, Andreas Hutter, Siemens Corporate Technology; André Kaup, Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU)

Color Image Processing

Session Chair: Tsung-Jung Liu, National Chung Hsing University

MQ-L9.1 16:30 **STRUCTURE-ADAPTIVE VECTOR MEDIAN FILTER FOR IMPULSE NOISE REMOVAL IN COLOR IMAGES**
Lianghai Jin, Min Jin, Xangyang Xu, Enmin Song, Huazhong University of Science and Technology

MQ-L9.2 16:50 **COLOR TRANSFER FOR UNDERWATER DEHAZING AND DEPTH ESTIMATION**
Codruta O. Ancuti, UDG; Cosmin Ancuti, UPT; Christophe De Vleeschouwer, University Catholique of Louvain; Laszlo Neumann, Rafael Garcia, UDG

MQ-L9.3 17:10 **SUPERPIXEL-BASED COLOR TRANSFER**
Rémi Giraud, Vinh-Thong Ta, University of Bordeaux; Nicolas Papadakis, CNRS

MQ-L9.4 17:30 **COLOR CORRECTION OF UNDERWATER IMAGES BASED ON MULTI-ILLUMINANT ESTIMATION WITH EXPOSURE BRACKETING IMAGING**
Kohei Nomura, Daisuke Sugimura, Takayuki Hamamoto, Tokyo University of Science

MQ-L9.5 17:50 **TWO-STEP MULTI-ILLUMINANT COLOR CONSTANCY FOR OUTDOOR SCENES**
Sang-Ho Lee, Sung-Min Woo, Ji-Hoon Choi, Jong-Ok Kim, Korea University

Representation and Modeling II

Session Chair: Yuming Fang, Jiangxi University of Finance and Economics

MQ-PA.1 MOMENTSNET: A SIMPLE LEARNING-FREE METHOD FOR BINARY IMAGE RECOGNITION
Jiasong Wu, Shijie Qiu, Youyong Kong, Yang Chen, Southeast University; Lotfi Senhadji, Université de Rennes 1; Huazhong Shu, Southeast University

MQ-PA.2 USING 2D ARMA-GARCH FOR ULTRASOUND IMAGES DENOISING
Safia Raslain, Fella Hachouf, Soumia Kharfouchi, Laboratoire d'Automatique et de Robotique Departement d' electronique' Universite des Freres Mentouri, Constantine, Algerie

MQ-PA.3 ANALYSIS-OPERATOR GUIDED SIMULTANEOUS TENSOR DECOMPOSITION AND COMPLETION
Jiaojiao Xiong, Sanqian Li, Qiegen Liu, Xiaoling Xu, Nanchang University

MQ-PA.4 SPARSE NONNEGATIVE DYNAMIC MODE DECOMPOSITION
Naoya Takeishi, The University of Tokyo; Yoshinobu Kawahara, Osaka University; Takehisa Yairi, The University of Tokyo

MQ-PA.5 HEAD POSE ESTIMATION USING LEARNED DISCRETIZATION
Se Yeon Kim, Georgia Institute of Technology; Scott Spurlock, Elon University; Richard Souvenir, Temple University

MQ-PA.6 A MODEL FOR AUTOMATICALLY TRACING OBJECT BOUNDARIES
Fang Yang, Laurent Cohen, Université Paris Dauphine; Alfred Bruckstein, technion

MQ-PA.7 A MULTI-LAYER IMAGE REPRESENTATION USING REGULARIZED RESIDUAL QUANTIZATION: APPLICATION TO COMPRESSION AND DENOISING
Sohrab Ferdowsi, Slava Voloshynovskiy, Dimche Kostadinov, University of Geneva

MQ-PA.8 DEEP DECOMPOSITION OF CIRCULARLY SYMMETRIC GABOR WAVELET FOR ROTATION-INVARIANT TEXTURE IMAGE CLASSIFICATION
Li Chaorong, Huang Yuanyuan, University of Electronic Science and Technology of China

Multi-resolution Processing

Session Chair: Thierry Blu, Chinese University of Hong Kong

MQ-PB.1 ACCELERATING DISCRETE WAVELET TRANSFORMS ON GPUS
David Barina, Michal Kula, Michal Matysek, Pavel Zemcik, Brno University of Technology

MQ-PB.2 SALIENCY PREDICTION BASED ON NEW DEEP MULTI-LAYER CONVOLUTION NEURAL NETWORK
Dandan Zhu, Ye Luo, Xuan Shao, Tongji University; Laurent Itti, University of Southern California; Jianwei Lu, Tongji University

MQ-PB.3 COMPLEX NONSEPARABLE OVERSAMPLED LAPPED TRANSFORM FOR SPARSE REPRESENTATION OF MILLIMETER WAVE RADAR IMAGE
Satoshi Nagayama, Shogo Muramatsu, Hiroyoshi Yamada, Niigata University; Yuuichi Sugiyama, FUJITSU TEN LIMITED

MQ-PB.4 LOSSLESS COMPRESSION OF CFA SAMPLED IMAGE USING DECORRELATED MALLAT WAVELET PACKET DECOMPOSITION
Yeejin Lee, University of California, San Diego; Keigo Hirakawa, University of Dayton; Truong Q. Nguyen, University of California, San Diego

MQ-PB.5 MULTIDIMENSIONAL NONSEPARABLE OVERSAMPLED LAPPED TRANSFORMS: THEORY AND DESIGN
Shogo Muramatsu, Niigata University; Kosuke Furuya, Toyota Motor Corporation; Naotaka Yuki, Nippon Telegraph and Telephone East Corporation

Video Coding III

Session Chair: Zixiang Xiong, Texas A&M University

MQ-PC.1 ASYMMETRIC CIRCULAR PROJECTION FOR DYNAMIC VIRTUAL REALITY VIDEO STREAM SWITCHING
Yueming Wang, Ronggang Wang, Zhenyu Wang, Wen Gao, Peking University

MQ-PC.2 4K-UHD REAL-TIME HEVC ENCODER WITH GPU ACCELERATED MOTION ESTIMATION
Fumiyo Takano, Hiroaki Igarashi, Tatsuji Moriyoshi, NEC Corporation

MQ-PC.3 SURVEILLANCE VIDEO CODING WITH DYNAMIC TEXTURAL BACKGROUND DETECTION
Kun Yang, Fangdong Chen, Dong Liu, Zhibo Chen, Weiping Li, University of Science and Technology of China

MQ-PC.4 VIDEO QUALITY ENHANCEMENT VIA QP ADAPTATION BASED ON PERCEPTUAL CODING MAPS
Miltiadis Alexios Papadopoulos, University of Bristol; Yashas Rai, University of Nantes; Angeliki Katsenou, Dimitris Agrafiotis, University of Bristol; Patrick Le Callet, University of Nantes; David Bull, University of Bristol

MQ-PC.5 HIGHLY PARALLEL HEVC MOTION ESTIMATION BASED ON MULTIPLE TEMPORAL PREDICTORS AND NESTED DIAMOND SEARCH
Esmaeil Hojati, Jean-François Franche, Stéphane Coulombe, Carlos Vázquez, École de technologie supérieure

MQ-PC.6 SYNTHESIS OF FINE DETAILS IN B PICTURE FOR DYNAMIC TEXTURES
Uday Singh Thakur, Madhukar Bhat, Max Bläser, Mathias Wien, RWTH Aachen University; David Bull, University of Bristol; Jens-Rainer Ohm, RWTH Aachen University

MQ-PC.7 TEXTURE PLUS DEPTH VIDEO CODING USING CAMERA GLOBAL MOTION INFORMATION
Fei Cheng, Tammam Tillo, Jimin Xiao, Xi'an Jiaotong-Liverpool University; Byeungwoo Jeon, Sungkyunkwan University

Computational Imaging I

Session Chair: Xun Cao, Nanjing University

MQ-PD.1 ADAPTIVE OPTIMAL BIT-DEPTH ESTIMATION IN COMPRESSED VIDEO SENSING
Zhi-Jie He, Chun-Ling Yang, Rui-Dong Tang, Li-Hong Ma, South China University of Technology

MQ-PD.2 IMPROVED IMAGE SELECTION FOR FOCUS STACKING IN DIGITAL PHOTOGRAPHY
David Choi, Aliya Pazylbekova, Wuhan Zhou, Peter van Beek, University of Waterloo

MQ-PD.3 A MULTIHYPOTHESIS-BASED RESIDUAL RECONSTRUCTION SCHEME IN COMPRESSED VIDEO SENSING
Wen-Hao Li, Chun-Ling Yang, Li-Hong Ma, South China University of Technology

MQ-PD.4 COMPACT IMAGE REPRESENTATION BY BINARY COMPONENT ANALYSIS
Zhaohui Sun, Anthony Hoogs, Kitware Inc.

MQ-PD.5 FABRIC DEFECT DETECTION BASED ON IMPROVED LOW-RANK AND SPARSE MATRIX DECOMPOSITION
Jianzhu Wang, Qingyong Li, Jinrui Gan, Haomin Yu, Beijing Jiaotong University

MQ-PD.6 TENSORIAL COMPRESSIVE SENSING OF JOINTLY SPARSE MATRICES WITH APPLICATIONS TO COLOR IMAGING
Edgar A. Bernal, United Technologies Research Center; Qun Li, Microsoft Corporation

MQ-PD.7 COLOR REPRESENTATION IN DEEP NEURAL NETWORKS
Martin Engilberge, École polytechnique fédérale de Lausanne, Technicolor; Edo Collins, Sabine Süsstrunk, École polytechnique fédérale de Lausanne

MQ-PD.8 LEARNING OPTIMAL PARAMETERS FOR BINARY SENSING IMAGE RECONSTRUCTION ALGORITHMS
Renán Rojas, Universidad de Ingeniería y Tecnología; Wangyu Luo, Harvard University; Victor Murray, Universidad de Ingeniería y Tecnología; Yue Lu, Harvard University

MQ-PD.9 SPATIALLY ADAPTIVE IMAGE COMPRESSION USING A TILED DEEP NETWORK
David Minnen, George Toderici, Michele Covell, Troy Chinen, Nick Johnston, Joel Shor, Sung Jin Hwang, Damien Vincent, Saurabh Singh, Google Inc.

Shape Analysis I

Session Chair: Huihui Bai, Beijing Jiaotong University

MQ-PE.1 LOCAL VOXELIZED STRUCTURE FOR 3D LOCAL SHAPE DESCRIPTION: A BINARY REPRESENTATION
Siwen Quan, Jie Ma, Fangyu Hu, Bin Fang, Tao Ma, Huazhong University of Science and Technology

MQ-PE.2 A NEW HIGH PRECISION EYE CENTER LOCALIZATION TECHNIQUE
Nikolaos Poulopoulos, Emmanouil Psarakis, University of Patras

MQ-PE.3 HIGH-ORDER LOCAL NORMAL DERIVATIVE PATTERN (LNDP) FOR 3D FACE RECOGNITION
Sima Soltanpour, Q.M. Jonathan Wu, University of Windsor

MQ-PE.4 WATER SURFACE RECONSTRUCTION AND TRULY RANDOM NUMBERS GENERATION FROM IMAGES OF WIND-GENERATED GRAVITY WAVES
Gustavo Netto, Leandro Fernandes, Universidade Federal Fluminense

MQ-PE.5 BAFT: BINARY AFFINE FEATURE TRANSFORM
Jonas Arnfred, Viet Dung Nguyen, Stefan Winkler, Advanced Digital Sciences Center

MQ-PE.6 MUSEED: A MOBILE IMAGE ANALYSIS APPLICATION FOR PLANT SEED MORPHOMETRY
Ke Gao, Tommi White, Kannappan Palaniappan, Michele Warmund, Filiz Bunyak, University of Missouri-Columbia

MQ-PE.7 CASCADE SUPPORT VECTOR REGRESSION-BASED FACIAL EXPRESSION-AWARE FACE FRONTALIZATION
Yiming Wang, Hui Yu, University of Portsmouth; Junyu Dong, Ocean University of China; Muwei Jian, Shandong University of Finance and Economics; Honghai Liu, University of Portsmouth

Deep Neural Networks

Session Chair: Sanghoon Lee, Yonsei University

MQ-PF.1 BEE POSE ESTIMATION FROM SINGLE IMAGES WITH CONVOLUTIONAL NEURAL NETWORK
Le Duan, Minmin Shen, University of Konstanz; Wenjing Gao, Song Cui, Institute of High Performance Computing; Oliver Deussen, University of Konstanz

MQ-PF.2 SEMI-SUPERVISED DOMAIN ADAPTATION VIA CONVOLUTIONAL NEURAL NETWORK
Pengcheng Liu, Cheng Cheng, Youji Feng, Xiaohu Shao, Xiangdong Zhou, Chongqing Institute of Green and Intelligent Technology, Chinese Academy of Sciences

MQ-PF.3 DIVERSITY ENCOURAGING ENSEMBLE OF CONVOLUTIONAL NETWORKS FOR HIGH PERFORMANCE ACTION RECOGNITION
Hao Yang, Chunfeng Yuan, Junliang Xing, Weiming Hu, CAS Center for Excellence in Brain Science and Intelligence Technology National Laboratory of Pattern Recognition, Institute of Automation, Chinese Academy of Sciences

MQ-PF.4 CONTRASTIVE-CENTER LOSS FOR DEEP NEURAL NETWORKS
Ce Qi, Fei Su, Beijing University of Posts and Telecommunications

MQ-PF.5 THE WITS INTELLIGENT TEACHING SYSTEM: DETECTING STUDENT ENGAGEMENT DURING LECTURES USING CONVOLUTIONAL NEURAL NETWORKS
Richard Klein, Turgay Celik, University of the Witwatersrand

MQ-PF.6 REGION-AWARE SCATTERING CONVOLUTION NETWORKS FOR FACIAL BEAUTY PREDICTION
Lingyu Liang, Duorui Xie, Lianwen Jin, Jie Xu, Mengru Li, Luojun Lin, South China University of Technology

MQ-PF.7 A CNN-LSTM FRAMEWORK FOR AUTHORSHIP CLASSIFICATION OF PAINTINGS
Kevin Alfianto Jangtjik, Trang-Thi Ho, National Taiwan University of Science and Technology; Mei-Chen Yeh, National Taiwan Normal University; Kai-Lung Hua, National Taiwan University of Science and Technology

MQ-PF.8 HUMAN ACTION RECOGNITION BY FUSING DEEP FEATURES WITH GLOBALITY LOCALITY PRESERVING CANONICAL CORRELATION ANALYSIS
Nour El Din Elmadany, Yifeng He, Ling Guan, Ryerson University

MQ-PF.9 FAST AND ACCURATE IMAGE RECOGNITION USING DEEPLY-FUSED BRANCHY NETWORKS
Mou-Yue Huang, National Chiao Tung University; Ching-Hao Lai, Industrial Technology Research Institute; Sin-Horng Chen, National Chiao Tung University

MQ-PF.10 RESIDUAL NETWORKS OF RESIDUAL NETWORKS: MULTILEVEL RESIDUAL NETWORKS
Ke Zhang, North China Electric Power University; Miao Sun, Tony X. Han, Xingfang Yuan, University of Missouri; Liru Guo, Tao Liu, North China Electric Power University

Image and Video Analysis and Retrieval

Session Chair: Stefan Winkler, Advanced Digital Sciences Center, Singapore

MQ-PG.1 MOTION FEATURE AUGMENTED RECURRENT NEURAL NETWORK FOR SKELETON-BASED DYNAMIC HAND GESTURE RECOGNITION
Xinghao Chen, Hengkai Guo, Guijin Wang, Li Zhang, Tsinghua University

MQ-PG.2 A POOL OF DEEP MODELS FOR EVENT RECOGNITION
Kashif Ahmad, Mohamed Lamine Mekhalfi, Nicola Conci, Giulia Boato, Farid Melgani, Francesco G. B. De Natale, University of Trento

MQ-PG.3 IMAGE RETRIEVAL BY SUBSPACE-PROJECTED COLOR AND TEXTURE FEATURES
Weidi Liu, Wei Li, Shandong University; Yan Huang, Shenzhen Realis Multimedia Technology Co., Ltd; Jingliang Peng, Shandong University

MQ-PG.4 PART-BASED FINE-GRAINED BIRD IMAGE RETRIEVAL RESPECTING SPECIES CORRELATION
Cheng Pang, Harbin Institute of Technology; Hongdong Li, Anoop Cherian, Australian National University; Hongxun Yao, Harbin Institute of Technology

MQ-PG.5 LABEL CONSISTENT MATRIX FACTORIZATION BASED HASHING FOR CROSS-MODAL RETRIEVAL
Devraj Mandal, Soma Biswas, Indian Institute of Science, Bangalore

MQ-PG.6 COUPLED CASCADE REGRESSION FOR SIMULTANEOUS FACIAL LANDMARK DETECTION AND HEAD POSE ESTIMATION
Chao Gou, Chinese Academy of Sciences; Yue Wu, Rensselaer Polytechnic Institute; Fei-Yue Wang, Chinese Academy of Sciences; Qiang Ji, Rensselaer Polytechnic Institute

MQ-PG.7 EXPLORING THE INFLUENCE OF FEATURE REPRESENTATION FOR DICTIONARY SELECTION BASED VIDEO SUMMARIZATION
Mingyang Ma, Shaohui Mei, Jingyu Ji, Shuai Wan, Northwestern Polytechnical University; Zhiyong Wang, Dagan Feng, The University of Sydney

MQ-PG.8 BINARY HASHING USING SIAMESE NEURAL NETWORKS
Abin Jose, Shen Yan, Iris Heisterklaus, Rheinisch-Westfälische Technische Hochschule Aachen

MQ-PG.9 MULTIMODAL STEREOSCOPIC MOVIE SUMMARIZATION CONFORMING TO NARRATIVE CHARACTERISTICS
Ioannis Mademlis, Anastasios Tefas, Nikos Nikolaidis, Ioannis Pitas, Aristotle University of Thessaloniki

MQ-PG.10 PROBABILISTIC APPROACH TO PEOPLE-CENTRIC PHOTO SELECTION AND SEQUENCING
Vassilios Vonikakis, Advanced Digital Sciences Center; Ramanathan Subramanian, IIIT; Jonas Arnfred, Stefan Winkler, Advanced Digital Sciences Center

Stereoscopic, Multiview, and 3D Processing III

Session Chair: Yebin Liu, Tsinghua University

TA-L1.1 10:30 **VISUAL COMFORT ASSESSMENT OF STEREOSCOPIC IMAGES USING DEEP VISUAL AND DISPARITY FEATURES BASED ON HUMAN ATTENTION**
Hyunwook Jeong, Hak Gu Kim, Yong Man Ro, Korea Advanced Institute of Science and Technology

TA-L1.2 10:50 **ACCURATE DENSE STEREO MATCHING FOR ROAD SCENES**
Oussama Zeglazi, Mohammed Rziza, Faculty of Sciences; Aouatif Amine, National School of Applied Sciences, Ibn Tofail University; Cédric Demonceaux, University of Burgundy

TA-L1.3 11:10 **HIGH DYNAMIC RANGE IMAGING USING CAMERA ARRAYS**
Kalpana Seshadrinathan, Oscar Nestares, Intel Corporation

TA-L1.4 11:30 **AUTOMATIC 2D-TO-3D CONVERSION USING MULTI-SCALE DEEP NEURAL NETWORK**
Jiyoung Lee, Hyungjoo Jung, Youngjung Kim, Kwanghoon Sohn, Yonsei University

TA-L1.5 11:50 **PROGRESSIVE GRAPH-SIGNAL SAMPLING AND ENCODING FOR STATIC 3D GEOMETRY REPRESENTATION**
Mingyuan Zhao, Tsinghua University; Gene Cheung, National Institute of Informatics; Dinei Florencio, Microsoft Research; Xiangyang Ji, Tsinghua University

TA-L1.6 12:10 **IMPROVING 3D RECONSTRUCTION TRACKS USING DENOISED EUCLIDEAN DISTANCE MATRICES**
Simone Milani, University of Padova

Visual Quality Models

Session Chair: Yuming Fang, Jiangxi University of Finance and Economics

TA-L2.1 10:30 **USING MULTISCALE ANALYSIS FOR BLIND QUALITY ASSESSMENT OF DIBR-SYNTHESIZED IMAGES**
Ke Gu, Junfei Qiao, Beijing University of Technology; Patrick Le Callet, University de Nantes; Zhifang Xia, State Information Center of China; Weisi Lin, Nanyang Technological University

TA-L2.2 10:50 **STUDY OF SUBJECTIVE AND OBJECTIVE QUALITY ASSESSMENT FOR SCREEN CONTENT IMAGES**
Xu Wang, Lei Cao, Yingying Zhu, Shenzhen University; Yun Zhang, Chinese Academy of Sciences; Jianmin Jiang, Shenzhen University; Sam Kwong, City University of Hong Kong

TA-L2.3 11:10 **A CONVOLUTIONAL NEURAL NETWORK FRAMEWORK FOR BLIND MESH VISUAL QUALITY ASSESSMENT**
Ilyass Abouelaziz, Mohammed El Hassouni, LRIT, Associated Unit to CNRST (URAC No 29)- Faculty of Sciences, Mohammed V University in Rabat; Hocine Cherifi, LE2I UMR 6306 CNRS, University of Burgundy

TA-L2.4 11:30 **FULL-REFERENCE STEREOSCOPIC IMAGE QUALITY ASSESSMENT ACCOUNTING FOR BINOCULAR COMBINATION AND DISPARITY INFORMATION**
Yu Fan, Mohamed-Chaker Larabi, University of Poitiers; Faouzi Alaya Cheikh, NTNU; Christine Fernandez, University of Poitiers

TA-L2.5 11:50 **BLIND HIGH DYNAMIC RANGE IMAGE QUALITY ASSESSMENT USING DEEP LEARNING**
Sen Jia, Yang Zhang, Dimitris Agrafiotis, David Bull, University of Bristol

TA-L2.6 12:10 **BLIND IMAGE QUALITY ASSESSMENT IN THE COMPLEX FREQUENCY DOMAIN**
Kais Rouis, University of Tunis El Manar; Mohamed-Chaker Larabi, University of Poitiers; Jamel Belhadj Tahar, University of Carthage

Motion Estimation and Analysis II

Session Chair: Guangyu Gao, Beijing Institute of Technology

TA-L3.1 10:30 **DO WE REALLY NEED MORE TRAINING DATA FOR OBJECT LOCALIZATION**
Hongyang Li, The Chinese University of Hong Kong; Yu Liu, SenseTime Group Ltd.; Xin Zhang, Zhecheng An, Jingjing Wang, Tsinghua University; Yibo Chen, The Chinese University of Hong Kong; Jihong Tong, Eastern Liaoning University

TA-L3.2 10:50 **CARDIAC MOTION ESTIMATION IN ULTRASOUND IMAGES USING SPATIAL AND SPARSE REGULARIZATIONS**
Nora Ouzir, Adrian Basarab, Jean-Yves Tourneret, University of Toulouse

TA-L3.3 11:10 **INSTANCE FLOW BASED ONLINE MULTIPLE OBJECT TRACKING**
Sebastian Bullinger, Christoph Bodensteiner, Michael Arens, Fraunhofer Institute of Optronics, System Technologies and Image Exploitation

TA-L3.4 11:30 **DENSENET FOR DENSE FLOW**
Yi Zhu, Shawn Newsam, University of California, Merced

TA-L3.5 11:50 **DEEP FEATURE MATCHING FOR DENSE CORRESPONDENCE**
Yang Liu, Jinshan Pan, Zhixun Su, Dalian University of Technology

TA-L3.6 12:10 **A NEW MOTION ESTIMATION METHOD FOR MOTION-COMPENSATED FRAME INTERPOLATION USING A CONVOLUTIONAL NEURAL NETWORK**
Giyong Choi, PyeongGang Heo, Se Ri Oh, HyunWook Park, Korea Advanced Institute of Science and Technology

Face and Gesture Recognition and Tracking

Session Chair: Jiwen Lu, Tsinghua University

TA-L4.1 10:30 **IMAGE QUALITY ASSESSMENT TO ENHANCE INFRARED FACE RECOGNITION**
Camilo Gerardo Rodriguez Pulecio, Hernan Dario Benitez-Restrepo, Pontificia Universidad Javeriana Cali; Alan Conrad Bovik, The University of Texas at Austin

TA-L4.2 10:50 **NOVEL REPRESENTATION FOR DRIVER EMOTION RECOGNITION IN MOTOR VEHICLE VIDEOS**
Rajkumar Theagarajan, Bir Bhanu, University of California, Riverside; Albert Cruz, California State University, Bakersfield; Belinda Le, Asongu Tambo, University of California, Riverside

TA-L4.3 11:10 **WEAKLY SUPERVISED MULTISCALE-INCEPTION LEARNING FOR WEB-SCALE FACE RECOGNITION**
Cheng Cheng, Chongqing Institute of Green and Intelligent Technology; Junliang Xing, Institute of Automation, Chinese Academy of Sciences; Youji Feng, Pengcheng Liu, Xiaohu Shao, Chongqing Institute of Green and Intelligent Technology; Kai Li, Institute of Automation, Chinese Academy of Sciences; Xiangdong Zhou, Chongqing Institute of Green and Intelligent Technology

TA-L4.4 11:30 **ALIGNED DISCRIMINATIVE POSE ROBUST DESCRIPTORS FOR FACE AND OBJECT RECOGNITION**
Soubhik Sanyal, Devraj Mandal, Soma Biswas, Indian Institute of Science, Bangalore

TA-L4.5 11:50 **SSPP-DAN: DEEP DOMAIN ADAPTATION NETWORK FOR FACE RECOGNITION WITH SINGLE SAMPLE PER PERSON**
Sungeun Hong, Woobin Im, Jongbin Ryu, Hyun S. Yang, Korea Advanced Institute of Science and Technology

TA-L4.6 12:10 **LAW: LOCALITY-AWARE WHITENING**
Felix Juefei-Xu, Marios Savvides, Carnegie Mellon University

Image Classification I

Session Chair: David Crandall, Indiana University

TA-L5.1 10:30 **DEEP DICTIONARY LEARNING FOR FINE-GRAINED IMAGE CLASSIFICATION**
M. Srinivas, Yen-Yu Lin, Hong-Yuan Mark Liao, Academia Sinica

TA-L5.2 10:50 **HYPER-VOXEL BASED DEEP LEARNING FOR HYPERSPECTRAL IMAGE CLASSIFICATION**
Atif Mughees, Linmi Tao, Tsinghua University

TA-L5.3 11:10 **MAKING THE TORCH LIGHTER: A REINFORCED ACTIVE SAMPLING FRAMEWORK FOR IMAGE CLASSIFICATION**
Peng Liu, Zhipeng Ye, Xianglong Tang, Wei Zhao, Harbin Institute of Technology

TA-L5.4 11:30 **INCREMENTAL ZERO-SHOT LEARNING BASED ON ATTRIBUTES FOR IMAGE CLASSIFICATION**
Nan Xue, Yi Wang, Xin Fan, Maomao Min, Dalian University of Technology

TA-L5.5 11:50 **CGAN-PLANKTON: TOWARDS LARGE-SCALE IMBALANCED CLASS GENERATION AND FINE-GRAINED CLASSIFICATION**
Chao Wang, Zhibin Yu, Haiyong Zheng, Nan Wang, Bing Zheng, Ocean University of China

TA-L5.6 12:10 **LEAF CLASSIFICATION USING MARGINALIZED SHAPE CONTEXT AND SHAPE+TEXTURE DUAL-PATH DEEP CONVOLUTIONAL NEURAL NETWORK**
Meet Shah, Sougata Singha, Suyash P. Awate, Indian Institute of Technology (IIT) Bombay

Image and Video Labeling and Retrieval I

Session Chair: Rongrong Ji, Xiamen University

TA-L6.1 10:30 **EFFICIENT SIMILARITY LEARNING FOR ASYMMETRIC HASHING**
Cheng Da, Yang Yang, Kun Ding, Chunlei Huo, Shiming Xiang, Chunhong Pan, Institute of Automation, Chinese Academy of Sciences

TA-L6.2 10:50 **IMPROVING HUMAN ACTION RECOGNITION BY TEMPORAL ATTENTION**
Zhikang Liu, University of Science and Technology of China; Ye Tian, Stanford University; Zilei Wang, University of Science and Technology of China

TA-L6.3 11:10 **IOD-CNN: INTEGRATING OBJECT DETECTION NETWORKS FOR EVENT RECOGNITION**
Sungmin Eum, University of Maryland, College Park; Hyungtae Lee, Booz Allen Hamilton Inc.; Heesung Kwon, U.S. Army Research Laboratory; David Doermann, University of Maryland, College Park

TA-L6.4 11:30 **RECOGNIZING OFFENSIVE TACTICS IN BROADCAST BASKETBALL VIDEOS VIA KEY PLAYER DETECTION**
Tsung-Yu Tsai, National Taiwan University; Yen-Yu Lin, Hong-Yuan Mark Liao, Academia Sinica; Shyh-Kang Jeng, National Taiwan University

TA-L6.5 11:50 **ENERGY BASED FAST EVENT RETRIEVAL IN VIDEO WITH TEMPORAL MATCH KERNEL**
Junfu Pu, University of Science and Technology of China; Yusuke Matsui, National Institute of Informatics; Fan Yang, The University of Tokyo, National Institute of Informatics; Shin'ichi Satoh, National Institute of Informatics, The University of Tokyo

TA-L6.6 12:10 **QUASI RATE DISTORTION OPTIMIZATION FOR BINARY HASHING**
Yiding Liu, Wengang Zhou, Houqiang Li, University of Science and Technology of China

Object Detection IV

Session Chair: Bilge Gunsel, Istanbul Technical University

TA-L7.1 10:30 **TWO-STAGE ABSORBING MARKOV CHAIN FOR SALIENT OBJECT DETECTION**
Qing Zhang, Desi Luo, Wenju Li, Yanjiao Shi, Shanghai Institute of Technology; Jiajun Lin, East China University of Science and Technology

TA-L7.2 10:50 **ROTATED REGION BASED CNN FOR SHIP DETECTION**
Zikun Liu, Jingao Hu, Lubin Weng, Yiping Yang, Institute of Automation, Chinese Academy of Sciences

TA-L7.3 11:10 **MULTI-GLIMPSE LSTM WITH COLOR-DEPTH FEATURE FUSION FOR HUMAN DETECTION**
Hengduo Li, Fudan University; Jun Liu, Nanyang Technological University; Guyue Zhang, Yuan Gao, Fudan University; Yirui Wu, Hohai University

TA-L7.4 11:30 **FLEXIBLE 3D NEIGHBORHOOD CASCADE DEFORMABLE PART MODELS FOR OBJECT DETECTION**
Hung Vu, Khoa Pho, Bac Le, VNU HCMC, University of Science, Ho Chi Minh city

TA-L7.5 11:50 **EFFICIENT ESTIMATION OF TARGET DETECTION QUALITY**
Juan Carlos SanMiguel Avedillo, University Autonoma of Madrid; Andrea Cavallaro, Queen Mary University of London

TA-L7.6 12:10 **ENHANCED OBJECT DETECTION VIA FUSION WITH PRIOR BELIEFS FROM IMAGE CLASSIFICATION**
Yilun Cao, University of Southern California; Hyungtae Lee, Booz Allen Hamilton Inc.; U.S. Army Research Laboratory; Heesung Kwon, U.S. Army Research Laboratory

Recent Advances in Video Compression Technology in Open Codecs

Session Chair: Jingning Han, Google

TA-L8.1 10:30 **GPGPU IMPLEMENTATION OF VP9 IN-LOOP DEBLOCKING FILTER AND IMPROVEMENTS FOR AV1 CODEC**
Zhijun Lei, Intel Corporation; Srinath Reddy, Victor Cherepanov, Microsoft Corporation; Zhipin Deng, Intel Corporation

TA-L8.2 10:50 **INTEGRATING THOR TOOLS INTO THE EMERGING AV1 CODEC**
Steinar Midtskogen, Arild Fuldseth, Gisle Bjøntegaard, Thomas Davies, Cisco Systems

TA-L8.3 11:10 **ADAPTIVE INTERPOLATION FILTER SCHEME IN AV1**
Ching-Han Chiang, Jingning Han, Stan Vitvitskyy, Debargha Mukherjee, Yaowu Xu, Google Inc.

TA-L8.4 11:30 **VARIABLE BLOCK-SIZE OVERLAPPED BLOCK MOTION COMPENSATION IN THE NEXT GENERATION OPEN-SOURCE VIDEO CODEC**
Yue Chen, Debargha Mukherjee, Google Inc.

TA-L8.5 11:50 **ADAPTIVE INTERPOLATED MOTION COMPENSATED PREDICTION**
Wei-Ting Lin, Tejaswi Nanjundaswamy, Kenneth Rose, University of California, Santa Barbara

TA-L8.6 12:10 **HARDWARE-FRIENDLY INTER PREDICTION TECHNIQUES FOR AV1 VIDEO CODING**
Zhipin Deng, Iole Moccagatta, Intel Corporation

Image Super-resolution

Session Chair: Xiaolin Wu, McMaster University

TA-L9.1 10:30 **IMAGE SUPER-RESOLUTION VIA DEEP DILATED CONVOLUTIONAL NETWORKS**
Zehao Huang, Lingfeng Wang, Gaofeng Meng, Chunhong Pan, Institute of Automation, Chinese Academy of Sciences

TA-L9.2 10:50 **LARGE RECEPTIVE FIELD CONVOLUTIONAL NEURAL NETWORK FOR IMAGE SUPER-RESOLUTION**
Qiang Wang, Huijie Fan, Yang Cong, Yandong Tang, Shenyang Institute of Automation, Chinese Academy of Sciences

TA-L9.3 11:10 **HYPERSPECTRAL IMAGE SUPER-RESOLUTION BASED ON NON-FACTORIZATION SPARSE REPRESENTATION AND DICTIONARY LEARNING**
Xiaolin Han, Tsinghua University; Jing Yu, Beijing University of Technology; Weidong Sun, Tsinghua University

TA-L9.4 11:30 **DEEP NETWORK FOR IMAGE SUPER-RESOLUTION WITH A DICTIONARY LEARNING LAYER**
Yang Liu, University of Cambridge; Qingchao Chen, University College London; Ian Wassell, University of Cambridge

TA-L9.5 11:50 **JOINT NONLOCAL SPARSE REPRESENTATION FOR DEPTH MAP SUPER-RESOLUTION**
Yeda Zhang, Yuan Zhou, Aihua Wang, Qiong Wu, Chunping Hou, Tianjin University

TA-L9.6 12:10 **SINGLE IMAGE SUPER-RESOLUTION WITH DILATED CONVOLUTION BASED MULTI-SCALE INFORMATION LEARNING INCEPTION MODULE**
Wuzhen Shi, Feng Jiang, Debin Zhao, Harbin Institute of Technology

Synthesis, Rendering, and Visualization

Session Chair: Pablo Musé, Universidad de la Republica

TA-PA.1 REAL-TIME WALKTHROUGH OF OUTDOOR SCENES USING TRI-VIEW MORPHING
Qianqian Li, Yu Zhou, Yao Yu, Sidan Du, Ziqiang Wang, Nanjing University

TA-PA.2 SOFT SEGMENTATION-GUIDED BIPARTITE GRAPH IMAGE STYLIZATION
Saboya Yang, Jiaying Liu, Wenhan Yang, Shuai Yang, Peking University; Chunpeng Li, Institute of Computing Technology, Chinese Academy of Sciences

TA-PA.3 VIEW-DEPENDENT VIRTUAL REALITY CONTENT FROM RGB-D IMAGES
Chih-Fan Chen, Mark Bolas, Evan Suma Rosenberg, University of Southern California

TA-PA.4 KEYWORD-BASED IMAGE COLOR RE-RENDERING WITH SEMANTIC SEGMENTATION
Fayez Lahoud, Bin Jin, École polytechnique fédérale de Lausanne; Maria V. Ortiz Segovia, Océ; Sabine Süsstrunk, École polytechnique fédérale de Lausanne

TA-PA.5 PHOTOREALISTIC ADAPTATION AND INTERPOLATION OF FACIAL EXPRESSIONS USING HMMS AND AAMS FOR AUDIO-VISUAL SPEECH SYNTHESIS
Panagiotis Paraskevas Filntisis, Athanasios Katsamanis, Petros Maragos, National Technical University of Athens

TA-PA.6 ATTRIBUTE-CONTROLLED FACE PHOTO SYNTHESIS FROM SIMPLE LINE DRAWING
Qi Guo, Ce Zhu, Zhiqiang Xia, Zhengtao Wang, Yipeng Liu, University of Electronic Science and Technology of China

Image Denoising I

Session Chair: Yap-Peng TAN, Nanyang Technological University

TA-PB.1 JOINT DEMOSAICING AND DENOISING OF NOISY BAYER IMAGES WITH ADMM
Hanlin Tan, Xiangrong Zeng, Shiming Lai, Yu Liu, Maojun Zhang, National University of Defense Technology

TA-PB.2 IMAGE DENOISING USING GROUP SPARSITY RESIDUAL AND EXTERNAL NONLOCAL SELF-SIMILARITY PRIOR
Zhiyuan Zha, Xinggan Zhang, Qiong Wang, Yechao Bai, Lan Tang, Nanjing University

TA-PB.3 3-D MEAN-SEPARATION-TYPE SHORT-TIME DFT WITH ITS APPLICATION TO MOVING-IMAGE DENOISING
Takashi Komatsu, Ken Tyon, Takahiro Saito, Kanagawa University

TA-PB.4 MESHFLOW VIDEO DENOISING
Zhihang Ren, Jiajia Li, Shuaicheng Liu, Bing Zeng, University of Electronic Science and Technology of China

TA-PB.5 UNDERSTANDING NEURAL-NETWORK DENOISERS THROUGH AN ACTIVATION FUNCTION PERSPECTIVE
Yuxiang Li, Ecole polytechnique; Bo Zhang, Raoul Florent, Philips Research

TA-PB.6 IMAGE NOISE ESTIMATION AND REMOVAL CONSIDERING THE BAYER PATTERN OF NOISE VARIANCE
Huanjing Yue, Jianjun Liu, Jingyu Yang, Tianjin University; Truong Q. Nguyen, University of California, San Diego; Chunping Hou, Tianjin University

TA-PB.7 TARGETED VIDEO DENOISING FOR DECOMPRESSED VIDEOS
Shibin Parameswaran, University of California, San Diego; Enming Luo, Facebook; Truong Q. Nguyen, University of California, San Diego

TA-PB.8 DUAL DOMAIN VIDEO DENOISING WITH OPTICAL FLOW ESTIMATION
Antoni Buades, Jose-Luis Lisani, Universitat Illes Balears

TA-PB.9 ADAPTIVE THRESHOLDING HOSVD ALGORITHM WITH ITERATIVE REGULARIZATION FOR IMAGE DENOISING
Rodion Movchan, Zhengwei Shen, University of Science and Technology Beijing

TA-PB.10 WAVELET-BASED TOTAL VARIATION AND NONLOCAL SIMILARITY MODEL FOR IMAGE DENOISING
Yan Shen, Qing Liu, Shuqin Lou, Yali Hou, Beijing Jiaotong University

Video coding IV

Session Chair: Fabrice Labeau, McGill Univeristy

TA-PC.1 COMPRESSION EFFICIENCY OF THE EMERGING VIDEO CODING TOOLS
Naty Sidaty, Wassim Hamidouche, IETR INSA Rennes; Pierrick Philippe, Orange & bcom; Olivier Déforges, IETR INSA Rennes

TA-PC.2 CODING SENSITIVE BASED APPROXIMATION ALGORITHM FOR POWER EFFICIENT VBS-DCT VLSI DESIGN IN HEVC HARDWIRED INTRA ENCODER
Liangliang Chang, Zhenyu Liu, Xiangyang Ji, Dongsheng Wang, Tsinghua University

TA-PC.3 LIFTING-BASED ILLUMINATION ADAPTIVE TRANSFORM (LIAT) USING MESH-BASED ILLUMINATION MODELLING
Maryam Haghighat, Reji Mathew, Aous Naman, David Taubman, University of New South Wales

TA-PC.4 LOW COMPLEXITY VIDEO CODING BASED ON SPATIAL RESOLUTION ADAPTATION
Mariana Afonso, Fan Zhang, Angeliki Katsenou, Dimitris Agrafiotis, David Bull, University of Bristol

TA-PC.5 ANALYSIS/SYNTHESIS CODING OF DYNAMIC TEXTURES BASED ON MOTION DISTRIBUTION STATISTICS
Olena Chubach, Patrick Garus, Mathias Wien, Jens-Rainer Ohm, Rheinisch-Westfälische Technische Hochschule Aachen

TA-PC.6 LAGRANGIAN METHOD BASED RATE-DISTORTION OPTIMIZATION REVISITED FOR DEPENDENT VIDEO CODING
Xiangwen Wang, Shanghai University of Electric Power; Li Song, Shanghai Jiao Tong University; Zhengyi Luo, Shanghai University of Electric Power; Rong Xie, Shanghai Jiao Tong University

TA-PC.7 VISUAL QUERY COMPRESSION WITH LOCALITY PRESERVING PROJECTION ON GRASSMANN MANIFOLD
Zhaobin Zhang, Li Li, Zhu Li, University of Missouri-Kansas City; Houqiang Li, University of Science and Technology of China

Computational Imaging II

Session Chair: Brendt Wohlberg, Los Alamos National Laboratory

TA-PD.1 PCA-CODED APERTURE FOR LIGHT FIELD PHOTOGRAPHY
Yusuke Yagi, Keita Takahashi, Toshiaki Fujii, Nagoya University; Toshiki Sonoda, Kyusyu University; Hajime Nagahara, Osaka University

TA-PD.2 HIGH ANGULAR RESOLUTION LIGHT FIELD RECONSTRUCTION WITH CODED-APERTURE MASK
Wanxin Qu, Guoqing Zhou, Hao Zhu, NWPU; Zhaolin Xiao, XAUT; Qing Wang, NWPU; Vidal Rene, JHU

TA-PD.3 GENERATING ADAPTIVE AND ROBUST FILTER SETS USING AN UNSUPERVISED LEARNING FRAMEWORK
Mohit Prabhushankar, Dogancan Temel, Ghassan AlRegib, Georgia Institute of Technology

TA-PD.4 TENSOR NON-LOCAL LOW-RANK REGULARIZATION FOR RECOVERING COMPRESSED HYPERSPECTRAL IMAGES
Yongqiang Zhao, Jize Xue, Jinglei Hao, Northwestern Polytechnical University

TA-PD.5 FILLING THE GAPS: REDUCING THE COMPLEXITY OF NETWORKS FOR MULTI-ATTRIBUTE IMAGE AESTHETIC PREDICTION
Magzhan Kairanbay, John See, Lai-Kuan Wong, Yong-Lian Hii, Multimedia University

TA-PD.6 LEARNING THE WEIGHT MATRIX FOR SPARSITY AVERAGING IN COMPRESSIVE IMAGING
Dimitris Perdios, Adrien Besson, Philippe Rossinelli, Jean-Philippe Thiran, Signal Processing Laboratory (LTS5), Ecole Polytechnique Fédérale de Lausanne (EPFL)

TA-PD.7 COMPRESSED SENSING MRI USING TOTAL VARIATION REGULARIZATION WITH K-SPACE DECOMPOSITION
Liyan Sun, Yue Huang, Congbo Cai, Xinghao Ding, Xiamen University

TA-PD.8 UNSUPERVISED DOMAIN ADAPTATION WITH JOINT SUPERVISED SPARSE CODING AND DISCRIMINATIVE REGULARIZATION TERM
Lin Zhu, Xiang Zhang, Wenju Zhang, Xuhui Huang, Naiyang Guan, Zhigang Luo, National University of Defense Technology

Semantic and Deep Learning Segmentation

Session Chair: Zhi Liu, Shanghai University

TA-PE.1 PROSTATE DETECTION AND SEGMENTATION BASED ON CONVOLUTIONAL NEURAL NETWORK AND TOPOLOGICAL DERIVATIVE
Choongsang Cho, Young Han Lee, Korea Electronics Technology Institute; Sangkeun Lee, Chung-Ang University

TA-PE.2 NOISE-TOLERANT DEEP LEARNING FOR HISTOPATHOLOGICAL IMAGE SEGMENTATION
Weizhi Li, Xiaoning Qian, Jim Ji, Texas A&M University

TA-PE.3 SEMANTIC IMAGE SEGMENTATION USING THE ICM ALGORITHM
Lazhar Khelifi, Max Mignotte, University of Montreal

TA-PE.4 DENSELY CONNECTED DECONVOLUTIONAL NETWORK FOR SEMANTIC SEGMENTATION
Jun Fu, Jing Liu, Yuhang Wang, Hanqing Lu, National Laboratory of Pattern Recognition, Institute of Automation, Chinese Academy of Sciences

TA-PE.5 CONVOLUTIONAL GATED RECURRENT NETWORKS FOR VIDEO SEGMENTATION
Mennatullah Siam, Sepehr Valipour, Martin Jagersand, Nilanjan Ray, University of Alberta

TA-PE.6 OBJECT SEGMENTATION IN THE DEEP NEURAL NETWORK FEATURE DOMAIN FROM HIGHLY CLUTTERED NATURAL SCENES
Hayder Yousif, Zhihai He, University of Missouri-Columbia; Roland Kays, North Carolina State University

TA-PE.7 SEMANTIC SEGMENTATION WITH MULTI-PATH REFINEMENT AND PYRAMID POOLING DILATED-RESNET
Zhipeng Cui, Qiao Zhang, Shijie Geng, Xiaoguang Niu, Jie Yang, Yu Qiao, Shanghai Jiao Tong University

TA-PE.8 SEMANTIC BOUNDARY REFINEMENT BY JOINT INFERENCE FROM EDGES AND REGIONS
Chao Yang, University of Southern California

TA-PE.9 A JOINT MULTI-SCALE CONVOLUTIONAL NETWORK FOR FULLY AUTOMATIC SEGMENTATION OF THE LEFT VENTRICLE
Qianqian Tong, Zhiyong Yuan, Wuhan University; Xiangyun Liao, Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences; Mianlun Zheng, Weixu Zhu, Guian Zhang, Munan Ning, Wuhan University

TA-PE.10 MULTISPECTRAL HUMAN CO-SEGMENTATION VIA JOINT CONVOLUTIONAL NEURAL NETWORKS
Sungil Choi, Seungryong Kim, Kihong Park, Kwanghoon Sohn, Yonsei University

Color and Multispectral Imaging

Session Chair: Xiao-Ping Zhang, Ryerson University

TA-PF.1 SUPERVISED CLASSIFICATION OF HYPERSPECTRAL IMAGES USING LOCAL-RECEPTIVE-FIELDS-BASED KERNEL EXTREME LEARNING MACHINE
Yu Shen, Nanjing University of Science and Technology; Jianyu Chen, Second Institute of Oceanography, State Oceanic Administration; Liang Xiao, Nanjing University of Science and Technology

TA-PF.2 TUNABLE COLOR CORRECTION BETWEEN LINEAR AND POLYNOMIAL MODELS FOR NOISY IMAGES
Ryo Yamakabe, Yusuke Monno, Masayuki Tanaka, Masatoshi Okutomi, Tokyo Institute of Technology

TA-PF.3 ROBUST JOINT SPARSITY MODEL FOR HYPERSPECTRAL IMAGE CLASSIFICATION
Shaoguang Huang, Ghent University; Hongyan Zhang, Wuhan University; Wenzhi Liao, Aleksandra Pizurica, Ghent University

TA-PF.4 COLOUR NORMALIZATION OF FUNDUS IMAGES BASED ON GEOMETRIC TRANSFORMATIONS APPLIED TO THEIR CHROMATIC HISTOGRAM
Adrián Colomer, Valery Naranjo, Universitat Politècnica de València; Jesús Angulo, MINES Paristech

TA-PF.5 ROBUST LINEAR UNMIXING WITH ENHANCED SPARSITY
Alexandre Tiard, University of California, Los Angeles; Laurent Condat, Lucas Drumetz, Jocelyn Chanussot, University Grenoble Alpes, CNRS, GIPSA-lab, F-38000 Grenoble; Wotao Yin, University of California, Los Angeles; Xiaoxian Zhu, German Aerospace Center (DLR)

Stereoscopic, Multiview, and 3D Processing IV

Session Chair: Kun Li, Tianjin University

TP-L1.1 14:00 **A HAND POSE TRACKING BENCHMARK FROM STEREO MATCHING**
Jiawei Zhang, Jianbo Jiao, Mingliang Chen, City University of Hong Kong; Liangqiong Qu, Shenyang Institute of Automation, Chinese Academy of Sciences; Xiaobin Xu, City University of Hong Kong; Qingxiong Yang, University of Science and Technology of China

TP-L1.2 14:20 **GLOBAL MULTIVIEW REGISTRATION USING NON-CONVEX ADMM**
Sk Miraj Ahmed, Kunal Chaudhury, Indian Institute of Science

TP-L1.3 14:40 **DEEP STEREO CONFIDENCE PREDICTION FOR DEPTH ESTIMATION**
Sunok Kim, Yonsei University; Dongbo Min, Chungnam National University; Bumsub Ham, Seungryong Kim, Kwanghoon Sohn, Yonsei University

TP-L1.4 15:00 **A NOVEL KINECT V2 REGISTRATION METHOD FOR LARGE-DISPLACEMENT ENVIRONMENTS USING CAMERA AND SCENE CONSTRAINTS**
Yuan Gao, Sandro Esquivel, Reinhard Koch, Kiel University; Matthias Ziegler, Frederik Zilly, Joachim Keinert, Fraunhofer IIS

TP-L1.5 15:20 **ROBUST SURFACE RECONSTRUCTION FROM GRADIENTS VIA ADAPTIVE DICTIONARY REGULARIZATION**
Andrew Wagenmaker, Brian Moore, Raj Nadakuditi, University of Michigan

TP-L1.6 15:40 **CONVOLUTIONAL FEATURE PYRAMID FUSION VIA ATTENTION NETWORK**
Sangryul Jeon, Seungryong Kim, Kwanghoon Sohn, Yonsei University

High Dynamic Range Imaging

Session Chair: Giuseppe Valenzise, Universite Paris-Sud

TP-L2.1 14:00 **A NEW TONE-MAPPED IMAGE QUALITY ASSESSMENT APPROACH FOR HIGH DYNAMIC RANGE IMAGING SYSTEM**
Yang Song, Gangyi Jiang, Hao Jiang, Mei Yu, Feng Shao, Zongju Peng, Ningbo University

TP-L2.2 14:20 **HUMAN VISUAL SYSTEM INSPIRED SALIENCY GUIDED EDGE PRESERVING TONE-MAPPING FOR HIGH DYNAMIC RANGE IMAGING**
Nipu Barai, Ryerson University; Matthew Kyan, York University; Dimitrios Androutsos, Ryerson University

TP-L2.3 14:40 **LUMA-AWARE MULTI-MODEL RATE-CONTROL FOR HDR CONTENT IN HEVC**
Karina Perez-Daniel, Victor Sanchez, University of Warwick

TP-L2.4 15:00 **AN ADAPTIVE PERCEPTUAL QUANTIZATION METHOD FOR HDR VIDEO CODING**
Yi Liu, Naty Sidaty, Wassim Hamidouche, Olivier Déforges, INSA de Rennes; Giuseppe Valenzise, CentraleSupélec, Universite Paris-Sud; Emin Zerman, Télécom ParisTech, Université Paris-Saclay

TP-L2.5 15:20 **VR+HDR: A SYSTEM FOR VIEW-DEPENDENT RENDERING OF HDR VIDEO IN VIRTUAL REALITY**
Hossein Najaf-Zadeh, Madhukar Budagavi, Esmaeil Faramarzi, Samsung

Shape Analysis II

Session Chair: Bir Bhanu, University of California at Riverside

TP-L3.1 14:00 **SHAPE RECOGNITION BY BAG OF CONTOUR FRAGMENTS WITH A LEARNED POOLING FUNCTION**
Wei Shen, Wenjing Gao, Yuan Jiang, Dan Zeng, Zhijiang Zhang, Shanghai University

TP-L3.2 14:20 **SHAPE RETRIEVAL USING MULTISCALE ELLIPSE DESCRIPTOR**
Xiaohong Zhang, Jianwen Xiang, Shengwu Xiong, Wuhan University of Technology

TP-L3.3 14:40 **ACTION RECOGNITION WITH GRADIENT BOUNDARY CONVOLUTIONAL NETWORK**
Huafeng Chen, Jun Chen, Research Institute of Shenzhen, Wuhan University; Chen Chen, Center for Research in Computer Vision, University of Central Florida, Orlando, USA; Ruimin Hu, Research Institute of Shenzhen, Wuhan University

TP-L3.4 15:00 **FACIAL ANALYSIS IN THE WILD WITH LSTM NETWORKS**
Sarasi Kankanamge, Clinton Fookes, Sridha Sridharan, Queensland University of Technology

TP-L3.5 15:20 **A NEW DEEP-LEARNING APPROACH FOR EARLY DETECTION OF SHAPE VARIATIONS IN AUTISM USING STRUCTURAL MRI**
Marwa Ismail, Gregory Barnes, Matthew Nitzken, Andrew Switala, Ahmed Shalaby, Ehsan Hosseini-Asl, Manuel Casanova, Robert Keynton, University of Louisville; Ashraf Khalil, Abu Dhabi University; Ayman El-Baz, University of Louisville

TP-L3.6 15:40 **A LOCAL DESCRIPTOR FOR HIGH-SPEED AND HIGH-PERFORMANCE PICTOGRAM MATCHING**
Terumasa Aoki, Kurumi Kaminishi, Tohoku University

Facial Recognition

Session Chair: Xilin Chen, ICT, Chinese Academy of Sciences

TP-L5.1 14:00 **COMPACT LBP AND WLBP DESCRIPTOR WITH MAGNITUDE AND DIRECTION DIFFERENCE FOR FACE RECOGNITION**
Soo-Chang Pei, Mei-Shuo Chen, National Taiwan University; Yi Yu, National Institute of Informatics; Suhua Tang, The University of Electro-Communications; Chunlin Zhong, University of Science and Technology of China

TP-L5.2 14:20 **KINSHIP VERIFICATION BASED ON STATUS-AWARE PROJECTION LEARNING**
Haijun Liu, Jian Cheng, Feng Wang, University of Electronic Science and Technology of China

TP-L5.3 14:40 **HETEROGENEOUS FACE RECOGNITION VIA GRASSMANNIAN BASED NEAREST SUBSPACE SEARCH**
Yuan Tian, Cheng Yan, Xiao Bai, Beihang University; Jun Zhou, Griffith University

TP-L5.4 15:00 **FACE RECOGNITION USING MULTI-MODAL LOW-RANK DICTIONARY LEARNING**
Homa Foroughi, Moein Shakeri, Nilanjan Ray, Hong Zhang, University of Alberta

TP-L5.5 15:20 **REGULARIZING FACE VERIFICATION NETS FOR PAIN INTENSITY REGRESSION**
Feng Wang, Xiang Xiang, Chang Liu, Trac D. Tran, Austin Reiter, Gregory Hager, Harry Quon, Johns Hopkins University; Jian Cheng, University of Electronic Science and Technology of China; Alan Yuille, Johns Hopkins University

TP-L5.6 15:40 **DEEP EMBEDDING NETWORK FOR ROBUST AGE ESTIMATION**
Yating He, Min Huang, Qinghai Miao, Haiyun Guo, Jinqiao Wang, University of Chinese Academy of Sciences

Image and Video Retrieval

Session Chair: David Crandall, Indiana University

TP-L6.1 14:00 **PERSON RE-IDENTIFICATION WITH COARSE-TO-FINE VISUAL ATTENTION**
Zijie Zhuang, Haizhou Ai, Chong Shang, Tsinghua University; Lihu Xiao, Huawei Technologies

TP-L6.2 14:20 **STREET-TO-SHOP SHOE RETRIEVAL WITH MULTI-SCALE VIEWPOINT INVARIANT TRIPLET NETWORK**
Huijing Zhan, NTU EEE; Boxin Shi, Artificial Intelligence Research Center, National Institute of AIST; Alex Kot, NTU EEE

TP-L6.3 14:40 **SEMICCA: A NEW SEMI-SUPERVISED PROBABILISTIC CCA MODEL FOR KEYWORD SPOTTING**
Giorgos Sfikas, Basilis Gatos, NCSRD; Christophoros Nikou, UOI

TP-L6.4 15:00 **QUERY-BY-EXAMPLE WORD SPOTTING USING MULTISCALE FEATURES AND CLASSIFICATION IN THE SPACE OF REPRESENTATION DIFFERENCES**
Mohamed Mhiri, Mohamed Cheriet, Christian Desrosiers, École de technologie supérieure

TP-L6.5 15:20 **A MULTI-BLOCK N-ARY TRIE STRUCTURE FOR EXACT R-NEIGHBOUR SEARCH IN HAMMING SPACE**
Yicheng Huang, Ling-Yu Duan, Zhe Wang, Peking University; Jie Lin, Institute for Infocomm Research; Vijay Chandrasekhar, Institute for Infocomm Research & Nanyang Technological University; Tiejun Huang, Peking University

TP-L6.6 15:40 **GPU BASED FAST MPEG-CDVS ENCODER**
Wei Sun, Peking University; Xinfeng Zhang, Shiqi Wang, Nanyang Technological University; Jie Chen, Ling-Yu Duan, Peking University

Object Tracking III

Session Chair: A. Aydın Alatan, Middle East Technical University

TP-L7.1 14:00 **HYBRID STRUCTURE HYPERGRAPH FOR ONLINE DEFORMABLE OBJECT TRACKING**
Shengkun Li, University at Albany, State University of New York; Dawei Du, University of Chinese Academy of Sciences; Longyin Wen, GE Global Research; Ming-Ching Chang, University at Albany, State University of New York; Siwei Lyu, University at Albany, State University of New York, and Tianjin Normal University

TP-L7.2 14:20 **ROBUST OBJECT TRACKING VIA MULTI-TASK BASED COLLABORATIVE MODEL**
Yong Wang, School of Electrical and Computer Engineering, University of Ottawa; Xinbin Luo, School of Electronic information and Electrical Engineering, Shanghai Jiao Tong University; Shiqiang Hu, School of Aeronautics and Astronautics, Shanghai Jiao Tong University

TP-L7.3 14:40 **VISUAL TRACKING VIA STRUCTURAL PATCH-BASED DICTIONARY PAIR LEARNING**
Tao Zhou, Fanghui Liu, Institute of Image Processing and Pattern Recognition, Shanghai Jiao Tong University; Harish Bhaskar, Khalifa University of Science Technology and Research; Jie Yang, Institute of Image Processing and Pattern Recognition, Shanghai Jiao Tong University; Lei Chen, School of Computer Science, Nanjing University of Posts and Telecommunications; Ping Cai, Shanghai Jiao Tong University

TP-L7.4 15:00 **PERSISTENT MULTIPLE HYPOTHESIS TRACKING FOR WIDE AREA MOTION IMAGERY**
Raphael Spraul, Christine Hartung, Tobias Schuchert, Fraunhofer Institute of Optronics, System Technologies and Image Exploitation

TP-L7.5 15:20 **DEEP LEARNING ARCHITECTURE FOR PEDESTRIAN 3-D LOCALIZATION AND TRACKING USING MULTIPLE CAMERAS**
Kikyung Kim, Byeongho Heo, Moonsub Byeon, Jin Young Choi, Seoul National University

TP-L7.6 15:40 **SIAMESE RECURRENT ARCHITECTURE FOR VISUAL TRACKING**
Xiaqing Xu, Bingpeng Ma, Hong Chang, Xilin Chen, Institute of Computing Technology, Chinese Academy of Sciences

Light Field Imaging and Display

Session Co-Chairs: Homer Chen, National Taiwan University; Junsong Yuan, Nanyang Technological University

TP-L8.1 14:00 **EXTENDING THE FOV FROM DISPARITY AND COLOR CONSISTENCIES IN MULTIVIEW LIGHT FIELDS**
Zhao Ren, Qi Zhang, Hao Zhu, Qing Wang, Northwestern Polytechnical University

TP-L8.2 14:20 **PERFORMANCE ANALYSIS OF RECONSTRUCTION-BASED SUPER-RESOLUTION FOR CAMERA ARRAYS**
Kuang-Tsu Shih, Homer Chen, National Taiwan University

TP-L8.3 14:40 **TWO-STAGE CONVOLUTIONAL NEURAL NETWORK FOR LIGHT FIELD SUPER-RESOLUTION**
Hanzhi Fan, Dong Liu, Zhiwei Xiong, Feng Wu, University of Science and Technology of China

TP-L8.4 15:00 **EFFICIENT DIRECTIONAL AND L1-OPTIMIZED INTRA-PREDICTION FOR LIGHT FIELD IMAGE COMPRESSION**
Rui Zhong, Vrije Universiteit Brussel; Shizheng Wang, Nanyang Technological University; Bruno Cornelis, Vrije Universiteit Brussel; Yuanjin Zheng, Junsong Yuan, Nanyang Technological University; Adrian Munteanu, Vrije Universiteit Brussel

TP-L8.5 15:20 **VIEWPOINT ADAPTIVE DISPLAY OF HDR IMAGES**
Søren Forchhammer, Claire Mantel, Technical Univeristy of Denmark

TP-L8.6 15:40 **FOVEA WEIGHTING OF MULTIVIEW COMPUTATIONAL DISPLAYS FOR ENHANCED USER EXPERIENCE**
Fangzhou Luo, Xiaolin Wu, McMaster University

Enhancement and Restoration

Session Chair: Xin Fan, Dalian University of Technology

TP-L9.1 14:00 **A PARALLEL LINEARIZED ADMM WITH APPLICATION TO MULTICHANNEL TGV-BASED IMAGE RESTORATION**
Chuan He, Changhua Hu, the High-tech Institute of Xi'an; Xuelong Li, Xian Institute of Optics and Precision Mechanics

TP-L9.2 14:20 **REFLECTION SEPARATION USING GUIDED ANNOTATION**
Ofer Springer, Yair Weiss, The Hebrew University of Jerusalem

TP-L9.3 14:40 **FUSION OF MULTI-ANGULAR AERIAL IMAGES BASED ON EPIPOLAR GEOMETRY AND MATRIX COMPLETION**
Yanting Ma, North Carolina State University; Dehong Liu, Hassan Mansour, Ulugbek Kamilov, Yuichi Taguchi, Petros Boufounos, Anthony Vetro, Mitsubishi Electric Research Laboratories

TP-L9.4 15:00 **OCCLUSION-AWARE FACE INPAINTING VIA GENERATIVE ADVERSARIAL NETWORKS**
Yu-An Chen, Wei-Che Chen, National Taiwan University; Chia-Po Wei, Academia Sinica; Yu-Chiang Frank Wang, National Taiwan University

TP-L9.5 15:20 **UNDERWATER IMAGE ENHANCEMENT BASED ON STRUCTURE-TEXTURE DECOMPOSITION**
Jingyu Yang, Xinyan Wang, Huanjing Yue, Xiaomei Fu, Chunping Hou, Tianjin University

TP-L9.6 15:40 **SPATIO-SPECTRAL DECONVOLUTION OF VECTOR VALUED IMAGES USING TOTAL NUCLEAR VARIATION**
Moncef Hidane, INSA Centre Val de Loire - Laboratoire d'Informatique de l'Université de Tours; Clovis Tauber, UMRS Inserm U930 - Université de Tours

Image Quality Assessment

Session Chair: Peter Schelkens, Vrije Universiteit Brussel

TP-PA.1 PERCEPTUAL EVALUATION OF SINGLE-IMAGE SUPER-RESOLUTION RECONSTRUCTION
Guangcheng Wang, Leida Li, China University Of Minging And Technology; Qiaohong Li, Ke Gu, Nanyang Technological University; Zhaolin Lu, Jiansheng Qian, China University Of Minging And Technology

TP-PA.2 NO-REFERENCE IMAGE QUALITY ASSESSMENT WITH ORIENTATION SELECTIVITY MECHANISM
Jinjian Wu, Man Zhang, Guangming Shi, Xuemei Xie, Xidian University; Weisi Lin, NTU

TP-PA.3 EVIDENCE OF CHANGE BLINDNESS IN SUBJECTIVE IMAGE FIDELITY ASSESSMENT
Steven Le Moan, Massey University; Marius Pedersen, Norwegian University of Science and Technology

TP-PA.4 MSFE: BLIND IMAGE QUALITY ASSESSMENT BASED ON MULTI-STAGE FEATURE ENCODING
Qiuping Jiang, Feng Shao, Gangyi Jiang, Ningbo University

TP-PA.5 PERCEPTUAL QUALITY ASSESSMENT OF HDR DEGHOSTING ALGORITHMS
Yuming Fang, Hanwei Zhu, Jiangxi University of Finance and Economics; Kede Ma, Zhou Wang, University of Waterloo

TP-PA.6 THE DIVISIVE NORMALIZATION TRANSFORM BASED REDUCED-REFERENCE IMAGE QUALITY ASSESSMENT IN THE SHEARLET DOMAIN
Wu Dong, Beijing University of Posts and Telecommunications / Beijing Institute of Graphic Communication; Hongxia Bie, Beijing University of Posts and Telecommunications; Likun Lu, Yeli Li, Beijing Institute of Graphic Communication

TP-PA.7 QUALITY ASSESSMENT OF IMAGES UNDERGOING MULTIPLE DISTORTION STAGES
Shahrukh Athar, Abdul Rehman, Zhou Wang, University of Waterloo

TP-PA.8 DEEP BLIND IMAGE QUALITY ASSESSMENT BY EMPLOYING FR-IQA
Jongyoo Kim, Sanghoon Lee, Yonsei University

Image Enhancement I

Session Chair: Shuaicheng Liu, University of Electronic Science and Technology of China

TP-PB.1 INTELLIGENT DETAIL ENHANCEMENT FOR DIFFERENTLY EXPOSED IMAGES
Fei Kou, Weihai Chen, Xingming Wu, Beihang University; Zhengguo Li, Institute for Infocomm Research

TP-PB.2 CONTRAST-ACCUMULATED HISTOGRAM EQUALIZATION FOR IMAGE ENHANCEMENT
Xiaomeng Wu, Xinhao Liu, Kaoru Hiramatsu, Kunio Kashino, Nippon Telegraph and Telephone Corporation

TP-PB.3 RECONSTRUCTION OF POLARIZATION IMAGES FROM A MULTIMOD LIGHT FIELD CAMERA BASED ON THE ALIASING MODEL
Da An, Yan Yuan, Lijuan Su, Beihang University

TP-PB.4 BLIND IMAGE RESTORATION UTILIZING TOTAL VARIATION REGULARIZATION, SHOCK FILTER AND GRADIENT RELIABILITY MAP
Tomio Goto, Hiroki Senshiki, Satoshi Motohashi, Nagoya Institute of Technology; Haifeng Chen, Reo Aoki, EIZO Corporation

TP-PB.5 HAZERD: AN OUTDOOR SCENE DATASET AND BENCHMARK FOR SINGLE IMAGE DEHAZING
Yanfu Zhang, Li Ding, Gaurav Sharma, University of Rochester

TP-PB.6 SAR IMAGE DESPECKLING BY COMBINATION OF FRACTIONAL-ORDER TOTAL VARIATION AND NONLOCAL LOW RANK REGULARIZATION
Gao Chen, Gang Li, Tsinghua University; Yu Liu, Beihang University; Xiao-Ping Zhang, Ryerson University; Li Zhang, Tsinghua University

TP-PB.7 LOW-LIGHT IMAGE ENHANCEMENT USING CNN AND BRIGHT CHANNEL PRIOR
Li Tao, Chuang Zhu, Jiawen Song, Tao Lu, Huizhu Jia, Xiaodong Xie, Peking University

TP-PB.8 ADAPTIVE IMAGE CONTRAST ENHANCEMENT USING ARTIFICIAL BEE COLONY OPTIMIZATION
Jia Chen, Weiyu Yu, South China University of Technology; Jing Tian, Li Chen, Wuhan University of Science and Technology

Image Coding I

Session Chair: Lisimachos Kondi, University of Ioannina

TP-PC.1 A LOW-COMPLEXITY METRIC FOR THE ESTIMATION OF PERCEIVED CHROMINANCE SUB-SAMPLING ERRORS IN SCREEN CONTENT IMAGES
Andreas Heindel, Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU); Eugen Wige, LogMeIn Inc.; Felix Fleckenstein, Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU); Benjamin Prestele, Alexander Gehlert, LogMeIn Inc.; André Kaup, Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU)

TP-PC.2 GPU-FRIENDLY EBCOT VARIANT WITH SINGLE-PASS SCAN ORDER AND RAW BIT PLANE CODING
Volker Bruns, Miguel Àngel Martínez-del-Amor, Heiko Sparenberg, Fraunhofer IIS

TP-PC.3 DICTIONARY LEARNING-BASED IMAGE COMPRESSION
Hao Wang, Yong Xia, Northwestern Polytechnical University; Zhiyong Wang, University of Sydney

TP-PC.4 PRE-DEMOSAIC LIGHT FIELD IMAGE COMPRESSION USING GRAPH LIFTING TRANSFORM
Yung-Hsuan Chao, University of Southern California; Gene Cheung, National Institute of Informatics; Antonio Ortega, University of Southern California

TP-PC.5 A LEVEL-MAP APPROACH TO TRANSFORM COEFFICIENT CODING
Jingning Han, Ching-Han Chiang, Yaowu Xu, Google Inc.

TP-PC.6 SCALABLE LIGHT FIELD COMPRESSION SCHEME USING SPARSE RECONSTRUCTION AND RESTORATION
Fatma Hawary, TECHNICOLOR; Christine Guillemot, INRIA; Dominique Thoreau, Guillaume Boisson, TECHNICOLOR

TP-PC.7 REPRESENTATIVE PIXELS COMPRESSION ALGORITHM USING GRAPH SIGNAL PROCESSING FOR COLORIZATION-BASED IMAGE CODING
Kazunori Uruma, Ken Saito, Tomohiro Takahashi, Tokyo University of Science; Katsumi Konishi, Kogakuin University; Toshihiro Furukawa, Tokyo University of Science

TP-PC.8 LIGHT-FIELD IMAGE COMPRESSION BASED ON VARIATIONAL DISPARITY ESTIMATION AND MOTION-COMPENSATED WAVELET DECOMPOSITION
Trung-Hieu Tran, Yousef Baroud, Zhe Wang, Sven Simon, University of Stuttgart; David Taubman, The University of New South Wales

TP-PC.9 PSEUDO REVERSIBLE SYMMETRIC EXTENSION FOR LIFTING-BASED NONLINEAR-PHASE PARAUNITARY FILTER BANKS
Taizo Suzuki, Naoki Tanaka, Hiroyuki Kudo, University of Tsukuba

Biomedical image processing I

Session Chair: Jingyu Yang, Tianjin University

TP-PD.1 A NOVEL CAD SYSTEM FOR LOCAL AND GLOBAL EARLY DIAGNOSIS OF ALZHEIMER'S DISEASE BASED ON PIB-PET SCANS
Fatma El-Zahraa El-Gamal, Mohammed Elmogy, Mansoura University; Mohammed Ghazal, Abu Dhabi University; Ahmed Atwan, Mansoura University; Gregory Barnes, University of South Carolina; Manuel Casanova, Robert Keynton, Ayman El-Baz, University of Louisville

TP-PD.2 A COMPREHENSIVE FRAMEWORK FOR EARLY ASSESSMENT OF LUNG INJURY
Ahmed Soliman, Fahmi Khalifa, Ahmed Shaffie, Neal Dunlap, Brain Wang, Adel Elmaghraby, University of Louisville; Georgy Gimel'farb, University of Auckland; Mohammed Ghazal, Abu Dhabi University; Ayman El-Baz, University of Louisville

TP-PD.3 AUTOMATIC 3-D MUSCLE AND FAT SEGMENTATION OF THIGH MAGNETIC RESONANCE IMAGES IN INDIVIDUALS WITH SPINAL CORD INJURY
Samineh Mesbah, Ahmed Shalaby, Andrea Willhite, Susan Harkema, Enrico Rejc, Ayman El-Baz, University of Louisville

TP-PD.4 THREE-DIMENSIONAL SEGMENTATION OF VESICULAR NETWORKS OF FUNGAL HYPHAE IN MACROSCOPIC MICROSCOPY IMAGE STACKS
Philip Saponaro, Wayne Treible, Abhishek Kolagunda, Stephen Rhein, Jeffrey Caplan, Chandra Kambhamettu, Randall Wisser, University of Delaware

TP-PD.5 IMAGE-BASED MEASUREMENT OF CARGO TRAFFIC FLOW IN COMPLEX NEURITE NETWORKS
Xiaoqi Chai, Douglas Qian, Qinle Ba, Angran Li, Yongjie Jessica Zhang, Ge Yang, Carnegie Mellon University

TP-PD.6 DEEP NEURAL NETWORKS ON GRAPH SIGNALS FOR BRAIN IMAGING ANALYSIS
Yiluan Guo, Hossein Nejati, Ngai-Man Cheung, Singapore University of Technology and Design

TP-PD.7 STROMULE BRANCH TIP DETECTION BASED ON ACCURATE CELL IMAGE SEGMENTATION
Guoyu Lu, Rochester Institute of Technology; Li Ren, Jeffrey Caplan, Chandra Kambhamettu, University of Delaware

TP-PD.8 SPECIALIZED GAZE ESTIMATION FOR CHILDREN BY CONVOLUTIONAL NEURAL NETWORK AND DOMAIN ADAPTATION
Wen Cui, Jinshi Cui, Hongbin Zha, Peking University

Image and Video Segmentation II

Session Chair: Adrian Barbu, Florida State University

TP-PE.1 UNSUPERVISED SEGMENTATION OF LOW DEPTH OF FIELD IMAGES BASED ON L0 REGULARIZED MATTING MODEL
Yibo Chen, Tianle Zhao, Wai-Kuen Cham, The Chinese University of Hong Kong

TP-PE.2 A MODEL-BASED APPROACH FOR HUMAN HEAD-AND-SHOULDER SEGMENTATION
Xiaowei Deng, McMaster University; Yuxiang Shen, Hulu llc; Xiaolin Wu, McMaster University; Liang Zhao, Hulu llc

TP-PE.3 A GRAPH-BASED APPROACH FOR FEATURE EXTRACTION AND SEGMENTATION OF MULTIMODAL IMAGES
Geoffrey Iyer, University of California, Los Angeles; Jocelyn Chanussot, University Grenoble Alpes, CNRS, GIPSA-lab; Andrea L. Bertozzi, University of California, Los Angeles

TP-PE.4 BOUNDARY AWARE IMAGE SEGMENTATION WITH UNSUPERVISED MIXTURE MODELS
Thorsten Wilhelm, Christian Wöhler, Technische Universität Dortmund

TP-PE.5 CIRCLET BASED FRAMEWORK FOR OPTIC DISK DETECTION
Omid Sarrafzadeh, Hossein Rabbani, Alireza Mehri Dehnavi, MISP Research Center

TP-PE.6 LOOSECUT: INTERACTIVE IMAGE SEGMENTATION WITH LOOSELY BOUNDED BOXES
Hongkai Yu, Youjie Zhou, University of South Carolina; Hui Qian, Zhejiang University; Min Xian, Utah State University; Song Wang, University of South Carolina

TP-PE.7 VIDEO SEGMENTATION VIA BOUNDARY-AWARE FLOW
Ding-Jie Chen, Hwann-Tzong Chen, Long-Wen Chang, National Tsing Hua University

TP-PE.8 HYBRID SALIENT MOTION DETECTION USING TEMPORAL DIFFERENCING AND KALMAN FILTER TRACKING WITH NON-STATIONARY CAMERA
Xuesong Le, Ruben Gonzalez, Griffith University

TP-PE.9 SAR IMAGE SEGMENTATION WITH RÉNYI'S ENTROPY
Ricardo H. Nobre, Francisco A. Betts, Federal University of Ceará; Regis Cristiano Pinheiro Marques, Federal Institute of Ceará; Juvêncio S. Nobre, Jeová F. S. R. Neto, Fátima N. S. Medeiros, Federal University of Ceará

Object Detection V

Session Chair: Lifang Wu, Beijing University of Technology

TP-PF.1 FAST ACTION LOCALIZATION BASED ON SPATIO-TEMPORAL PATH SEARCH
Qingtian Wu, Huiwen Guo, Xinyu Wu, Yimin Zhou, Shenzhen College of Advanced Technology, University of Chinese Academy of Science; Nannan Li, Peking University Shenzhen Graduate School

TP-PF.2 VEHICLE DETECTION AND POSE ESTIMATION BY PROBABILISTIC REPRESENTATION
Yao Xue, University of Alberta; Xueming Qian, Xi'an Jiaotong University

TP-PF.3 SINGLE SHOT OBJECT DETECTION WITH TOP-DOWN REFINEMENT
Guangxing Han, Xuan Zhang, Chongrong Li, Tsinghua University

TP-PF.4 LEARNING-BASED HUMAN DETECTION APPLIED TO RGB-D IMAGES
Patrisia Sherryl Santoso, Hsueh-Ming Hang, National Chiao Tung University

TP-PF.5 MULTI-FEATURE FUSION BASED BACKGROUND SUBTRACTION FOR VIDEO SEQUENCES WITH STRONG BACKGROUND CHANGES
Zhenkun Huang, Ruimin Hu, National Engineering Research Center for Multimedia Software, School of computer, Wuhan University, Research Institute of Wuhan University in Shenzhen; Bouwmans Thierry, Lab. MIA, Univ. La Rochelle, France; Shihong Chen, National Engineering Research Center for Multimedia Software, School of computer, Wuhan University, Research Institute of Wuhan University in Shenzhen

TP-PF.6 SCENE TEXT DETECTION BASED ON SKELETON-CUT DETECTOR
Xiang He, Yonghong Song, Yuanlin Zhang, Xi'an Jiaotong University

TP-PF.7 FINGERTIP DETECTION BASED ON PROTUBERANT SALIENCY FROM DEPTH IMAGE
Yuseok Ban, Yonsei University; Minglei Li, Lei Sun, Qiang Huo, Microsoft Research

TP-PF.8 ADAPTIVE PEOPLE DETECTION BASED ON CROSS-CORRELATION MAXIMIZATION
Alvaro Garcia-Martin, Juan Carlos SanMiguel Avedillo, Universidad Autonoma de Madrid

TP-PF.9 OBJECT DETECTION VIA FEATURE FUSION BASED SINGLE NETWORK
Jian Li, Jianjun Qian, Jian Yang, School of Computer Science and Engineering, Nanjing University of Science and Technology

TP-PF.10 CONVOLUTIONAL NEURAL NETWORKS FOR LICENSE PLATE DETECTION IN IMAGES
Francisco Delmar Kurpiel, Rodrigo Minetto, Bogdan Tomoyuki Nassu, Federal University of Technology - Parana

Image and Video Labeling and Retrieval II

Session Chair: Hongxun Yao, Harbin Institute of Technology

TP-PG.1 TEMPORAL ACTION LOCALIZATION WITH TWO-STREAM SEGMENT-BASED RNN
Tianwei Lin, Xu Zhao, Zhaoxuan Fan, Shanghai Jiao Tong University

TP-PG.2 UNSUPERVISED PERSON RE-IDENTIFICATION VIA RE-RANKING ENHANCED SAMPLE-SPECIFIC METRIC LEARNING
Heng Zhao, Zhenjun Han, Zhaoju Li, Fei Qin, University of Chinese Academy of Sciences

TP-PG.3 ACTION RECOGNITION IN RGB-D EGOCENTRIC VIDEOS
Yansong Tang, Yi Tian, Jiwen Lu, Jianjiang Feng, Jie Zhou, Tsinghua University

TP-PG.4 ACTION RECOGNITION USING SPATIO-TEMPORAL DIFFERENTIAL MOTION
Gaurav Yadav, Amit Sethi, Indian Institute of Technology Guwahati

TP-PG.5 UNSUPERVISED DEEP HASHING WITH STACKED CONVOLUTIONAL AUTOENCODERS
Sovann En, Bruno Crémilleux, Frédéric Jurie, University of Caen

TP-PG.6 DEEP PARTIAL PERSON RE-IDENTIFICATION VIA ATTENTION MODEL
Junyeong Kim, Chang D. Yoo, Korea Advanced Institute of Science and Technology

TP-PG.7 DEEP-BASED FISHER VECTOR FOR MOBILE VISUAL SEARCH
Chen Huang, Shengchuan Zhang, Xianming Lin, Xiangrong Liu, Rongrong Ji, Xiamen University

TP-PG.8 SACCADE GAZE PREDICTION USING A RECURRENT NEURAL NETWORK
Thuyen Ngo, B.S. Manjunath, University of California, Santa Barbara

TP-PG.9 METRIC LEARNING BASED ON ATTRIBUTE HYPERGRAPH
Yuchun Fang, Yandan Zheng, Shanghai University

Scanned Document Processing

Session Chair: Edgar A. Bernal, United Technologies Research Center

TQ-L1.1 16:30 **LOCALLY PRESERVING PROJECTION ON SYMMETRIC POSITIVE DEFINITE MATRIX LIE GROUP**
Yangyang Li, Academy of Mathematics and Systems Science Key Lab of MADIS CAS, Beijing

TQ-L1.2 16:50 **WORDFENCE: TEXT DETECTION IN NATURAL IMAGES WITH BORDER AWARENESS**
*Andrei Polzounov, Universitat Politecnica de Catalunya; Artsiom Ablavatski, A*STAR Institute for Infocomm Research; Sergio Escalera, Universitat de Barcelona; Shijian Lu, A*STAR Institute for Infocomm Research; Jianfei Cai, Nanyang Technological University*

TQ-L1.3 17:10 **PRESERVING PERCEPTUAL CONTRAST IN DECOLORIZATION WITH OPTIMIZED COLOR ORDERS**
Bin Jin, Sabine Süsstrunk, École polytechnique fédérale de Lausanne

TQ-L1.4 17:30 **DIVERSITY-INDUCED WEIGHTED CLASSIFIER ENSEMBLE LEARNING**
Yong Dong, X.-J. Shen, Liang Jun Wang, Dickson Keddy Wornyo, JiangSu University; Zheng-Jun Zha, University of Science and Technology of China

Image Representation II

Session Chair: Alessandro Foi, Tampere University of Technology

TQ-L2.1 16:30 **PERCEPTUAL METRIC FOR COLOR TRANSFER METHODS**
Hristina Hristova, Olivier Le Meur, Remi Cozot, Kadi Bouatouch, University of Rennes 1

TQ-L2.2 16:50 **CLASS-SPECIFIC IMAGE DENOISING USING IMPORTANCE SAMPLING**
Milad Niknejad, José M. Bioucas-Dias, Mario Figueiredo, Instituto de Telecomunicações

TQ-L2.3 17:10 **CLASS-SPECIFIC POISSON DENOISING BY PATCH-BASED IMPORTANCE SAMPLING**
Milad Niknejad, José M. Bioucas-Dias, Mario Figueiredo, Instituto de Telecomunicações

TQ-L2.4 17:30 **JOINT DENOISING AND DECOMPRESSION: A PATCH-BASED BAYESIAN APPROACH**
Javier Preciozzi, Mario Gonzalez, Universidad de la Republica; Andrés Almansa, CNRS, Université Paris Descartes, Sorbonne Paris Cité; Pablo Muse, Universidad de la Republica

TQ-L2.5 17:50 **END-TO-END BINARY REPRESENTATION LEARNING VIA DIRECT BINARY EMBEDDING**
Liu Liu, Alireza Rahimpour, Ali Taalimi, Hairong Qi, University of Tennessee

Semantic Segmentation

Session Chair: Kannappan Palaniappan, Univ. of Missouri-Columbia

TQ-L3.1 16:30 **SEMANTICS-GUIDED MULTI-LEVEL RGB-D FEATURE FUSION FOR INDOOR SEMANTIC SEGMENTATION**
Yabei Li, Junge Zhang, Yanhua Cheng, Kaiqi Huang, Tieniu Tan, Center for Research on Intelligent Perception and Computing, National Laboratory of Pattern Recognition, Institute of Automation, Chinese Academy of Sciences, University of Chinese Academy of Sciences

TQ-L3.2 16:50 **LEARNABLE CONTEXTUAL REGULARIZATION FOR SEMANTIC SEGMENTATION OF INDOOR SCENE IMAGES**
Jun Chu, Xu Xiao, Nanchang Hangkong University; Gaofeng Meng, Lingfeng Wang, Chunhong Pan, Institute of Automation, Chinese Academy of Sciences

TQ-L3.3 17:10 **IMPROVING THE DISCRIMINATION BETWEEN FOREGROUND AND BACKGROUND FOR SEMANTIC SEGMENTATION**
Yu Liu, Michael S. Lew, Leiden University

TQ-L3.4 17:30 **WEAKLY SUPERVISED FOOD IMAGE SEGMENTATION USING CLASS ACTIVATION MAPS**
Yu Wang, Fengqing Zhu, Purdue University; Carol Boushey, University of Hawaii; Edward Delp, Purdue University

TQ-L3.5 17:50 **SEMANTIC SEGMENTATION BASED ON ITERATIVE CONTRACTION AND MERGING**
Tzu-Hao Yang, Jia-Hao Syu, Sheng-Jyh Wang, National Chiao Tung University

Learning for Recognition

Session Chair: Wu Liu, Beijing University of Post and Telecommunication

TQ-L5.1 16:30 **ENCYCLOPEDIA ENHANCED SEMANTIC EMBEDDING FOR ZERO-SHOT LEARNING**
Zhen Jia, Junge Zhang, Kaiqi Huang, Tieniu Tan, Institute of Automation, Chinese Academy of Sciences

TQ-L5.2 16:50 **COMMUNITY DETECTION USING RANDOM-WALK SIMILARITY AND APPLICATION TO IMAGE CLUSTERING**
Makoto Okuda, National Institute of Information and Communications Technology; Shin'ichi Satoh, National Institute of Informatics; Shoichiro Iwasawa, Shunsuke Yoshida, Yutaka Kidawara, National Institute of Information and Communications Technology; Yoichi Sato, The University of Tokyo

TQ-L5.3 17:10 **MULTI LAYER MULTI OBJECTIVE EXTREME LEARNING MACHINE**
Chamara Kasun Liyanaarachchi Lekamalage, Kang Song, Guang-bin Huang, Dongshun Cui, Nanyang Technological University; Ken Liang, Delta Electronics Inc.

TQ-L5.4 17:30 **ENSEMBLE DIVERSITY ANALYSIS ON REMOTE SENSING DATA CLASSIFICATION USING RANDOM FORESTS**
Samia Boukir, Bordeaux Institute of Technology; Andrew Mellor, RMIT University

TQ-L5.5 17:50 **THREE BIRDS, ONE STONE: SIMULTANEOUS OBJECT DETECTION, RECOGNITION, AND PROFILING USING PHASE ENCODED MACE FILTERS**
Chandrasekhar Bhagavatula, Felix Juefei-Xu, Jason Wang, Marios Savvides, Carnegie Mellon University

Semantic Analysis

Session Chair: Guangyu Gao, Beijing Institute of Technology

TQ-L6.1 16:30 **DANCING LIKE A SUPERSTAR: ACTION GUIDANCE BASED ON POSE ESTIMATION AND CONDITIONAL POSE ALIGNMENT**
Yuxin Hou, Hongxun Yao, Haoran Li, Xiaoshuai Sun, Harbin Institute of Technology

TQ-L6.2 16:50 **A DATABASE FOR PERCEPTUAL EVALUATION OF IMAGE AESTHETICS**
Wentao Liu, Wang Zhou, University of Waterloo

TQ-L6.3 17:10 **REDUCING NOISY LABELS IN WEAKLY LABELED DATA FOR VISUAL SENTIMENT ANALYSIS**
Lifang Wu, Shuang Liu, Meng Jian, Beijing University of Technology; Jiebo Luo, University of Rochester; Xiuzhen Zhang, RMIT University; Mingchao Qi, Beijing University of Technology

TQ-L6.4 17:30 **TAG REFINEMENT BASED ON MULTILINGUAL TAG HIERARCHIES EXTRACTED FROM IMAGE FOLKSONOMY**
Shota Hamano, Takahiro Ogawa, Miki Haseyama, Hokkaido University

TQ-L6.5 17:50 **TRANSFERRING CNNS TO MULTI-INSTANCE MULTI-LABEL CLASSIFICATION ON SMALL DATASETS**
Mingzhi Dong, University College London; Kunkun Pang, University of Edinburgh; Yang Wu, Nara Institute of Science and Technology; Jing-Hao Xue, University College London; Timothy Hospedales, University of Edinburgh; Tsukasa Ogasawara, Nara Institute of Science and Technology

Object Detection VI

Session Chair: Yuchao Dai, Australia National University

TQ-L7.1 16:30 **AN EVALUATION OF REGION BASED OBJECT DETECTION STRATEGIES WITHIN X-RAY BAGGAGE SECURITY IMAGERY**
Samet Akcay, Toby Breckon, Durham University

TQ-L7.2 16:50 **ALL THE PEOPLE AROUND ME: FACE DISCOVERY IN EGOCENTRIC PHOTO-STREAMS**
Maedeh Aghaei, Mariella Dimiccoli, Petia Radeva, University of Barcelona

TQ-L7.3 17:10 **REGION AVERAGE POOLING FOR CONTEXT-AWARE OBJECT DETECTION**
*Kingsley Kuan, Gaurav Manek, Jie Lin, Yuan Fang, Vijay Chandrasekhar, Institute for Infocomm Research, A*STAR*

TQ-L7.4 17:30 **LIDARBOX: A FAST AND ACCURATE METHOD FOR OBJECT PROPOSALS VIA LIDAR POINT CLOUDS FOR AUTONOMOUS VEHICLES**
Haziq Razali, NUS; Nizar Ouarti, Sorbonne UPMC, CNRS, NUS, Astar

Biomedical image processing II

Session Chair: Qiegen Liu, Nanchang University

TQ-L8.1 16:30 **POINT PROCESS MODELING FOR DETERMINING DETECTION ACCURACY OF MAMMOGRAPHIC MICROCALCIFICATIONS**
Maria V. Sainz de Cea, Yongyi Yang, Illinois Institute of Technology

TQ-L8.2 16:50 **AUTOMATIC DELINEATION OF MACULAR REGIONS BASED ON A LOCALLY DEFINED CONTRAST FUNCTION**
J. R. Harish Kumar, Indian Institute of Science, Bangalore; Rittwik Adhikari, PES Institute of Technology, Bangalore; Yogish Kamath, Rajani Jampala, Kasturba Medical College, Manipal; Chandra Sekhar Seelamantula, Indian Institute of Science, Bangalore

TQ-L8.3 17:10 **ACTIVE CONVOLUTIONAL NEURAL NETWORKS FOR CANCEROUS TISSUE RECOGNITION**
Panagiotis Stanitsas, University of Minnesota; Anoop Cherian, Australian National University; Alexander Truskinovsky, Roswell Park Cancer Institute; Vassilios Morellas, Nikolaos Papanikolopoulos, University of Minnesota

TQ-L8.4 17:30 **A NEW FRAMEWORK FOR INCORPORATING APPEARANCE AND SHAPE FEATURES OF LUNG NODULES FOR PRECISE DIAGNOSIS OF LUNG CANCER**
Ahmed Shaffie, Ahmed Soliman, University of Louisville; Mohammed Ghazal, Abu Dhabi University; Fatma Taher, Khalifa University; Neal Dunlap, Brian Wang, Adel Elmaghraby, University of Louisville; Georgy Gimel'farb, University of Auckland; Ayman El-Baz, University of Louisville

TQ-L8.5 17:50 **DEEP-LEARNING-ASSISTED VISUALIZATION FOR LIVE-CELL IMAGES**
Hsueh-Chien Cheng, Antonio Cardone, Eric Krokos, Bogdan Stoica, Alan Faden, Amitabh Varshney, University of Maryland

Image and Video Enhancement

Session Chair: Xianming Liu, Harbin Institute of Technology

TQ-L9.1 16:30 **A DEEP CNN METHOD FOR UNDERWATER IMAGE ENHANCEMENT**
Yang Wang, Jing Zhang, Yang Cao, Zengfu Wang, University of Science and Technology of China

TQ-L9.2 16:50 **VIEW SYNTHESIS WITH HIERARCHICAL CLUSTERING BASED OCCLUSION FILLING**
Ji Dai, Truong Q. Nguyen, University of California, San Diego

TQ-L9.3 17:10 **CAMERA-SPECIFIC IMAGE QUALITY ENHANCEMENT USING A CONVOLUTIONAL NEURAL NETWORK**
Anselm Grundhöfer, Gerhard Röthlin, Disney Research

TQ-L9.4 17:30 **MULTI-OUTPUT SPECKLE REDUCTION FILTER FOR ULTRASOUND MEDICAL IMAGES BASED ON MULTIPLICATIVE MULTIRESOLUTION DECOMPOSITION**
Meriem Outtas, Lu Zhang, Olivier Déforges, IETR; Amina Serir, LTIR; Wassim Hamidouche, IETR

TQ-L9.5 17:50 **CORRELATION-BASED DEBLURRING LEVERAGING MULTISPECTRAL CHROMATIC ABERRATION IN COLOR AND NEAR-INFRARED JOINT ACQUISITION**
Majed El Helou, Zahra Sadeghipoor, Sabine Süsstrunk, École polytechnique fédérale de Lausanne

Perception and Quality Models

Session Chair: Frederic Dufaux, Universite Paris-Sud

TQ-PA.1 A NO-REFERENCE VIDEO QUALITY PREDICTOR FOR COMPRESSION AND SCALING ARTIFACTS
Deepti Ghadiyaram, The University of Texas at Austin; Chao Chen, Sasi Inguva, Anil Kokaram, Google Inc.

TQ-PA.2 CVIQD: SUBJECTIVE QUALITY EVALUATION OF COMPRESSED VIRTUAL REALITY IMAGES
Wei Sun, Shanghai Jiao Tong University; Ke Gu, Beijing University of Technology; Guangtao Zhai, Shanghai Jiao Tong University; Siwei Ma, Peking University; Weisi Lin, Nanyang Technological University; Patrick Le Callet, University de Nantes

TQ-PA.3 ROBUST SHAPE REGULARITY CRITERIA FOR SUPERPIXEL EVALUATION
Rémi Giraud, Vinh-Thong Ta, University of Bordeaux; Nicolas Papadakis, CNRS

TQ-PA.4 GEOMETRIC DISTORTION METRICS FOR POINT CLOUD COMPRESSION
Dong Tian, Hideaki Ochimizu, Chen Feng, Robert Cohen, Anthony Vetro, Mitsubishi Electric Research Laboratories

TQ-PA.5 QUALITY ASSESSMENT OF MPEG-4 AVC/H.264 AND HEVC COMPRESSED VIDEO IN A TELEMEDICINE CONTEXT
Amine Chaabouni, Université de Lorraine; Julien Lambert, Institut Mines Telecom; Yann Gaudeau, Université de Strasbourg; Nicolas Tizon, Didier Nicholson, VITEC; Jean-Marie Moureaux, Université de Lorraine

TQ-PA.6 MULTI-LAYER LINEAR MODEL FOR TOP-DOWN MODULATION OF VISUAL ATTENTION IN NATURAL EGOCENTRIC VISION
Keng Teck Ma, Liyuan Li, Peilun Dai, Joo Hwee Lim, Institute for Infocomm Research; Chengyao Shen, National University of Singapore; Qi Zhao, University of Minnesota

TQ-PA.7 PERCEPTUAL ALIASING FACTORS AND THE IMPACT OF FRAME RATE ON VIDEO QUALITY
Rasoul Mohammadi Nasiri, Zhou Wang, University of Waterloo

TQ-PA.8 VISUAL QUALITY PREDICTION ON DISTORTED STEREOSCOPIC IMAGES
Ching-Ti Lin, Tsung-Jung Liu, National Chung Hsing University; Kuan-Hsien Liu, National Taichung University of Science and Technology

TQ-PA.9 VISUAL ENTROPY: A NEW FRAMEWORK FOR QUANTIFYING VISUAL INFORMATION BASED ON HUMAN PERCEPTION
Sewoong Ahn, Kwanghyun Lee, Sanghoon Lee, Yonsei University

TQ-PA.10 SUBJECTIVE ASSESSMENT OF SUPER MULTIVIEW VIDEO WITH CODING ARTIFACTS
Rocío Recio, Pablo Carballeira, Universidad Politécnica de Madrid; Jesús Gutiérrez, Université de Nantes; Narciso García, Universidad Politécnica de Madrid

Image Enhancement II

Session Chair: Anir Sadovnik, Lafayette College

TQ-PB.1 A NOVEL VARIATIONAL MODEL FOR RETINEX IN PRESENCE OF SEVERE NOISES
Lu Liu, Tianjin University; Zhi-Feng Pang, Henan University; Yuping Duan, Tianjin University

TQ-PB.2 PRINCIPAL NOISELESS COLOR COMPONENT EXTRACTION BY LINEAR COLOR COMPOSITION WITH OPTIMAL COEFFICIENTS
Takuya Sugimoto, Kazuhiro Fujimori, Keiichiro Shirai, Hidetoshi Miyao, Minoru Maruyama, Shinshu University

TQ-PB.3 A STUDY ON QUANTIZATION EFFECTS OF DCT BASED COMPRESSION
Xiao Shu, McMaster University; Xiaolin Wu, Shanghai Jiao Tong University; Bolin Liu, McMaster University

TQ-PB.4 STRIPE NOISE REMOVAL OF REMOTE SENSING IMAGE WITH A DIRECTIONAL L0 SPARSE MODEL
Hong-Xia Dou, Ting-Zhu Huang, Liang-Jian Deng, Yong Chen, University of Electronic Science and Technology of China

TQ-PB.5 CONTENT-AWARE NEURON IMAGE ENHANCEMENT
Haoyi Liang, Scott T. Acton, Daniel Weller, University of Virginia

TQ-PB.6 SPECTRAL PRE-ADAPTATION FOR TWO-STEP ARBITRARY-SHAPE-SUPPORT IMAGE RESTORATION
Chaoqun Dong, Hong Kong University of Science and Technology; Javier Portilla, Consejo Superior de Investigaciones Cientificas

TQ-PB.7 LOW-RANK MATRIX COMPLETION AGAINST MISSING ROWS AND COLUMNS WITH SEPARABLE 2-D SPARSITY PRIORS
Jiaoru Yang, Lei You, Kun Li, Jingyu Yang, Tianjin University

TQ-PB.8 COLOR ENHANCEMENT WITH ADAPTIVE ILLUMINATION ESTIMATION FOR LOW BACKLIGHTED DISPLAYS
Soo-Chang Pei, National Taiwan University; Chih-Tsung Shen, ITRI

Biometric Recognition II

Session Chair: Andrew Teoh, Yonsei University

TQ-PC.1 INTEGRATION OF DISCRIMINATIVE FEATURES AND SIMILARITY-PRESERVING ENCODING FOR FINGER VEIN IMAGE RETRIEVAL
Kuikui Wang, Shandong University; Lu Yang, Shandong University of Finance and Economics; Gongping Yang, Yilong Yin, Shandong University

TQ-PC.2 CAN NO-REFERENCE IMAGE QUALITY METRICS ASSESS VISIBLE WAVELENGTH IRIS SAMPLE QUALITY?
Xinwei Liu, University of Caen and Norwegian University of Science and Technology; Marius Pedersen, Norwegian University of Science and Technology; Christophe Charrier, University of Caen; Patrick Bours, Norwegian University of Science and Technology

TQ-PC.3 HAND GESTURE RECOGNITION BASED ON BAYESIAN SENSING HIDDEN MARKOV MODELS AND BHATTACHARYYA DIVERGENCE
Sih-Huei Chen, Ari Hernawan, Yuan-Shan Lee, Jia-Ching Wang, National Central University

TQ-PC.4 LATENT FINGERPRINT ENHANCEMENT USING GABOR AND MINUTIA DICTIONARIES
Miao Xu, Jianjiang Feng, Jiwen Lu, Jie Zhou, Tsinghua University

TQ-PC.5 FEATURE EXTRACTION USING GAZE OF PARTICIPANTS FOR CLASSIFYING GENDER OF PEDESTRIANS IN IMAGES
Riku Matsumoto, Hiroki Yoshimura, Masashi Nishiyama, Yoshio Iwai, Tottori University

TQ-PC.6 TOUCHLESS-TO-TOUCH FINGERPRINT SYSTEMS COMPATIBILITY METHOD
Pedro Salum, Daniel Sandoval, Loop Computer Engineering; Alexandre Zaghetto, Bruno Macchiavello, Cauê Zaghetto, University of Brasília

TQ-PC.7 DEFORMABLE MULTI-SCALE SCHEME FOR BIOMETRIC PERSONAL IDENTIFICATION
Gaurav Jaswal, National Institute of Technology; Aditya Nigam, Indian Institute of Technology; Ravinder Nath, National Institute of Technology

TQ-PC.8 PERSON RE-IDENTIFICATION WITH DEEP DENSE FEATURE REPRESENTATION AND JOINT BAYESIAN
Shengke Wang, Lianghua Duan, Na Yang, Junyu Dong, Ocean University of China

Computational Image Formation & Reconstruction II

Session Chair: Keita Takahashi, Nagoya University

TQ-PD.1 RECONSTRUCTION OF HIGHLY STRUCTURED IMAGE BY ENTROPY OPTIMIZATION
Zhaohui Sun, Kitware Inc.

TQ-PD.2 ROBUST RECOVERY FOR APERTURE SYNTHESIS IMAGING
Liying Wei, IBM Research - Netherlands; Stefan Wijnholds, Netherlands Institute for Radio Astronomy (ASTRON); Paul Hurley, IBM Zurich Research Laboratory

TQ-PD.3 REAL-TIME 3-D IMAGE RECONSTRUCTION FROM MULTI-FOCUS IMAGES BY EFFICIENT LINEAR FILTERING WITH MULTI-DIMENSIONAL SYMMETRY
Kazuya Kodama, National Institute of Informatics; Zhen Wang, Tianjin University of Finance and Economics; Masanori Sato, Tomochika Murakami, Canon Inc.

TQ-PD.4 PERFORMANCE COMPARISON OF BAYESIAN ITERATIVE ALGORITHMS FOR THREE CLASSES OF SPARSITY ENFORCING PRIORS WITH APPLICATION IN COMPUTED TOMOGRAPHY
Mircea Dumitru, CentraleSupélec; Li Wang, Nicolas Gac, Université Paris Saclay; Ali Mohammad-Djafari, CNRS

TQ-PD.5 AN IMAGE RECONSTRUCTION FRAMEWORK BASED ON DEEP NEURAL NETWORK FOR ELECTRICAL IMPEDANCE TOMOGRAPHY
Xiuyan Li, Yang Lu, Jianming Wang, Xin Dang, Qi Wang, Xiaojie Duan, Yukuan Sun, Tianjin Polytechnic University

TQ-PD.6 ONLINE DATA-DRIVEN DYNAMIC IMAGE RESTORATION USING DINO-KAT MODELS
Brian Moore, Saiprasad Ravishankar, University of Michigan

TQ-PD.7 LIGHT TRANSPORT COMPONENT DECOMPOSITION USING MULTI-FREQUENCY ILLUMINATION
Art Subpa-Asa, Tokyo Institute of Technology; Yinqiang Zheng, Nobutaka Ono, Imari Sato, National Institute of Informatics

TQ-PD.8 A RECURSIVE BORN APPROACH TO NONLINEAR INVERSE SCATTERING
Ulugbek Kamilov, Dehong Liu, Hassan Mansour, Petros Boufounos, Mitsubishi Electric Research Laboratories

TQ-PD.9 COMBINING INERTIAL MEASUREMENTS WITH BLIND IMAGE DEBLURRING USING DISTANCE TRANSFORM
Yi Zhang, Argo AI; Keigo Hirakawa, University of Dayton

TQ-PD.10 PLUG-AND-PLAY PRIORS FOR BRIGHT FIELD ELECTRON TOMOGRAPHY AND SPARSE INTERPOLATION
Suhas Sreehari, Wells Fargo; Singanallur Venkatakrishnan, Oak Ridge National Laboratory; Brendt Wohlberg, Los Alamos National Laboratory; Gregery Buzzard, Purdue University; Lawrence Drummy, Jeffrey Simmons, Air Force Research Laboratory; Charles Bouman, Purdue University

Shape Analysis III

Session Chair: Xin Fan, Dalian University of Technology

TQ-PE.1 ROBUST OBJECT TRACKING BASED ON DISCRIMINATIVE ANALYSIS AND LOCAL SPARSE REPRESENTATION
Peng Tian, Jianghua Lv, Beihang University

TQ-PE.2 EFFICIENTLY BUILDING 3D LINE MODEL WITH POINTS
Xinkai Gao, Qi Jia, Haojie Li, He Guo, Dalian University of Technology

TQ-PE.3 A WEIGHTING STRATEGY FOR ACTIVE SHAPE MODELS
Alma Eguizabal, Peter J. Schreier, University of Paderborn

TQ-PE.4 DEEP LEARNING FOR 3D SHAPE CLASSIFICATION FROM MULTIPLE DEPTH MAPS
Pietro Zanuttigh, Ludovico Minto, University of Padova

TQ-PE.5 TRADEMARK IMAGE RETRIEVAL USING HIERARCHICAL REGION FEATURE DESCRIPTION
Feng Liu, Bin Wang, Fanqing Zeng, Nanjing University of Finance & Economics

TQ-PE.6 AUTOMATIC RECOGNITION OF COMMON ARABIC HANDWRITTEN WORDS BASED ON OCR AND N-GRAMS
Laslo Dinges, Ayoub Al-Hamadi, Moftah Elzobi, Andreas Nürnberger, Otto-von-Guericke-University Magdeburg

TQ-PE.7 SUPERPATCHMATCH: AN ALGORITHM FOR ROBUST CORRESPONDENCES USING SUPERPIXEL PATCHES
Rémi Giraud, Vinh-Thong Ta, Aurélie Bugeau, University of Bordeaux; Pierrick Coupé, Nicolas Papadakis, CNRS

Object Tracking IV

Session Chair: Lifang Wu, Beijing University of Technology

TQ-PF.1 ONLINE MULTIPLE OBJECT TRACKING VIA FLOW AND CONVOLUTIONAL FEATURES
Lu Wang, Lisheng Xu, Northeastern University; Min Young Kim, Luca Rigazio, Panasonic, Silicon Valley Laboratory; Ming-Hsuan Yang, University of California, Merced

TQ-PF.2 ADDRESSING AMBIGUITY IN MULTI-TARGET TRACKING BY HIERARCHICAL STRATEGY
Ali Taalimi, Liu Liu, Hairong Qi, University of Tennessee

TQ-PF.3 LONG-TERM OBJECT TRACKING BASED ON SIAMESE NETWORK
Kaiheng Dai, Yuehuan Wang, Xiaoyun Yan, Huazhong University of Science and Technology

TQ-PF.4 SIMPLE ONLINE AND REALTIME TRACKING WITH A DEEP ASSOCIATION METRIC
Nicolai Wojke, University of Koblenz-Landau; Alex Bewley, Queensland University of Technology; Dietrich Paulus, University of Koblenz-Landau

TQ-PF.5 DEEP CONVOLUTIONAL PARTICLE FILTER FOR VISUAL TRACKING
Reza Jalil Mozhdehi, Henry Medeiros, Marquette University

TQ-PF.6 CONTEXT-BASED OCCLUSION DETECTION FOR ROBUST VISUAL TRACKING
Xiaoguang Niu, Yu Qiao, Shanghai Jiao Tong University

TQ-PF.7 DEPTH-WEIGHTED CORRELATION METHOD FOR VISUAL TRACKING WITH OCCLUSION DETECTION
Chenghao Li, Yuan Zhou, Tianjin University; Bo Cui, Chinese Academy of Sciences; Chunping Hou, Tianjin University

TQ-PF.8 ROBUST OBJECT TRACKING BY INTERLEAVING VARIABLE RATE COLOR PARTICLE FILTERING AND DEEP LEARNING
Baris Akok, Filiz Gurkan, Onur Kaplan, Bilge Gunsel, Istanbul Technical University

TQ-PF.9 ONLINE-LEARNING-BASED HUMAN TRACKING ACROSS NON-OVERLAPPING CAMERAS
Young-Gun Lee, Zheng Tang, Jenq-Neng Hwang, University of Washington

TQ-PF.10 ROBUST VISUAL TRACKING USING STRUCTURE-PRESERVING SPARSE LEARNING
Hyuncheol Kim, Semi Jeon, Sangkeun Lee, Joonki Paik, Chung-Ang University

Image Retrieval I

Session Chair: Wengang Zhou, University of Science and Technology of China

TQ-PG.1 FUSING SHAPE AND MOTION MATRICES FOR VIEW INVARIANT ACTION RECOGNITION USING 3D SKELETONS
Mengyuan Liu, Qinqin He, Hong Liu, Peking University

TQ-PG.2 REGION BASED IMAGE RETRIEVAL WITH QUERY-ADAPTIVE FEATURE FUSION
Guixuan Zhang, Shuwu Zhang, Zhi Zeng, Hu Guan, Fangxin Wang, Institute of Automation, Chinese Academy of Sciences

TQ-PG.3 MULTI-VIEW NETWORK-BASED SOCIAL-TAGGED LANDMARK IMAGE CLUSTERING
So Yeon Kim, Kyung-Ah Sohn, Ajou University

TQ-PG.4 SKETCH BASED IMAGE RETRIEVAL VIA IMAGE-AIDED CROSS DOMAIN LEARNING
Jianjun Lei, Kaifu Zheng, Tianjin University; Hua Zhang, Xiaochun Cao, Chinese Academy of Sciences; Nam Ling, Santa Clara University; Yonghong Hou, Tianjin University

TQ-PG.5 SKETCH-BASED AERIAL IMAGE RETRIEVAL
Tianbi Jiang, Gui-Song Xia, Qikai Lu, Wuhan University

TQ-PG.6 LEARNING SUPERVISED BINARY HASHING: OPTIMIZATION VS DIVERSITY
Ramin Raziperchikolaei, Miguel Carreira-Perpinan, University of California, Merced

TQ-PG.7 LEARNING A CROSS-MODAL HASHING NETWORK FOR MULTIMEDIA SEARCH
Venice Erin Liong, Nanyang Technological University; Jiwen Lu, Tsinghua University; Yap-Peng Tan, Nanyang Technological University

TQ-PG.8 SELF-PACED LEAST SQUARE SEMI-COUPLED DICTIONARY LEARNING FOR PERSON RE-IDENTIFICATION
Wei Xu, Haoyuan Chi, Lei Zhou, Xiaolin Huang, Jie Yang, Shanghai Jiao Tong University

TQ-PG.9 ENHANCING FEATURE DISCRIMINATION FOR UNSUPERVISED HASHING
Tuan Hoang, Singapore University of Technology and Design; Thanh-Toan Do, The University of Adelaide; Dang-Khoa Le Tan, Ngai-Man Cheung, Singapore University of Technology and Design

TQ-PG.10 SUPERVISED HASHING WITH JOINTLY LEARNING EMBEDDING AND QUANTIZATION
Hao Zhu, 3M; Feng Wang, Xiang Xiang, Trac D. Tran, Johns Hopkins University

3D and Panoramic Video Coding

Session Chair: Hongkai Xiong, Shanghai Jiao Tong University

WA-L1.1 10:30 A NEW MOTION MODEL FOR PANORAMIC VIDEO CODING
Yefei Wang, University of Science and Technology of China; Li Li, University of Missouri-Kansas City; Dong Liu, Feng Wu, University of Science and Technology of China; Wen Gao, Peking University

WA-L1.2 10:50 CONTEXT-BASED OCTREE CODING FOR POINT-CLOUD VIDEO
Diogo Garcia, Ricardo de Queiroz, Universidade de Brasilia

WA-L1.3 11:10 MOTION-COMPENSATED COMPRESSION OF POINT CLOUD VIDEO
Ricardo De Queiroz, Universidade de Brasilia; Phil Chou, 8i Labs Inc.

WA-L1.4 11:30 3D MESH CODING WITH PREDEFINED REGION-OF-INTEREST
Jonas El Sayeh Khalil, Ghent University-IMEC; Adrian Munteanu, Vrije Universiteit Brussel; Peter Lambert, Ghent University-IMEC

WA-L1.5 11:50 PROJECTION BASED ADVANCED MOTION MODEL FOR CUBIC MAPPING FOR 360-DEGREE VIDEO
Li Li, Zhu Li, University of Missouri-Kansas City; Madhukar Budagavi, Samsung Research Institute; Houqiang Li, University of Science and Technology of China

WA-L1.6 12:10 VIRTUAL REALITY CONTENT STREAMING: VIEWPORT-DEPENDENT PROJECTION AND TILE-BASED TECHNIQUES
Alireza Zare, Alireza Aminlou, Miska Hannuksela, Nokia Technologies

Computational Image Formation & Reconstruction I

Session Chair: Lu Fang, Tsinghua University

WA-L2.1 10:30 VARIATIONAL FUSION OF TIME-OF-FLIGHT AND STEREO DATA USING EDGE SELECTIVE JOINT FILTERING
Baoliang Chen, Cheolkon Jung, Zhendong Zhang, Xidian University

WA-L2.2 10:50 OPTIMIZATION OF REGULARIZATION PARAMETER FOR SPARSE RECONSTRUCTION BASED ON PREDICTIVE RISK ESTIMATE
Feng Xue, National Key Laboratory of Science and Technology on Test Physics and Numerical Mathematics; Hanjie Pan, École polytechnique fédérale de Lausanne; Xin Liu, Hongyan Liu, Jiaqi Liu, National Key Laboratory of Science and Technology on Test Physics and Numerical Mathematics

WA-L2.3 11:10 GOOD GROUP SPARSITY PRIOR FOR LIGHT FIELD INTERPOLATION
Keita Takahashi, Shu Fujita, Toshiaki Fujii, Nagoya University

WA-L2.4 11:30 IMAGE FUSION VIA DYNAMIC GRADIENT SPARSITY AND ANISOTROPIC SPECTRAL-SPATIAL TOTAL VARIATION
Chao-Chao Zheng, Ting-Zhu Huang, Liang-Jian Deng, Xi-Le Zhao, Hong-Xia Dou, University of Electronic Science and Technology of China

WA-L2.5 11:50 ROBUST PHOTOMETRIC STEREO USING LEARNED IMAGE AND GRADIENT DICTIONARIES
Andrew Wagenmaker, Brian Moore, Raj Nadakuditi, University of Michigan

WA-L2.6 12:10 COMPARING OPTICAL TO DIGITAL METRICS: WHAT IS THE OPTIMAL DEFOCUS IN A ROTATIONALLY SYMMETRIC SYSTEM?
Javier Portilla, Sergio Barbero, Consejo Superior de Investigaciones Cientificas

Image Registration

Session Chair: Leandro A F Fernandes, Universidade Federal Fluminense

WA-L3.1 10:30 **WIDE-ANGLE IMAGE STITCHING USING MULTI-HOMOGRAPHY WARPING**
Bin Xu, Yunde Jia, Beijing Institute of Technology

WA-L3.2 10:50 **A TWO-STAGE MINIMUM SPANNING TREE (MST) BASED CLUSTERING ALGORITHM FOR 2D DEFORMABLE REGISTRATION OF TIME SEQUENCED IMAGES**
Baidya Nath Saha, Centro de Investigación en Matemáticas (CIMAT); Nilanjan Ray, University of Alberta; Sara McArdle, Klaus Ley, La Jolla Institute for Allergy & Immunology

WA-L3.3 11:10 **ROBUST FACE ALIGNMENT WITH CASCADED COARSE-TO-FINE AUTO-ENCODER NETWORK**
Cheng Peng, Yongxin Ge, Mingjian Hong, Sheng Huang, Dan Yang, Chongqing University

WA-L3.4 11:30 **REAL-TIME VIDEO STITCHING**
Shuo-Han Yeh, Shang-Hong Lai, National Tsing Hua University

WA-L3.5 11:50 **3D GEOREGISTRATION OF WIDE AREA MOTION IMAGERY BY COMBINING SFM AND CHAMFER ALIGNMENT OF VEHICLE DETECTIONS TO VECTOR ROADMAPS**
Li Ding, Ahmed Elliethy, Gaurav Sharma, University of Rochester

WA-L3.6 12:10 **ITERATIVE FITTING AFTER ELASTIC REGISTRATION: AN EFFICIENT STRATEGY FOR ACCURATE ESTIMATION OF PARAMETRIC DEFORMATIONS**
Xinxin Zhang, Christopher Gilliam, Thierry Blu, The Chinese University of Hong Kong

Image and Video Forensics I

Session Chair: Stefano Tubaro, Politecnico di Milano

WA-L4.1 10:30 **NEAR-DUPLICATE VIDEO DETECTION EXPLOITING NOISE RESIDUAL TRACES**
Silvia Lameri, Luca Bondi, Paolo Bestagini, Stefano Tubaro, Politecnico di Milano

WA-L4.2 10:50 **PROVENANCE FILTERING FOR MULTIMEDIA PHYLOGENY**
Allan Pinto, Daniel Moreira, University of Campinas; Aparna Bharati, Joel Brogan, Kevin Bowyer, Patrick Flynn, Walter Scheirer, University of Notre Dame; Anderson Rocha, University of Campinas

WA-L4.3 11:10 **RESIDUAL-BASED FORENSIC COMPARISON OF VIDEO SEQUENCES**
Patrick Mullan, Computer Science 1, University of Erlangen-Nuremberg; Davide Cozzolino, Luisa Verdoliva, DIETI, University of Federico II of Naples; Christian Riess, Computer Science 1, University of Erlangen-Nuremberg

WA-L4.4 11:30 **DETECTING ANTI-FORENSIC ATTACKS ON DEMOSAICING-BASED CAMERA MODEL IDENTIFICATION**
Chen Chen, Xinwei Zhao, Matthew C. Stamm, Drexel University

WA-L4.5 11:50 **U-PHYLOGENY: UNDIRECTED PROVENANCE GRAPH CONSTRUCTION IN THE WILD**
Aparna Bharati, Daniel Moreira, Allan Pinto, Joel Brogan, Kevin Bowyer, Patrick Flynn, Walter Scheirer, University of Notre Dame; Anderson Rocha, University of Campinas

WA-L4.6 12:10 **INPAINTING-BASED CAMERA ANONYMIZATION**
Sara Mandelli, Luca Bondi, Silvia Lameri, Vincenzo Lipari, Paolo Bestagini, Stefano Tubaro, Politecnico di Milano

Object Detection VII

Session Chair: Jiaying Liu, Peking University

WA-L5.1 10:30 **PROPAGATION BASED SALIENCY DETECTION FOR INFRARED PEDESTRIAN IMAGES**
Yu Zheng, Fugen Zhou, Lu Li, Xiangzhi Bai, Beihang University

WA-L5.2 10:50 **FOCUS PRIOR ESTIMATION FOR SALIENT OBJECT DETECTION**
Xiaoli Sun, Shenzhen University; Xiujun Zhang, Shenzhen Polytechnic; Wenbin Zou, Chen Xu, Shenzhen University

WA-L5.3 11:10 **INTEGRATED DEEP AND SHALLOW NETWORKS FOR SALIENT OBJECT DETECTION**
Jing Zhang, Northwestern Polytechnical University, Australian National University; Bo Li, Northwestern Polytechnical University; Yuchao Dai, Fatih Porikli, Australian National University; Mingyi He, Northwestern Polytechnical University

WA-L5.4 11:30 **ROBUST SYNTHETIC BASIS FEATURE DESCRIPTOR**
Lindsey Raven, Dah-Jye Lee, Brigham Young Univresity; Alok Desai, Cubic Scan

WA-L5.5 11:50 **ADAPTIVE CASCADE THRESHOLD LEARNING FROM NEGATIVE SAMPLES FOR DEFORMABLE PART MODELS**
Khoa Pho, Hung Vu, Bac Le, VNU HCMC, University of Science, Ho Chi Minh City

Video Analytics

Session Chair: Baoxin Li, Arizona State University

WA-L6.1 10:30 CASCADED TEMPORAL SPATIAL FEATURES FOR VIDEO ACTION RECOGNITION
Tingzhao Yu, Huxiang Gu, Lingfeng Wang, Shiming Xiang, Chunhong Pan, NLPR, Institute of Automation, Chinese Academy of Sciences

WA-L6.2 10:50 VISUAL AND TEXTUAL SENTIMENT ANALYSIS USING DEEP FUSION CONVOLUTIONAL NEURAL NETWORKS
Xingyue Chen, Yunhong Wang, Qingjie Liu, Beihang University

WA-L6.3 11:10 BI-DIRECTIONAL LONG SHORT-TERM MEMORY ARCHITECTURE FOR PERSON RE-IDENTIFICATION WITH MODIFIED TRIPLET EMBEDDING
Weilin Zhong, Huilin Xiong, Zhen Yang, Tao Zhang, Shanghai Jiao Tong University

WA-L6.4 11:30 DEEP DISCOVERY OF FACIAL MOTIONS USING A SHALLOW EMBEDDING LAYER
Afsaneh Ghasemi Ghaleh Bahmani, Mahsa Baktashmotlagh, Simon Denman, Sridha Sridharan, Dung Nguyen Tien, Clinton Fookes, Queensland University of Technology

WA-L6.5 11:50 EXPLOITING PROBABILISTIC RELATIONSHIPS BETWEEN ACTION CONCEPTS FOR COMPLEX EVENT CLASSIFICATION
Somayeh Keshavarz, Imran Saleemi, George George Atia, University of Central Florida

WA-L6.6 12:10 ABNORMAL EVENT DETECTION IN VIDEOS USING GENERATIVE ADVERSARIAL NETS
Mahdyar Ravanbakhsh, University of Genova; Moin Nabi, Enver Sangineto, University of Trento; Lucio Marcenaro, Carlo Regazzoni, University of Genova; Nicu Sebe, University of Trento

Deep networks for image classification

Session Chair: Dong Liu, University of Science and Technology of China

WA-L7.1 10:30 **FACE RECOGNITION BY LANDMARK POOLING-BASED CNN WITH CONCENTRATE LOSS**
Rui Huang, Xiaohua Xie, Zhanxiang Feng, Jianhuang Lai, Sun Yat-sen University

WA-L7.2 10:50 **AGE GROUP CLASSIFICATION IN THE WILD WITH DEEP ROR ARCHITECTURE**
Ke Zhang, Liru Guo, Ce Gao, Zhenbing Zhao, North China Electric Power University; Miao Sun, Xingfang Yuan, University of Missouri

WA-L7.3 11:10 **STACKING-BASED DEEP NEURAL NETWORK: DEEP ANALYTIC NETWORK ON CONVOLUTIONAL SPECTRAL HISTOGRAM FEATURES**
Cheng-Yaw Low, Andrew Beng-Jin Teoh, Yonsei University

WA-L7.4 11:30 **RESFEATS: RESIDUAL NETWORK BASED FEATURES FOR IMAGE CLASSIFICATION**
Ammar Mahmood, Mohammed Bennamoun, Senjian An, The University of Western Australia; Ferdous Sohel, Murdoch University

WA-L7.5 11:50 **GENDER CLASSIFICATION IN LIVE VIDEOS**
Jiale Chen, Sen Liu, Zhibo Chen, University of Science and Technology of China

WA-L7.6 12:10 **MORE FOR LESS: INSIGHTS INTO CONVOLUTIONAL NETS FOR 3D POINT CLOUD RECOGNITION**
Usama Shafiq, Murtaza Taj, LUMS Syed Babar Ali School of Science and Engineering; Mohsen Ali, Information Technology University

Computational Imaging

Session Co-Chairs: Jinli Suo, Tsinghua University; Jingyi Yu, Shanghai Tech University

WA-L8.1 10:30 **LIGHT FIELD SUPER-RESOLUTION USING INTERNAL AND EXTERNAL SIMILARITIES**
Zhiwei Xiong, Zhen Cheng, Jiayong Peng, Hanzhi Fan, Dong Liu, Feng Wu, University of Science and Technology of China

WA-L8.2 10:50 **ONLINE CONVOLUTIONAL DICTIONARY LEARNING FOR MULTIMODAL IMAGING**
Kevin Degraux, Universite Catholique de Louvain; Ulugbek Kamilov, Petros Boufounos, Dehong Liu, Mitsubishi Electric Research Laboratories

WA-L8.3 11:10 **VISIBILITY ENHANCEMENT OF FLUORESCENT SUBSTANCE UNDER AMBIENT ILLUMINATION USING FLASH PHOTOGRAPHY**
Misaki Meguro, Yuta Asano, Tokyo Institute of Technology; Yinqiang Zheng, Imari Sato, National Institute of Informatics

WA-L8.4 11:30 **MULTISPECTRAL FOCAL STACK ACQUISITION USING A CHROMATIC ABERRATION ENLARGED CAMERA**
Qian Huang, Yunqian Li, Linsen Chen, Nanjing University; Xiaoming Zhong, Beijing Institute of Space Mechanics and Electricity; Jinli Suo, Tsinghua University; Zhan Ma, Tao Yue, Xun Cao, Nanjing University

WA-L8.5 11:50 **LIGHT-FIELD FLOW: A SUBPIXEL-ACCURACY DEPTH FLOW ESTIMATION WITH GEOMETRIC OCCLUSION MODEL FROM A SINGLE LIGHT-FIELD IMAGE**
Wenhui Zhou, Pengfei Li, Hangzhou Dianzi University; Andrew Lumsdaine, Pacific Northwest Laboratory; Lili Lin, Zhejiang Gongshang University

WA-L8.6 12:10 **A FEW PHOTONS AMONG MANY: UNMIXING SIGNAL AND NOISE FOR PHOTON-EFFICIENT ACTIVE IMAGING**
Joshua Rapp, Vivek Goyal, Boston University

Up-sampling and Super-resolution

Session Chair: Yang Cao, University of Science and Technology of China

WA-L9.1 10:30 **REGULARIZED SELECTION: A NEW PARADIGM FOR INVERSE BASED REGULARIZED IMAGE RECONSTRUCTION TECHNIQUES**
Florentin Kucharczak, LIRMM; Cyril Mory, Creatis; Olivier Strauss, Comby Frederic, LIRMM; Denis Mariano-Goulart, CHRU Lapeyronie

WA-L9.2 10:50 **VIDEO SUPER-RESOLUTION USING MOTION COMPENSATION AND RESIDUAL BIDIRECTIONAL RECURRENT CONVOLUTIONAL NETWORK**
Dingyi Li, University of Science and Technology of China; Yu Liu, Hefei University of Technology; Zengfu Wang, Chinese Academy of Sciences

WA-L9.3 11:10 **DCT-BASED IMAGE UP-SAMPLING USING ANCHORED NEIGHBORHOOD REGRESSION**
Kwok-Wai Hung, Jianmin Jiang, Qinglong Chang, Xu Wang, Shenzhen University

WA-L9.4 11:30 **VARIATION LEARNING GUIDED CONVOLUTIONAL NETWORK FOR IMAGE INTERPOLATION**
Wenhan Yang, Jiaying Liu, Sifeng Xia, Zongming Guo, Peking University

WA-L9.5 11:50 **FACE HALLUCINATION USING REGION-BASED DEEP CONVOLUTIONAL NETWORKS**
Tao Lu, Hao Wang, Wuhan Institute of Technology; Zixiang Xiong, Texas A&M University; Junjun Jiang, China University of Geosciences; Yanduo Zhang, Huabing Zhou, Wuhan Institute of Technology; Zhongyuan Wang, Wuhan University

WA-L9.6 12:10 **DEPTH UPSAMPLING BY DEPTH PREDICTION**
Atsuhiko Tsuchiya, Daisuke Sugimura, Takayuki Hamamoto, Tokyo University of Science

Visual attention

Session Chair: Patrick Le Callet, Université de Nantes

WA-PA.1 FOVEATED NEURAL NETWORK: GAZE PREDICTION ON EGOCENTRIC VIDEOS
*Mengmi Zhang, National University of Singapore; Institute for Infocomm Research, Astar; Keng Teck Ma, Joo Hwee Lim, Institute for Infocomm Research, A*STAR; Qi Zhao, University of Minnesota*

WA-PA.2 A METHOD FOR RESIZING IMAGES BY CONTENT PERCEPTION
Anish Patankar, Joy Bose, Samsung R&D Institute India - Bangalore

WA-PA.3 SALIENCY-BASED CHANGE DETECTION FOR AERIAL AND REMOTE SENSING IMAGERIES
*Hui Li Tan, Shijian Lu, Institute for Infocomm Research, A*STAR*

WA-PA.4 DEEP MULTI-RESOLUTION COLOR CONSTANCY
Caglar Aytekin, Tampere University of Technology; Jarno Nikkanen, Intel Corporation; Moncef Gabbouj, Tampere University of Technology

WA-PA.5 AGE-DEPENDENT SACCADIC MODELS FOR PREDICTING EYE MOVEMENTS
Olivier Le Meur, University of Rennes 1; Antoine Coutrot, University College London; Adrien Le Roch, University of Rennes 1; Andrea Helo, University Paris Descartes, University de Chile, Santiago; Pia Rama, University Paris Descartes; Zhi Liu, Shanghai University

WA-PA.6 INDIVIDUAL TRAIT ORIENTED SCANPATH PREDICTION FOR VISUAL ATTENTION ANALYSIS
Aoqi Li, Zhenzhong Chen, Wuhan University

WA-PA.7 COMBINING GAZE AND DEMOGRAPHIC FEATURE DESCRIPTORS FOR AUTISM CLASSIFICATION
Shaun Canavan, Melanie Chen, Song Chen, Robert Valdez, Miles Yaeger, Huiyi Lin, Lijun Yin, Binghamton University

Image Restoration I

Session Chair: Shogo Muramatsu, Niigata University

WA-PB.1 KERNEL ESTIMATION FOR MOTION BLUR REMOVAL USING DEEP CONVOLUTIONAL NEURAL NETWORK
Yanan Lu, Institute of Software Chinese Academy of Sciences; Fengying Xie, Zhiguo Jiang, Beihang University

WA-PB.2 ARTGAN: ARTWORK SYNTHESIS WITH CONDITIONAL CATEGORICAL GANS
Wei Ren Tan, Shinshu University; Chee Seng Chan, University of Malaya; Hernan Aguirre, Kiyoshi Tanaka, Shinshu University

WA-PB.3 SPIKE AND SLAB VARIATIONAL INFERENCE FOR BLIND IMAGE DECONVOLUTION
Juan Gabriel Serra, Javier Mateos, Rafael Molina, Universidad de Granada; Aggelos K. Katsaggelos, Northwestern University

WA-PB.4 BLURRINESS-GUIDED UNSHARP MASKING
Wei Ye, Kai-Kuang Ma, Nanyang Technological University

WA-PB.5 HOGMEP: VARIATIONAL BAYES AND HIGHER-ORDER GRAPHICAL MODELS APPLIED TO JOINT IMAGE RECOVERY AND SEGMENTATION
Aurélie Pirayre, IFP Energies nouvelles; Yuling Zheng, IBM Research; Laurent Duval, IFP Energies nouvelles; Jean-Christophe Pesquet, CentraleSupélec

WA-PB.6 CROSS-SCALE COLOR IMAGE RESTORATION UNDER HIGH DENSITY SALT-AND-PEPPER NOISE
Zecheng He, Princeton University; Ketan Tang, DJI Innovation; Lu Fang, Tsinghua University

WA-PB.7 SUPERPIXEL-BASED IMAGE INPAINTING WITH SIMPLE USER GUIDANCE
Xin Zhang, Shandong University; Bernd Hamann, University of California, Davis; Xiao Pan, Caiming Zhang, Shandong University

WA-PB.8 LUCKY DCT AGGREGATION FOR CAMERA SHAKE REMOVAL
Sanjay Ghosh, Satyajit Naik, Kunal Chaudhury, Indian Institute of Science

Face Recognition

Session Chair: Jiwen Lu, Tsinghua University

WA-PC.1 OCCLUSION ROBUST FACE RECOGNITION BASED ON MASK LEARNING
Weitao Wan, Jiansheng Chen, Tsinghua University

WA-PC.2 AN EFFICIENT DEEP NEURAL NETWORKS TRAINING FRAMEWORK FOR ROBUST FACE RECOGNITION
Canping Su, Yan Yan, Xiamen University; Si Chen, Xiamen University of Technology; Hanzi Wang, Xiamen University

WA-PC.3 A NOVEL SRC BASED METHOD FOR FACE RECOGNITION WITH LOW QUALITY IMAGES
Shicheng Yang, Ying Wen, East China Normal University

WA-PC.4 CROSS-AGE FACE RECOGNITION USING REFERENCE CODING WITH KERNEL DIRECT DISCRIMINANT ANALYSIS
Haoshan Zou, Haifeng Hu, School of Electronic and Information Engineering, Sun Yat-sen University

WA-PC.5 LIGHT FIELD LOCAL BINARY PATTERNS DESCRIPTION FOR FACE RECOGNITION
Alireza Sepas-Moghaddam, Paulo Lobato Correia, Fernando Pereira, Instituto de Telecomunicações, Instituto Superior Técnico – Universidade de Lisboa

WA-PC.6 A STUDY OF CNN OUTSIDE OF TRAINING CONDITIONS
Gabriel Dahia, Matheus Santos, Maurício Pamplona Segundo, Federal University of Bahia

WA-PC.7 FACE RECOGNITION BY FACIAL ATTRIBUTE ASSISTED NETWORK
Jui-Shan Chan, Gee-Sern Hsu, Hung-Cheng Shie, Yan-Xiang Chen, National Taiwan University of Science and Technology

WA-PC.8 MULTI-DROPOUT REGRESSION FOR WIDE-ANGLE LANDMARK LOCALIZATION
Gee-Sern Hsu, Cheng-Hua Hsieh, National Taiwan University of Science and Technology

Biomedical image processing III

Session Chair: Jiasong Wu, Southeast University, China

WA-PD.1 A MULTI-DIRECTION IMAGE FUSION BASED APPROACH FOR CLASSIFICATION OF MULTI-FOCAL NEMATODE IMAGE STACKS
Min Liu, Xueping Wang, Hunan University; Hongzhong Zhang, Columbia University

WA-PD.2 A COMPARISON OF MODIFIED EVOLUTIONARY COMPUTATION ALGORITHMS WITH APPLICATIONS TO THREE-DIMENSIONAL ENDOSCOPIC CAMERA MOTION TRACKING
Xiongbiao Luo, Xiamen University; Ying Wan, Xiangjian He, University of Technology Sydney

WA-PD.3 MODELING STRUCTURAL DISSIMILARITY BASED ON SHAPE EMBODIMENT FOR CELL SEGMENTATION
Hyun-Gyu Lee, Adiba Orzikulova, Bo-Gyu Park, Sang-Chul Lee, Inha University

WA-PD.4 COMPLEMENTARY FEATURES FOR RADIOMIC ANALYSIS OF MALIGNANT AND BENIGN MEDIASTINAL LYMPH NODES
Tuan Pham, LInkoping University

WA-PD.5 KINETIC MEASURES FOR DISTINGUISHING VULNERABLE FROM STABLE ATHEROSCLEROTIC PLAQUE WITH DYNAMIC CONTRAST-ENHANCED MRI
Zengchang Qin, Yaping Wang, Wanshu Zhang, Beihang University; Jianhui Chen, No. 91 Central Hospital of PLA; Tao Wan, Beihang University

WA-PD.6 COMPARISON OF OBJECTIVE FUNCTIONS IN CNN-BASED PROSTATE MAGNETIC RESONANCE IMAGE SEGMENTATION
Juhyeok Mun, Won-Dong Jang, Deuk Jae Sung, Chang-Su Kim, Korea University

WA-PD.7 EFFICIENT SYMMETRY-DRIVEN FULLY CONVOLUTIONAL NETWORK FOR MULTIMODAL BRAIN TUMOR SEGMENTATION
Haocheng Shen, Jianguo Zhang, University of Dundee; Weishi Zheng, Sun Yat-sen University

Image and Video Segmentation III

Session Chair: Yie-Tarng Chen, National Taiwan University of Science and Technology

WA-PE.1 SSGD: SUPERPIXELS USING THE SHORTEST GRADIENT DISTANCE
Ning Zhang, Lin Zhang, Tongji University

WA-PE.2 EVALUATING THE QUALITY OF BINARY PARTITION TREES BASED ON UNCERTAIN SEMANTIC GROUND-TRUTH FOR IMAGE SEGMENTATION
Jimmy Francky Randrianasoa, Université de Reims Champagne-Ardenne; Camille Kurtz, Université Paris-Descartes (Sorbonne Paris Cité); Pierre Gançarski, Université de Strasbourg; Eric Desjardin, Nicolas Passat, Université de Reims Champagne-Ardenne

WA-PE.3 GRAIN SEGMENTATION OF MULTI-ANGLE PETROGRAPHIC THIN SECTION MICROSCOPIC IMAGES
Feng Jiang, Qing Gu, Huizhen Hao, Na Li, Nanjing University

WA-PE.4 PLANT LEAF SEGMENTATION FOR ESTIMATING PHENOTYPIC TRAITS
Yuhao Chen, Javier Ribera, Christopher Boomsma, Edward Delp, Purdue University

WA-PE.5 COLOR REDUCTION BASED ON HUMAN CATEGORICAL PERCEPTION
Robert Laganiere, Di Pang, University of Ottawa; Ahmad Al-Kabbany, Arab Academy for Science and Technology

WA-PE.6 A CRITICAL ANALYSIS OF THE METHODS OF EVALUATING MRI BRAIN SEGMENTATION ALGORITHMS
Fábio Augusto Menocci Cappabianco, Federal University of Sao Paulo; Paulo André Vechiatto de Miranda, University of São Paulo; Jayaram Udupa, University of Pennsylvania

WA-PE.7 INTERACTIVE FAULT EXTRACTION IN 3-D SEISMIC DATA USING THE HOUGH TRANSFORM AND TRACKING VECTORS
Zhen Wang, Ghassan AlRegib, Georgia Institute of Technology

Deep Learning and Neural Networks

Session Chair: Matthew Kyan, York University

WA-PF.1 LEARNING AUTOENCODERS WITH LOW-RANK WEIGHTS
Kavya Gupta, TCS; Angshul Majumdar, Indraprastha Institute of Information Technology Delhi

WA-PF.2 MULTI-SCALE 3D DEEP CONVOLUTIONAL NEURAL NETWORK FOR HYPERSPECTRAL IMAGE CLASSIFICATION
Mingyi He, Bo Li, Huahui Chen, Northwestern Polytechnical University

WA-PF.3 LANDMARK BASED HEAD POSE ESTIMATION BENCHMARK AND METHOD
Philipp Werner, Frerk Saxen, Ayoub Al-Hamadi, University of Magdeburg

WA-PF.4 RETRAIN-FREE FULLY CONNECTED LAYER OPTIMIZATION USING MATRIX FACTORIZATION
Yi Sun, Xuejiao Liu, Luhong Liang, Hong Kong Applied Science and Technology Research Institute (ASTRI)

WA-PF.5 CONVOLUTIONAL NEURAL NETWORKS AND TRAINING STRATEGIES FOR SKIN DETECTION
Yoonsik Kim, Insung Hwang, Nam Ik Cho, Seoul National University

WA-PF.6 HYPER-PARAMETER OPTIMIZATION FOR CONVOLUTIONAL NEURAL NETWORK COMMITTEES BASED ON EVOLUTIONARY ALGORITHMS
Erik Bochinski, Tobias Senst, Thomas Sikora, Technische Universität Berlin

WA-PF.7 TOWARDS 3D CONVOLUTIONAL NEURAL NETWORKS WITH MESHES
Miguel Dominguez, Felipe Petroski Such, Shagan Sah, Raymond Ptucha, Rochester Institute of Technology

WA-PF.8 DEEP ACTIVE LEARNING FOR IMAGE CLASSIFICATION
Hiranmayi Ranganathan, Hemanth Venkateswara, Shayok Chakraborty, Panchanathan Sethuraman, Arizona State University

WA-PF.9 TOWARDS THINNER CONVOLUTIONAL NEURAL NETWORKS THROUGH GRADUALLY GLOBAL PRUNING
Zhengtao Wang, Ce Zhu, Zhiqiang Xia, Qi Guo, Yipeng Liu, University of Electronic Science and Technology of China

WA-PF.10 COMPUTED TOMOGRAPHY SUPER-RESOLUTION USING CONVOLUTIONAL NEURAL NETWORKS
Haichao Yu, Ding Liu, Honghui Shi, Hanchao Yu, Beckman Institute, University of Illinois at Urbana-Champaign; Zhangyang Wang, Texas A&M University; Xinchao Wang, Beckman Institute, University of Illinois at Urbana-Champaign; Brent Cross, Matthew Bramlet, Jump Trading Simulation and Education Center; Thomas Huang, Beckman Institute, University of Illinois at Urbana-Champaign

WA-PF.11 IMAGE-BASED AIR QUALITY ANALYSIS USING DEEP CONVOLUTIONAL NEURAL NETWORK
Avijoy Chakma, Ben Vizena, Tingting Cao, Jerry Lin, Jing Zhang, Lamar University

WA-PF.12 BETTER THAN REAL: COMPLEX-VALUED NEURAL NETS FOR MRI FINGERPRINTING
Patrick Virtue, University of California, Berkeley; Stella X. Yu, University of California, Berkeley / International Computer Science Institute; Michael Lustig, University of California, Berkeley

Image Retrieval II

Session Chair: Wengang Zhou, University of Science and Technology of China

WA-PG.1 CHAM: ACTION RECOGNITION USING CONVOLUTIONAL HIERARCHICAL ATTENTION MODEL
Shiyang Yan, Xi'an Jiaotong-Liverpool University; Jeremy S. Smith, University of Liverpool; Wenjin Lu, Bailing Zhang, Xi'an Jiaotong-Liverpool University

WA-PG.2 MULTI-VIEW HUMAN ACTIVITY RECOGNITION USING MOTION FREQUENCY
Neslihan Köse, Mohammadreza Babaee, Gerhard Rigoll, Institute for Human-Machine Communication, TU Munich

WA-PG.3 FEATURE SAMPLING STRATEGIES FOR ACTION RECOGNITION
Youjie Zhou, Hongkai Yu, Song Wang, University of South Carolina

WA-PG.4 FAST AND RELIABLE HUMAN ACTION RECOGNITION IN VIDEO SEQUENCES BY SEQUENTIAL ANALYSIS
Hui Fang, Edge Hill University; Jeyarajan Thiyagalingam, University of Liverpool; Nik Bessis, Edge Hill University; Eran Edirisinghe, Loughborough University

WA-PG.5 IMAGE RETRIEVAL BASED ON LRGA ALGORITHM AND RELEVANCE FEEDBACK FOR INSECT IDENTIFICATION
Susumu Genma, Takahiro Ogawa, Miki Haseyama, Hokkaido University

WA-PG.6 MULTI-VIEW VISUAL SPEECH RECOGNITION BASED ON MULTI TASK LEARNING
HouJeung Han, Sunghun Kang, Chang D. Yoo, Korea Advanced institute of Science and Technology

WA-PG.7 ACCELERATING SPECTRAL UNMIXING BY USING CLUSTERED IMAGES
Sebastian Bauer, Eric Winterbauer, Fernando Puente León, Karlsruhe Institute of Technology

WA-PG.8 EXTRACTING KEY FRAMES FROM FIRST-PERSON VIDEOS IN THE COMMON SPACE OF MULTIPLE SENSORS
Yujie Li, National Institute of Advanced Industrial Science and Technology; Atsunori Kanemura, National Institute of Advanced Industrial Science and Technology (AIST), Advanced Telecommunications Research Institute International (ATR); Hideki Asoh, National Institute of Advanced Industrial Science and Technology; Taiki Miyanishi, Motoaki Kawanabe, Advanced Telecommunications Research Institute International (ATR)

WA-PG.9 LEARNING DEEP AND COMPACT MODELS FOR GESTURE RECOGNITION
Koustav Mullick, Anoop M. Namboodiri, International Institute of Information Technology

WA-PG.10 CONTENT ADAPTIVE VIDEO SUMMARIZATION USING SPATIO-TEMPORAL FEATURES
Hyunwoo Nam, Chang D. Yoo, Korea Advanced Institute of Science and Technology

Image Coding II

Session Chair: Jens-Rainer Ohm, RWTH Aachen University

WP-L1.1 14:00 **A NOVEL SATD BASED FAST INTRA PREDICTION FOR HEVC**
Jiawen Gu, Minhao Tang, Jiangtao Wen, Tsinghua University; Hao Zhang, Central South University

WP-L1.2 14:20 **HYPERSPECTRAL IMAGE CODING USING GRAPH WAVELETS**
Jin Zeng, The Hong Kong University of Science and Technology; Gene Cheung, National Institute of Informatics; Yung-Hsuan Chao, University of Southern California; Ian Blanes, Joan Serra-Sagristà, Universitat Autònoma de Barcelona; Antonio Ortega, University of Southern California

WP-L1.3 14:40 **A GRAPH LAPLACIAN MATRIX LEARNING METHOD FOR FAST IMPLEMENTATION OF GRAPH FOURIER TRANSFORM**
Keng-Shih Lu, Antonio Ortega, University of Southern California

WP-L1.4 15:00 **GRAPH FOURIER TRANSFORM WITH NEGATIVE EDGES FOR DEPTH IMAGE CODING**
Weng-Tai Su, National Tsing Hua University; Cheung Gene, National Institute of Informatics; Chia-Wen Lin, National Tsing Hua University

WP-L1.5 15:20 **LAYERED-GIVENS TRANSFORMS: TUNABLE COMPLEXITY, HIGH-PERFORMANCE APPROXIMATION OF OPTIMAL NON-SEPARABLE TRANSFORMS**
Bohan Li, University of California, Santa Barbara; Onur G. Guleryuz, LG Electronics; Jana Ehmann, Google Inc.; Arash Vosoughi, Sony Electronics

WP-L1.6 15:40 **FAST TEMPLATE MATCHING FOR INTRA PREDICTION**
Gayathri Venugopal, Philipp Merkle, Detlev Marpe, Thomas Wiegand, Fraunhofer Institute for Telecommunications, Heinrich Hertz Institute

Computational Imaging III

Session Chair: Vivek Goyal, Boston University

WP-L2.1 14:00 **SUBPROBLEM COUPLING IN CONVOLUTIONAL DICTIONARY LEARNING**
Cristina Garcia-Cardona, Brendt Wohlberg, Los Alamos National Laboratory

WP-L2.2 14:20 **COMPRESSIVE IMAGE RECOVERY USING RECURRENT GENERATIVE MODEL**
Akshat Dave, Anil Kumar Vadathya, Kaushik Mitra, Indian Institute of Technology Madras

WP-L2.3 14:40 **ONLINE CONVOLUTIONAL DICTIONARY LEARNING**
Jialin Liu, University of California, Los Angeles; Cristina Garcia-Cardona, Brendt Wohlberg, Los Alamos National Laboratory; Wotao Yin, University of California, Los Angeles

WP-L2.4 15:00 **PTYCHNET : CNN BASED FOURIER PTYCHOGRAPHY**
Armin Kappeler, Yahoo Inc.; Sushobhan Ghosh, Northwestern University; Jason Holloway, Columbia University; Oliver Cossairt, Aggelos K. Katsaggelos, Northwestern University

WP-L2.5 15:20 **DEPTH PREDICTION FROM A SINGLE IMAGE WITH CONDITIONAL ADVERSARIAL NETWORKS**
Hyungjoo Jung, Youngjung Kim, Yonsei University; Dongbo Min, Cungnam National University; Changjae Oh, Kwanghoon Sohn, Yonsei University

WP-L2.6 15:40 **MULTIGAP: MULTI-POOLED INCEPTION NETWORK WITH TEXT AUGMENTATION FOR AESTHETIC PREDICTION OF PHOTOGRAPHS**
Yong-Lian Hii, John See, Magzhan Kairanbay, Lai-Kuan Wong, Multimedia University

Biomedical Image Segmentation I

Session Chair: Chunming Li, University of Electronic Science and Technology of China

WP-L3.1 14:00 **FULLY CONNECTED CRF WITH DATA-DRIVEN PRIOR FOR MULTI-CLASS BRAIN TUMOR SEGMENTATION**
Haocheng Shen, Jianguo Zhang, University of Dundee

WP-L3.2 14:20 **SEGMENTATION OF DERMOSCOPY IMAGES BASED ON FULLY CONVOLUTIONAL NEURAL NETWORK**
Zilin Deng, Haidi Fan, Fengying Xie, Beihang University; Yong Cui, China-Japanese Friendship Hospital; Jie Liu, Chinese Academy of Medical Sciences and Peking Union Medical College

WP-L3.3 14:40 **MASS SEGMENTATION IN MAMMOGRAMS: A CROSS-SENSOR COMPARISON OF DEEP AND TAILORED FEATURES**
Jaime Cardoso, INESC TEC and University of Porto; Nuno Marques, INESC TEC; Neeraj Dhungel, The University of British Columbia; Gustavo Carneiro, ACVT, The University of Adelaide; Andrew Bradley, ITEE, The University of Queensland

WP-L3.4 15:00 **PATCH-BASED FULLY CONVOLUTIONAL NEURAL NETWORK WITH SKIP CONNECTIONS FOR RETINAL BLOOD VESSEL SEGMENTATION**
Zhongwei Feng, Jie Yang, Lixiu Yao, Shanghai Jiao Tong University

WP-L3.5 15:20 **FAST AND ACCURATE SEGMENTATION OF THE LV IN MR VOLUMES USING A DEFORMABLE MODEL WITH DYNAMIC PROGRAMMING**
Carlos Santiago, Jacinto C. Nascimento, Jorge S. Marques, Instituto Superior Técnico

WP-L3.6 15:40 **INNER CELL MASS SEGMENTATION IN HUMAN HMC EMBRYO IMAGES USING FULLY CONVOLUTIONAL NETWORK**
Shakiba Kheradmand, Simon Fraser University; Amarjot Singh, University of Cambridge; Parvaneh Saeedi, Simon Fraser University; Jason Au, Jon Havelock, Pacific Center for Reproductive Medicine

Object Recognition and Classification

Session Chair: Rongrong Ji, Xiamen University

WP-L5.1 14:00 **FACIAL EXPRESSION RECOGNITION USING SVM CLASSIFICATION ON MIC-MACRO PATTERNS**
Housam Khalifa Bashier Babiker, Randy Goebel, Irene Cheng, University of Alberta

WP-L5.2 14:20 **A MULTI-TASK CONVOLUTIONAL NEURAL NETWORK WITH SPATIAL TRANSFORM FOR PARKING SPACE DETECTION**
Hoang Tran Vu, Ching-Chun Huang, National Chung Cheng University

WP-L5.3 14:40 **DEEP LEARNING PROTOTYPE DOMAINS FOR PERSON RE-IDENTIFICATION**
Arne Schumann, Fraunhofer Institute of Optronics, System Technologies and Image Exploitation; Shaogang Gong, Queen Mary University of London; Tobias Schuchert, Fraunhofer Institute of Optronics, System Technologies and Image Exploitation

WP-L5.4 15:00 **PART-BASED CONVOLUTIONAL NEURAL NETWORK FOR VISUAL RECOGNITION**
Lingxiao Yang, The Hong Kong Polytechnic University; Xiaohua Xie, Sun Yat-sen University; Peihua Li, Dalian University of Technology; David Zhang, Lei Zhang, The Hong Kong Polytechnic University

WP-L5.5 15:20 **3D CONVOLUTIONAL NEURAL NETWORKS BY MODAL FUSION**
Yusuke Yoshiyasu, AIST; Soeren Pirk, Leonidas Guibas, Stanford University; Eiichi Yoshida, AIST

WP-L5.6 15:40 **ROBUST FACE RECOGNITION BASED ON ITERATIVE SPARSE CODING AND PIXEL SELECTION**
Lina Lian, Huicheng Zheng, Jiayu Dong, Sun Yat-sen University

Scene Analysis

Session Chair: Ghassan AlRegib, Georgia Institute of Technology

WP-L6.1 14:00 **EFFECT OF WAVELET AND HYBRID CLASSIFICATION ON ACTION RECOGNITION**
Eman Mohammadi, Jonathan Wu, Yimin Yang, Mehrdad Saif, University of Windsor

WP-L6.2 14:20 **A STATISTIC MANIFOLD KERNEL WITH GRAPH EMBEDDING DISCRIMINANT ANALYSIS FOR ACTION AND EXPRESSION RECOGNITION**
Shuanglu Dai, Hong Man, Stevens Institute of Technology

WP-L6.3 14:40 **GRADED: A GRAPH-BASED PARAMETRIC DICTIONARY LEARNING ALGORITHM FOR EVENT DETECTION**
Tamal Batabyal, Rituparna Sarkar, Scott T. Acton, University of Virginia

WP-L6.4 15:00 **AUDIO-VISUAL ATTENTION: EYE-TRACKING DATASET AND ANALYSIS TOOLBOX**
Pierre Marighetto, Université de Mons; Antoine Coutrot, University College London; Nicolas Riche, Université de Mons; Nathalie Guyader, Université de Grenoble; Matei Mancas, Bernard Gosselin, Université de Mons; Robert Laganiere, University of Ottawa

WP-L6.5 15:20 **ENHANCED TRAJECTORY-BASED ACTION RECOGNITION USING HUMAN POSE**
Konstantinos Papadopoulos, Michel Antunes, Djamila Aouada, Björn Ottersten, University of Luxembourg

WP-L6.6 15:40 **4D EFFECT CLASSIFICATION BY ENCODING CNN FEATURES**
Thomhert S. Siadari, Korea University of Science and Technology; Mikyong Han, Electronics and Telecommunications Research Institute; Hyunjin Yoon, Korea Unversity of Science and Technology, Electronics and Telecommunications Research Institute

Deep learning for image and video analysis

Session Chair: Bilge Gunsel, Istanbul Technical University

WP-L7.1 14:00 **CLUSTER CONVOLUTIONAL NEURAL NETWORKS FOR FACIAL AGE ESTIMATION**
Chong Shang, Haizhou Ai, Tsinghua University

WP-L7.2 14:20 **GREEDY DEEP TRANSFORM LEARNING**
Jyoti Maggu, Angshul Majumdar, Indraprastha Institute of Information Technology Delhi

WP-L7.3 14:40 **APPEARANCE AND MOTION BASED DEEP LEARNING ARCHITECTURE FOR MOVING OBJECT DETECTION IN MOVING CAMERA**
Byeongho Heo, Seoul National University; Kimin Yun, Electronics and Telecommunications Research Institute; Jin Young Choi, Seoul National University

WP-L7.4 15:00 **COMPRESSED-DOMAIN VIDEO CLASSIFICATION WITH DEEP NEURAL NETWORKS: "THERE'S WAY TOO MUCH INFORMATION TO DECODE THE MATRIX"**
Aaron Chadha, Alhabib Abbas, University College London; Yiannis Andreopoulos, Dithen

WP-L7.5 15:20 **3D CONVOLUTIONAL NEURAL NETWORK WITH MULTI-MODEL FRAMEWORK FOR ACTION RECOGNITION**
Longlong Jing, Yuancheng Ye, The Graduate Center of City University of New York; Xiaodong Yang, Nvidia Research; Yingli Tian, The City College, City University of New York

WP-L7.6 15:40 **A CASCADED LONG SHORT-TERM MEMORY (LSTM) DRIVEN GENERIC VISUAL QUESTION ANSWERING (VQA)**
Iqbal Chowdhury, Kien Nguyen, Clinton Fookes, Sridha Sridharan, Queensland University of Technology

Real-world Visual Content Modeling and Understanding for Unmanned Systems

Session Co-Chairs: C. L. Philip Chen, University of Macau; Hamid Sheikh, Samsung; Guang-Bin Huang, Nanyang Technological University; Chenwei Deng, Beijing Institute of Technology

WP-L8.1 14:00 **SHALLOW AND DEEP CONVOLUTIONAL NETWORKS FOR IMAGE SUPER-RESOLUTION**
Ru Fan, Sumei Li, Guoqing Lei, Guanghui Yue, Tianjin University

WP-L8.2 14:20 **REDUCED-REFERENCE QUALITY METRIC FOR SCREEN CONTENT IMAGE**
Zhaohui Che, Guangtao Zhai, Shanghai Jiao Tong University; Ke Gu, Beijing University of Technology; Patrick Le Callet, Université de Nantes

WP-L8.3 14:40 **ELMNET: FEATURE LEARNING USING EXTREME LEARNING MACHINES**
Dongshun Cui, Guang-Bin Huang, L.L. Chamara Kasun, Guanghao Zhang, Wei Han, Nanyang Technological University

WP-L8.4 15:00 **FROM FOOT TO HEAD: ACTIVE FACE FINDING USING DEEP Q-LEARNING**
Hui Zhang, Huaping Liu, Di Guo, Fuchun Sun, Tsinghua University

WP-L8.5 15:20 **ADAPTIVE FEATURE REPRESENTATION FOR VISUAL TRACKING**
Yuqi Han, Chenwei Deng, Zengshuo Zhang, Jiatong Li, Baojun Zhao, Beijing Key Laboratory of Embedded Real-time Information Processing Technique

WP-L8.6 15:40 **STABLE AND IMPROVED GENERATIVE ADVERSARIAL NETS (GANS): A CONSTRUCTIVE SURVEY**
Guanghao Zhang, Enmei Tu, Dongshun Cui, Nanyang Technology University

Image Denoising II

Session Co-Chairs: Alessandro Foi, Tampere University of Technology; Yuping DUAN, Tianjin University

WP-L9.1 14:00 **CORRELATION PRESERVING ON GRAPHS FOR IMAGE DENOISING**
Rui Chen, Huizhu Jia, Xiaodong Xie, Wen Gao, Peking University

WP-L9.2 14:20 **FOVEATED NONLOCAL DUAL DENOISING**
Tao Dai, Tsinghua University; Ke Gu, Beijing University of Technology; Qingtao Tang, Tsinghua University; Kwok-Wai Hung, Shenzhen University; Yongbing Zhang, Weizhi Lu, Shu-Tao Xia, Tsinghua University

WP-L9.3 14:40 **FAST DE-STREAKING METHOD USING PLAIN NEURAL NETWORK**
Yuxiang Li, Ecole polytechnique; Bo Zhang, Raoul Florent, Philips Research

WP-L9.4 15:00 **NON-LOCAL SIMILARITY BASED TENSOR DECOMPOSITION FOR HYPERSPECTRAL IMAGE DENOISING**
Fan Xu, Xiao Bai, Beihang University; Jun Zhou, Griffith University

WP-L9.5 15:20 **DEEP CLASS-AWARE IMAGE DENOISING**
Tal Remez, Or Litany, Raja Giryes, Tel-Aviv University; Alex M. Bronstein, Technion - IIT

WP-L9.6 15:40 **HYPERSPECTRAL IMAGE DENOISING BASED ON GLOBAL AND NON-LOCAL LOW-RANK FACTORIZATIONS**
Lina Zhuang, José M. Bioucas-Dias, Instituto de Telecomunicações, Instituto Superior Técnico – Universidade de Lisboa

Stereoscopic, multiview and 3-D coding

Session Chair: Jiangtao Wen, Tsinghua University

WP-PA.1 LENSLET IMAGE COMPRESSION USING ADAPTIVE MACROPIXEL PREDICTION
Haixu Han, Xin Jin, Qionghai Dai, Tsinghua University

WP-PA.2 FAST POINT CLOUD COMPRESSION VIA REVERSIBLE CELLULAR AUTOMATA BLOCK TRANSFORM
Simone Milani, University of Padova

WP-PA.3 DEPTH MODELLING MODE DECISION FOR DEPTH INTRA CODING VIA GOOD FEATURE
Chang-Hong Fu, Ya-Wen Zhao, Hong-Bin Zhang, Nanjing University of Science and Technology; Yui-Lam Chan, Wan-Chi Siu, The Hong Kong Polytechnic University

WP-PA.4 GRAPH-BASED LIGHT FIELDS REPRESENTATION AND CODING USING GEOMETRY INFORMATION
Xin Su, Mira Rizkallah, Thomas Maugey, Christine Guillemot, Centre INRIA Rennes – Bretagne Atlantique

WP-PA.5 HEVC-BASED COMPRESSION OF HIGH BIT-DEPTH 3D SEISMIC DATA
Miloš Radosavljevic, University of Novi Sad; Zixiang Xiong, Texas A&M University; Ligang Lu, Detlef Hohl, Shell International Exploration and Production Inc.; Dejan Vukobratovic, University of Novi Sad

WP-PA.6 COMPRESSION OF 3-D POINT CLOUDS USING HIERARCHICAL PATCH FITTING
Robert Cohen, Mitsubishi Electric Research Laboratories; Maja Krivokuca, 8i; Chen Feng, Yuichi Taguchi, Hideaki Ochimizu, Dong Tian, Anthony Vetro, Mitsubishi Electric Research Laboratories

Interpolation, Super-resolution, and Mosaicing I

Session Chair: Zhi Liu, Shanghai University

WP-PB.1 ITERATIVE CONVOLUTIONAL NEURAL NETWORK FOR NOISY IMAGE SUPER-RESOLUTION
Wenbo Bao, Xiaoyun Zhang, Shangpeng Yan, Zhiyong Gao, Shanghai Jiao Tong University

WP-PB.2 DEPTH MAP SUPER-RESOLUTION USING NON-LOCAL HIGHER-ORDER REGULARIZATION WITH CLASSIFIED WEIGHTS
Hai-Tao Zhang, Jun Yu, Zeng-Fu Wang, University of Science and Technology of China

WP-PB.3 BLIND HYPERSPECTRAL IMAGE SUPER RESOLUTION VIA SIMULTANEOUSLY SPARSE AND TV CONSTRAINT
Changzhong Zou, Youshen Xia, Fuzhou university

WP-PB.4 BYNET-SR: IMAGE SUPER RESOLUTION WITH A BYPASS CONNECTION NETWORK
Jiu Xu, Yeongnam Chae, Bjorn Stenger, Rakuten

WP-PB.5 CONVEX DICTIONARY LEARNING FOR SINGLE IMAGE SUPER-RESOLUTION
Pak Lun Kevin Ding, Arizona State University; Kan Chang, Guangxi University; Baoxin Li, Arizona State University

WP-PB.6 SINGLE DEPTH IMAGE SUPER-RESOLUTION AND DENOISING BASED ON SPARSE GRAPHS VIA STRUCTURE TENSOR
Yihui Feng, Tsinghua University; Xianming Liu, Harbin Institute of Technology; Yongbing Zhang, Qionghai Dai, Tsinghua University

WP-PB.7 IMAGE GUIDED DEPTH ENHANCEMENT VIA DEEP FUSION AND LOCAL LINEAR REGULARIZATION
Jiang Zhu, Jing Zhang, Yang Cao, Zengfu Wang, University of Science and Technology of China

WP-PB.8 CNN-BASED PRE-PROCESSING AND MULTI-FRAME-BASED VIEW TRANSFORMATION FOR FISHEYE CAMERA-BASED AVM SYSTEM
Dong Yoon Choi, Ji Hoon Choi, Inha University; Jin Wook Choi, Hyundai Motor Company; Byung Cheol Song, Inha University

Image and Video Forensics II

Session Chair: Siwei Lyu, University at Albany, State University of New York

WP-PC.1 SPOTTING THE DIFFERENCE: CONTEXT RETRIEVAL AND ANALYSIS FOR IMPROVED FORGERY DETECTION AND LOCALIZATION
Joel Brogan, University of Notre Dame; Paolo Bestagini, Politecnico di Milano; Aparna Bharati, Allan Pinto, Daniel Moreira, Kevin Bowyer, Patrick Flynn, Anderson Rocha, Walter Scheirer, University of Notre Dame

WP-PC.2 COPY MOVE FORGERY DETECTION WITH SIMILAR BUT GENUINE OBJECTS
Aniket Roy, Akhil Konda, Rajat Subhra Chakraborty, Indian Institute of Technology Kharagpur

WP-PC.3 FAST CAMERA FINGERPRINT MATCHING IN VERY LARGE DATABASES
Samet Taspinar, PhD student at NYUAD; Husrev Taha Sencar, TOBB University; Sevinc Bayram, Hitachi Europe Ltd; Nasir Memon, New York University

WP-PC.4 IDENTIFYING PHOTOREALISTIC COMPUTER GRAPHICS USING CONVOLUTIONAL NEURAL NETWORKS
In-Jae Yu, Do-Guk Kim, Jin-Seok Park, Jong-Uk Hou, Sunghee Choi, Heung-Kyu Lee, Korea Advanced Institute of Science and Technology

WP-PC.5 AUGMENTED CONVOLUTIONAL FEATURE MAPS FOR ROBUST CNN-BASED CAMERA MODEL IDENTIFICATION
Belhassen Bayar, Matthew C. Stamm, Drexel University

WP-PC.6 IMAGE FILTER IDENTIFICATION USING DEMOSAICING RESIDUAL FEATURES
Chen Chen, Matthew C. Stamm, Drexel University

WP-PC.7 SENSOR PATTERN NOISE ESTIMATION USING PROBABILISTICALLY ESTIMATED RAW VALUES
Ambuj Mehrish, A V Subramanyam Subramanyam, Indraprastha Institute of Information Technology Delhi; Sabu Emmanuel, Kuwait university

Computational Imaging System I

Session Chair: Zhiwei Xiong, University of Science and Technology of China

WP-PD.1 MICROSTRUCTURE ANALYSIS OF SILK SAMPLES USING MUELLER MATRIX DETERMINATION AND SPARSE REPRESENTATION
Xiaomin Zhang, Fei Zhou, Yang Dong, Hui Ma, Qingmin Liao, Tsinghua University

WP-PD.2 CSMSDL: A COMMON SEQUENTIAL DICTIONARY LEARNING ALGORITHM FOR MULTI-SUBJECT FMRI DATA SETS ANALYSIS
Abd-Krim Seghouane, Asif Iqbal, The University of Melbourne

WP-PD.3 IN-BED PATIENT MOTION AND POSE ANALYSIS USING DEPTH VIDEOS FOR PRESSURE ULCER PREVENTION
Ming-Ching Chang, Ting Yu, Kun Duan, Jiajia Luo, Peter Tu, GE Global Research Center; Michael Priebe, Elena Wood, Max Stachura, Charlie Norwood VA Medical Center

WP-PD.4 RECONSTRUCTION OF RESPIRATORY-BINNED CARDIAC SPECT USING A ROBUST SMOOTHING PRIOR
Chao Song, Yongyi Yang, Miles Wernick, Illinois Institute of Technology; Hendrik Pretorius, Michael King, University of Massachusetts Medical School

WP-PD.5 TIME SAMPLES SELECTION IN SPIRAL ACQUISITION FOR SPARSE MAGNETIC RESONANCE SPECTROSCOPIC IMAGING
Jabrane Karkouri, Siemens Healthineers; Fabien Millioz, Magalie Viallon, Rémy Prost, Hélène Ratiney, CREATIS Universite Claude Bernard Lyon 1

WP-PD.6 ACCURATE HEART-RATE ESTIMATION FROM FACE VIDEOS USING QUALITY-BASED FUSION
Puneet Gupta, Brojeshwar Bhowmick, Arpan Pal, TCS Research Lab, KolKata

WP-PD.7 AIR-WRITING RECOGNITION USING REVERSE TIME ORDERED STROKE CONTEXT
Tsung-Hsien Tsai, Jun-Wei Hsieh, National Taiwan Ocean University

Texture Analysis

Session Chair: Ghassan AlRegib, Georgia Institute of Technology

WP-PE.1 MULTI-VIEW DEEP METRIC LEARNING FOR IMAGE CLASSIFICATION
Dewei Li, Jingjing Tang, University of Chinese Academy of Sciences; Yingjie Tian, Chinese Academy of Sciences; Xuchan Ju, Tsinghua University

WP-PE.2 TRAJECTORIES-BASED MOTION NEIGHBORHOOD FEATURE FOR HUMAN ACTION RECOGNITION
Xiang Xiao, Haifeng Hu, Weixuan Wang, School of Electronic and Information Engineering, Sun Yat-sen University

WP-PE.3 DYNAMIC TEXTURE RECOGNITION USING MULTISCALE PCA-LEARNED FILTERS
Xiaochao Zhao, Yaping Lin, Hunan University; Janne Heikkila, University of Oulu

WP-PE.4 KERNEL GENERALIZED GAUSSIAN AND ROBUST STATISTICAL LEARNING FOR ABNORMALITY DETECTION IN MEDICAL IMAGES
Nitin Kumar, Ajit V. Rajwade, Sharat Chandran, Suyash P. Awate, Indian Institute of Technology (IIT) Bombay

WP-PE.5 MALIGNANCY CHARACTERIZATION OF HEPATOCELLULAR CARCINOMA USING HYBRID TEXTURE AND DEEP FEATURES
Qiyao Wang, Lijuan Zhang, Yaoqin Xie, Hairong Zheng, Wu Zhou, Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences

Object Detection VIII

Session Chair: Kiyoharu Aizawa, University of Tokyo

WP-PF.1 DETECT FACE IN THE WILD USING CNN CASCADE WITH FEATURE AGGREGATION AT MULTI-RESOLUTION
Jingjing Deng, Xianghua Xie, Swansea University

WP-PF.2 CATEGORY INDEPENDENT OBJECT PROPOSALS USING QUANTUM SUPERPOSITION
Junaid Malik, Caglar Aytekin, Moncef Gabbouj, Tampere University of Technology

WP-PF.3 WEAKLY SUPERVISED OBJECT LOCALIZATION WITH DEEP CONVOLUTIONAL NEURAL NETWORK BASED ON SPATIAL PYRAMID SALIENCY MAP
Zhiqiang Wan, Haibo He, University of Rhode Island

WP-PF.4 PEDESTRIAN DETECTION WITH DYNAMIC ITERATIVE BOOTSTRAPPING
Chao Pei, Lei Hao, Yuesheng Zhu, Peking University

WP-PF.5 QUALITY-ADAPTIVE DEEP LEARNING FOR PEDESTRIAN DETECTION
Khalid Tahboub, David Güera, Amy Reibman, Edward Delp, Purdue University

WP-PF.6 ACCURACY PREDICTION FOR PEDESTRIAN DETECTION
Khalid Tahboub, Amy Reibman, Edward Delp, Purdue University

WP-PF.7 GRAPH-THEORETIC SPATIOTEMPORAL CONTEXT MODELING FOR VIDEO SALIENCY DETECTION
Lina Wei, Fangfang Wang, Xi Li, Fei Wu, Jun Xiao, Zhejiang University

WP-PF.8 COST EFFICIENT SUBCATEGORY-AWARE CNN FOR OBJECT DETECTION
Tingfeng Li, Xu Zhao, Shanghai Jiao Tong University

WP-PF.9 LOW-LIGHT PEDESTRIAN DETECTION FROM RGB IMAGES USING MULTI-MODAL KNOWLEDGE DISTILLATION
Srinivas S S Kruthiventi, Pratyush Sahay, Rajesh Biswal, Harman International Industries

WP-PF.10 ON THE USE OF DEEP NEURAL NETWORKS FOR THE DETECTION OF SMALL VEHICLES IN ORTHO-IMAGES
Jean Ogier Du Terrail, Safran Electronics & Defense / Normandie Univ, UNICAEN, ENSICAEN, CNRS; Frédéric Jurie, Normandie Univ, UNICAEN, ENSICAEN, CNRS

Saliency Estimation and Video Analysis

Session Chair: Matthew Kyan, York University

WP-PG.1 SUBSPACE CLUSTERING VIA INDEPENDENT SUBSPACE ANALYSIS NETWORK
Chunchen Su, South China University of Technology; Zongze Wu, Ming Yin, Guangdong University of Technology; Kaixin Li, South China University of Technology; Weijun Sun, Guangdong University of Technology

WP-PG.2 EFFICIENT IMPROVEMENT METHOD FOR SEPARATION OF REFLECTION COMPONENTS BASED ON AN ENERGY FUNCTION
Takahisa Yamamoto, Toshihiro Kitajima, Ryota Kawauchi, Samsung R&D Institute Japan

WP-PG.3 CONTINUOUS DETECTION AND RECOGNITION OF ACTIONS OF INTEREST AMONG ACTIONS OF NON-INTEREST USING A DEPTH CAMERA
Neha Dawar, Nasser Kehtarnavaz, University of Texas at Dallas

WP-PG.4 MULTIPLE PATH SEARCH FOR ACTION TUBE DETECTION IN VIDEOS
Erick Hendra Putra Alwando, Yie-Tarng Chen, Wen-Hsien Fang, National Taiwan University of Science and Technology

WP-PG.5 ROADESIC DISTANCE: FLOW-AWARE TRACKLET ASSOCIATION COST FOR WIDE AREA SURVEILLANCE
Yeti Z. Gürbüz, Ogul Can, A. Aydin Alatan, Middle East Technical University

WP-PG.6 PERSON RE-IDENTIFICATION USING VISUAL ATTENTION
Alireza Rahimpour, Liu Liu, Ali Taalimi, Yang Song, Hairong Qi, The University of Tennessee at Knoxville

WP-PG.7 FOREGROUND DETECTION IN CAMOUFLAGED SCENES
Shuai Li, University of Wollongong; Dinei Florencio, Microsoft Research; Yaqin Zhao, Nanjing Forestry University; Chris Cook, Wanqing Li, University of Wollongong

WP-PG.8 TASK-DEPENDENT SALIENCY ESTIMATION FROM TRAJECTORIES OF AGENTS IN VIDEO SEQUENCES
Damian Campo, Mohamad Baydoun, Lucio Marcenaro, Carlo Regazzoni, University of Genova

WP-PG.9 SALIENT OBJECT DETECTION VIA A LINEAR FEEDBACK CONTROL SYSTEM
Shuwei Huo, Yuan Zhou, School of Electrical and Information Engineering, Tianjin University; Sun-Yuan Kung, School of Electrical and Information Engineering, Princeton University

WP-PG.10 DEEP SALIENCY MAP ESTIMATION OF HAND-CRAFTED FEATURES
Guoqing Jin, Shiwei Shen, Dongming Zhang, Institute of Computing Technology, Chinese Academy of Sciences, University of Chinese Academy of Sciences; Wenjing Duan, Beijing University of Posts and Telecommunications; Yongdong Zhang, Institute of Computing Technology, Chinese Academy of Sciences, University of Chinese Academy of Sciences

Image and Video Communications

Session Chair: Xiaoqing Zhu, Cisco Systems

WQ-L1.1 16:30 **JOINT TEXTURE AND DEPTH MAP CODING FOR ERROR-RESILIENT 3-D VIDEO TRANSMISSION**
Pan Gao, Nanjing University of Aeronautics and Astronautics; Wei Xiang, James Cook University; D. M. Motiur Rahaman, Manoranjan Paul, Charles Sturt University

WQ-L1.2 16:50 **AN ERROR-RESILIENT VIDEO CODING FRAMEWORK WITH SOFT RESET AND END-TO-END DISTORTION OPTIMIZATION**
Bohan Li, Tejaswi Nanjundaswamy, Kenneth Rose, University of California, Santa Barbara

WQ-L1.3 17:10 **RANDOM ACCESS POINT PERIOD OPTIMIZATION FOR VIEWPORT ADAPTIVE TILE BASED STREAMING OF 360° VIDEO**
Yago Sanchez, Robert Skupin, Cornelius Hellge, Thomas Schierl, Fraunhofer Institute for Telecommunications, Heinrich Hertz Institute

WQ-L1.4 17:30 **PRECODING AND POSTCODING SCHEMES FOR WIRELESS VIDEO TRANSMISSION IN OVERLOADED MIMO SYSTEMS**
Koji Tashiro, Leonardo Lanante, Masayuki Kurosaki, Hiroshi Ochi, Kyushu Institute of Technology

WQ-L1.5 17:50 **PROGRESSIVE COMMUNICATION FOR INTERACTIVE LIGHT FIELD IMAGE DATA STREAMING**
Eduardo Peixoto, Bruno Macchiavello, Edson Mintsu Hung, Camilo Dorea, Universidade de Brasilia; Gene Cheung, National Institute of Informatics

Sparse Representation

Session Chair: Xiaoyan Sun, Microsoft Research Asia

WQ-L2.1 16:30 **MIXED SPARSITY REGULARIZED MULTI-VIEW UNSUPERVISED FEATURE SELECTION**
Kennedy W. Wangila, Ke Gao, Pengfei Zhu, Qinghua Hu, Changqing Zhang, Tianjin University

WQ-L2.2 16:50 **GREEDY BAYESIAN DOUBLE SPARSITY DICTIONARY LEARNING**
Juan Gabriel Serra, Salvador Villena, Rafael Molina, University of Granada; Aggelos K. Katsaggelos, Northwestern University

WQ-L2.3 17:10 **SYNTHESIS-ANALYSIS DECONVOLUTIONAL NETWORK FOR COMPRESSED SENSING**
Qiegen Liu, Nanchang University; Henry Leung, University of Calgary

WQ-L2.4 17:30 **ADMM PENALTY PARAMETER SELECTION WITH KRYLOV SUBSPACE RECYCLING TECHNIQUE FOR SPARSE CODING**
Youzuo Lin, Brendt Wohlberg, Velimir Vesselinov, Los Alamos National Laboratory

WQ-L2.5 17:50 **SPATIAL PYRAMID ALIGNMENT FOR SPARSE CODING BASED OBJECT CLASSIFICATION**
Joonsoo Kim, Khalid Tahboub, Edward Delp, Purdue University

Image Fusion

Session Chair: Javier Mateos, University of Granada

WQ-L3.1 16:30 **TIME-OF-FLIGHT SENSOR DEPTH ENHANCEMENT FOR AUTOMOTIVE EXHAUST GAS**
Tomonari Yoshida, DENSO CORPORATION, German Research Center for Artificial Intelligence (DFKI); Oliver Wasenmüller, German Research Center for Artificial Intelligence (DFKI); Didier Stricker, German Research Center for Artificial Intelligence (DFKI), University of Kaiserslautern

WQ-L3.2 16:50 **A NEW FUSION METHOD FOR REMOTE SENSING IMAGES BASED ON SALIENT REGION EXTRACTION**
Libao Zhang, Jue Zhang, Beijing Normal University

WQ-L3.3 17:10 **RGB-D DATA FUSION IN COMPLEX SPACE**
Ziyun Cai, Ling Shao, University

WQ-L3.4 17:30 **HIGH-RESOLUTION SPECTRAL IMAGE RECONSTRUCTION BASED ON COMPRESSED DATA FUSION**
Óscar Espitia, Henry Arguello, Universidad Industrial de Santander; Jean-Yves Tourneret, IRIT/INP-ENSEEIHT

WQ-L3.5 17:50 **THE SHORTEST MATCHING PATH BASED ON NOVEL CYCLE CONSISTENCY**
Wei Yu, Yi Tao, Hongxun Yao, Harbin Institute of Technology

Computational Imaging System II

Session Chair: Ming-Ching Chang, University at Albany, State University of New York

WQ-L5.1 16:30 **LOW COMPLEXITY IMAGE FUSION IN BAYER DOMAIN USING A MONOCHROME SENSOR AND BAYER SENSOR**
Prashant Rupapara, Aravind Rangavajjula, Samsung Semiconductor India Research - Bangalore; Anurag Jain, Samsung R&D Institute India - Bangalore

WQ-L5.2 16:50 **IMAGE LEVEL COLOR CLASSIFICATION FOR COLORBLIND ASSISTANCE**
Tom Fuller, Amir Sadovnik, Lafayette College

WQ-L5.3 17:10 **PIX2NVS: PARAMETERIZED CONVERSION OF PIXEL-DOMAIN VIDEO FRAMES TO NEUROMORPHIC VISION STREAMS**
Yin Bi, Yiannis Andreopoulos, University College London

WQ-L5.4 17:30 **CONTINUOUS FACIAL EXPRESSION RECOGNITION FOR AFFECTIVE INTERACTION WITH VIRTUAL AVATAR**
Zhengkun Shang, Jyoti Joshi, Jesse Hoey, University of Waterloo

WQ-L5.5 17:50 **FITNESS HEART RATE MEASUREMENT USING FACE VIDEOS**
Qiang Zhu, Chau-Wai Wong, University of Maryland, College Park; Chang-Hong Fu, Nanjing University of Science and Technology; Min Wu, University of Maryland, College Park

Synthesis, Representation and Rendering

Session Co-Chairs: Zhineng Chen, Institute of Automation, Chinese Academy of Science; Hongtao Xie, Institute of Information Engineering, Chinese Academy of Science

WQ-L6.1 16:30 **AN OCCLUSION MODEL FOR IMPROVING RENDERING QUALITY OF VIEW**
Changjian Zhu, Huazhong University of Science and Technology; Hong Zhang, Guilin Normal College; Li Yu, Huazhong University of Science and Technology

WQ-L6.2 16:50 **TRANSFORMING PHOTOS TO COMICS USING CONVOLUTIONAL NEURAL NETWORKS**
Yang Chen, Tsinghua University; Yu-Kun Lai, Cardiff University; Yong-Jin Liu, Tsinghua University

WQ-L6.3 17:10 **I2T2I: LEARNING TEXT TO IMAGE SYNTHESIS WITH TEXTUAL DATA AUGMENTATION**
Hao Dong, Jingqing Zhang, Douglas McIlwraith, Yike Guo, Imperial College London

WQ-L6.4 17:30 **ADAPTIVE LOCAL SPATIAL MODELING FOR ONLINE CHANGE DETECTION UNDER ABRUPT DYNAMIC BACKGROUND**
Dong Liang, Nanjing University of Aeronautics and Astronautics; Shun'ichi Kaneko, Hokkaido University; Han Sun, Nanjing University of Aeronautics and Astronautics; Bin Kang, Nanjing University of Posts and Telecommunications

WQ-L6.5 17:50 **MOONEY FACE CLASSIFICATION AND PREDICTION BY LEARNING ACROSS TONE**
Tsung-Wei Ke, Stella X. Yu, International Computer Science Institute; David Whitney, University of California, Berkeley

Object Detection IX

Session Chair: Kiyoharu Aizawa, University of Tokyo

WQ-L7.1 16:30 **IMM FILTER BASED LOCAL GRAPH MATCHING FOR PLANT CELL LINEAGE ESTIMATION**
Min Liu, Yue He, Jieqin Li, Xiaoyan Liu, Hunan University; Hongzhong Zhang, Columbia University

WQ-L7.2 16:50 **SEARCH VIDEO ACTION PROPOSAL WITH RECURRENT AND STATIC YOLO**
*Romain Vial, MINES ParisTech; Hongyuan Zhu, I2R, A*STAR, Singapore; Yonghong Tian, Peking University; Shijian Lu, I2R, A*STAR, Singapore*

WQ-L7.3 17:10 **CO-SALIENCY DETECTION VIA SEED PROPAGATION OVER THE INTEGRATED GRAPH WITH A CLUSTER LAYER**
Insung Hwang, Dong-ju Jeong, Jae Sung Park, Nam Ik Cho, Seoul National University

WQ-L7.4 17:30 **PEDESTRIAN PROPOSAL GENERATION USING DEPTH-AWARE SCALE ESTIMATION**
Kihong Park, Seungryong Kim, Kwanghoon Sohn, Yonsei University

Biomedical image processing IV

Session Chair: Yongyi Yang, Illinois Institute of Technology

WQ-L8.1 16:30 **JOINT WEBER-BASED ROTATION INVARIANT UNIFORM LOCAL TERNARY PATTERN FOR CLASSIFICATION OF PULMONARY EMPHYSEMA IN CT IMAGES**
Liying Peng, Lanfen Lin, Zhejiang University; Hongjie Hu, Xiaoli Ling, Dan Wang, Sir Run Run Shaw Hospital; Xianhua Han, Yen-Wei Chen, Ritsumeikan University

WQ-L8.2 16:50 **DETECTION OF GASTRIC CANCER RISK FROM X-RAY IMAGES VIA PATCH-BASED CONVOLUTIONAL NEURAL NETWORK**
Kenta Ishihara, Takahiro Ogawa, Miki Haseyama, Hokkaido University

WQ-L8.3 17:10 **CONVOLUTIONAL NEURAL NETWORK AS A FEATURE EXTRACTOR FOR AUTOMATIC POLYP DETECTION**
Bilal Taha, Jorge Dias, Naoufel Werghi, Khalifa University of Science Technology and Research

WQ-L8.4 17:30 **ABNORMAL MOTION DETECTION IN VIDEO USING STATISTICS OF SPATIOTEMPORAL LOCAL KINEMATICS PATTERN**
Jing Tian, Li Chen, Wuhan University of Science and Technology

WQ-L8.5 17:50 **WEAKLY-SUPERVISED LOCALIZATION OF DIABETIC RETINOPATHY LESIONS IN RETINAL FUNDUS IMAGES**
Waleed Gondal, Technische Universität Dortmund; Jan Mathias Köhler, Robert Bosch GmbH; René Grzeszick, Gernot Fink, Technische Universität Dortmund; Michael Hirsch, Max Planck Institute for Intelligent Systems, Tübingen

Image Inpainting

Session Chair: Cosmin Ancuti, Polytechnic University of Timişoara

WQ-L9.1 16:30 **REGION-BASED DEPTH RECOVERY FOR HIGHLY SPARSE DEPTH MAPS**
Said Pertuz, Joni Kamarainen, Tampere University of Technology

WQ-L9.2 16:50 **GROUP-BASED TRUNCATED L1−2 MODEL FOR IMAGE INPAINTING**
Tian-Hui Ma, University of Electronic Science and Technology of China; Yifei Lou, University of Texas at Dallas; Ting-Zhu Huang, Xi-Le Zhao, University of Electronic Science and Technology of China

WQ-L9.3 17:10 **SCALED FIXED-POINT FREQUENCY SELECTIVE EXTRAPOLATION FOR FAST IMAGE ERROR CONCEALMENT**
Nils Genser, Jürgen Seiler, André Kaup, Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU)

WQ-L9.4 17:30 **FACE AGING WITH CONDITIONAL GENERATIVE ADVERSARIAL NETWORKS**
Grigory Antipov, Orange Labs, Eurecom; Moez Baccouche, Orange Labs; Jean-Luc Dugelay, Eurecom

WQ-L9.5 17:50 **MOTION-CONSISTENT VIDEO INPAINTING**
Thuc Trinh Le, Télécom ParisTech, Université Paris-Saclay; Andrés Almansa, CNRS, Université Paris Descartes, Sorbonne Paris Cité; Yann Gousseau, Télécom ParisTech, Université Paris-Saclay; Simon Masnou, University Lyon, Université Claude Bernard Lyon 1, CNRS

Image Restoration II

Session Chair: Sei-ichiro Kamata, Waseda University

WQ-PA.1 AN EFFICIENT HAZE REMOVAL ALGORITHM USING CHROMATIC PROPERTIES
Yao Wang, Fangfa Fu, Weizhe Xu, Jinjin Shi, Jinxiang Wang, Harbin Institute of Technology

WQ-PA.2 IMAGE ENHANCEMENT METHOD FOR UNDERWATER IMAGES BASED ON DISCRETE COSINE EIGENBASIS TRANSFORMATION
Tatsuya Baba, Keishu Nakamura, Seisuke Kyochi, Masahiro Okuda, The University of Kitakyushu

WQ-PA.3 LEARNING TO GENERATE IMAGES WITH PERCEPTUAL SIMILARITY METRICS
Jake Snell, University of Toronto; Karl Ridgeway, University of Colorado, Boulder; Renjie Liao, University of Toronto; Brett Roads, Michael Mozer, University of Colorado, Boulder; Richard Zemel, University of Toronto

WQ-PA.4 HYPERSPECTRAL IMAGE INPAINTING BASED ON COLLABORATIVE TOTAL VARIATION
Paolo Addesso, University of Salerno; Mauro Dalla Mura, Laurent Condat, University of Grenoble Alpes; Rocco Restaino, Gemine Vivone, Daniele Picone, University of Salerno; Jocelyn Chanussot, University of Grenoble Alpes

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Mengdi Wang, Tsinghua University; Jing Yu, Beijing University of Technology; Weidong Sun, Tsinghua University

WQ-PA.6 SINGLE IMAGE HAZE REMOVAL BASED ON SALIENCY DETECTION AND DARK CHANNEL PRIOR
Libao Zhang, Xiaohan Wang, Chen She, Beijing Normal University

WQ-PA.7 JOINT DEFOGGING AND DEMOSAICKING
Yeejin Lee, University of California, San Diego; Keigo Hirakawa, University of Dayton; Truong Q. Nguyen, University of California, San Diego

WQ-PA.8 AN ADAPTIVE WEIGHTED TENSOR COMPLETION METHOD FOR THE RECOVERY OF REMOTE SENSING IMAGES WITH MISSING DATA
Qiangqiang Yuan, Wuhan University

Interpolation, Super-resolution, and Mosaicing II

Session Chair: Xiaolin Wu, McMaster University

WQ-PB.1 HYPERSPECTRAL IMAGE SUPER-RESOLUTION VIA CONVOLUTIONAL NEURAL NETWORK
Shaohui Mei, Xin Yuan, Jingyu Ji, Shuai Wan, Northwestern Polytechnical University; Junhui Hou, City University of Hong Kong; Qian Du, Mississippi State University

WQ-PB.2 DATA-DRIVEN ASSIMILATION OF IRREGULARLY-SAMPLED IMAGE TIME SERIES
Ronan Fablet, Phi Huynh Viet, Redouane Lguensat, IMT Atlantique; Bertrand Chapron, Ifremer

WQ-PB.3 LOCALLY-ADAPTED CONVOLUTION-BASED SUPER-RESOLUTION OF IRREGULARLY-SAMPLED OCEAN REMOTE SENSING DATA
Manuel Lopez-Radcenco, Ronan Fablet, Abdeldjalil Aissa-El-Bey, Institut Mines-Télécom Atlantique, Lab-STICC, Université Bretagne Loire; Pierre Ailliot, Université de Brest

WQ-PB.4 MOTION-COMPENSATED FRAME INTERPOLATION FOR MULTIVIEW VIDEO USING INTER-VIEW AND INTRA-VIEW CORRELATIONS
Xiaohui Yang, Zhiquan Feng, Tao Xu, Haokui Tang, Yan Jiang, University of Jinan

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Wei Ye, Kai-Kuang Ma, Nanyang Technological University

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Cecilia Aguerrebere, Duke University; Andrés Almansa, Julie Delon, Université Paris Descartes; Yann Gousseau, Télécom ParisTech; Pablo Muse, Universidad de la Republica

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Kassem Al Ismaeil, Munich RE; Djamila Aouada, University of Luxembourg; Thomas Solignac, Bruno Mirbach, IEE S.A.; Björn Ottersten, University of Luxembourg

Security and Forensics Applications

Session Chair: Zhaohui Harry Sun, Kitware

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Eric Wengrowski, Rutgers University; Zhaohui Sun, Kitware Inc.; Anthony Hoogs, Kitware Inc

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Dhruv Mullick, Netaji Subhas Institute of Technology, Delhi University, India; A V Subramanyam Subramanyam, Indraprastha Institute of Information Technology Delhi; Sabu Emmanuel, College of Computing Sciences and Engineering, Kuwait University, Kuwait

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Kenta Iida, Hitoshi Kiya, Tokyo Metropolitan University

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Stephan Escher, Thorsten Strufe, TU Dresden

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Xuejing Kang, Zhao Han, Aiwei Yu, Peiqi Duan, Beijing University of Posts and Telecommunications

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Nirusha Phillips, Ghulam Mubashar Hassan, Arcady Dyskin, Cara MacNish, Elena Pasternak, The University of Western Australia

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Deval Samirbhai Mehta, Shoushun Chen, Nanyang Technological University

WQ-PD.3 HMM BASED SPEECH-DRIVEN 3D TONGUE ANIMATION
Changwei Luo, Jun Yu, Xian Li, University of Science and Technology of China; Leilei Zhang, Zhejiang University

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Vladislav Golyanik, DFKI GmbH; Mitra Nasri, MPI-SWS; Didier Stricker, DFKI GmbH

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Ming-Ching Chang, Yi Yao, Guan Li, Yan Tong, Peter Tu, GE Global Research Center

WQ-PD.6 OFFSET APERTURE BASED HARDWARE ARCHITECTURE FOR REAL-TIME DEPTH EXTRACTION
Woojin Yun, Young-Gyu Kim, Yeongmin Lee, Jinyeon Lim, Wonseok Choi, Muhammad Umar Karim Khan, Asim Khan, Korea Advanced Institute of Science and Technology; Said Homidov, Center for Integrated Smart Sensors; Pervaiz Kareem, Korea Advanced Institute of Science and Technology; Hyun Sang Park, Kongju National University; Chong-Min Kyung, Korea Advanced Institute of Science and Technology

WQ-PD.7 ENHANCING THE PERCEPTION OF A HAZY VISUAL WORLD USING A SEE-THROUGH HEAD-MOUNTED DEVICE
Kai-En Lin, Kuang-Tsu Shih, Homer Chen, National Taiwan University

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Bio-medical Image Segmentation II

Session Chair: Siyu Xia, Southeast University

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Lingfeng Wang, Jie Huang, Institute of Automation, Chinese Academy of Sciences; Bin Lai, Agricultural Bank of China; Chunhong Pan, Institute of Automation, Chinese Academy of Sciences

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Shrimanti Ghosh, Pierre Boulanger, University of Alberta; Scott T. Acton, Silvia S. Blemker, University of Virginia; Nilanjan Ray, University of Alberta

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Jianquan Gu, Haifeng Hu, Siyue Xie, School of Electronic and Information Engineering, Sun Yat-sen University

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Li Guo, Atos Worldline; Samia Boukir, Bordeaux Institute of Technology

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Wencheng Zhu, Jiwen Lu, Jie Zhou, Tsinghua University

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