

2018 24th International Conference on Pattern Recognition (ICPR 2018)

**Beijing, China
20-24 August 2018**

Pages 1-787



**IEEE Catalog Number: CFP18182-POD
ISBN: 978-1-5386-3789-0**

**Copyright © 2018 by the Institute of Electrical and Electronics Engineers, Inc.
All Rights Reserved**

Copyright and Reprint Permissions: Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

****** This is a print representation of what appears in the IEEE Digital Library. Some format issues inherent in the e-media version may also appear in this print version.***

IEEE Catalog Number:	CFP18182-POD
ISBN (Print-On-Demand):	978-1-5386-3789-0
ISBN (Online):	978-1-5386-3788-3
ISSN:	1051-4651

Additional Copies of This Publication Are Available From:

Curran Associates, Inc
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: (845) 758-0400
Fax: (845) 758-2633
E-mail: curran@proceedings.com
Web: www.proceedings.com

CURRAN ASSOCIATES INC.
proceedings
.com

TABLE OF CONTENTS

ICPR2018 CONTEST ON OBJECT DETECTION IN AERIAL IMAGES (ODAI-18)	1
<i>Jian Ding ; Zhen Zhu ; Gui-Song Xia ; Xiang Bai ; Serge Belongie ; Jiebo Luo ; Mihai Datcu ; Marcello Pelillo ; Liangpei Zhang</i>	
ICPR2018 CONTEST ON ROBUST READING FOR MULTI-TYPE WEB IMAGES	7
<i>Mengchao He ; Yuliang Liu ; Zhibo Yang ; Sheng Zhang ; Canjie Luo ; Feiyu Gao ; Qi Zheng ; Yongpan Wang ; Xin Zhang ; Lianwen Jin</i>	
FIND IT! FRAUD DETECTION CONTEST REPORT	13
<i>Chloé Artaud ; Nicolas Sidère ; Antoine Doucet ; Jean-Marc Ogier ; Vincent Poulain D'andecy</i>	
BOOSTING BLACK-BOX VARIATIONAL INFERENCE BY INCORPORATING THE NATURAL GRADIENT	19
<i>Felix Trusheim ; Alexandru Condurache ; Alfred Mertins</i>	
INTRODUCE MORE CHARACTERISTICS OF SAMPLES INTO CROSS-DOMAIN SENTIMENT CLASSIFICATION	25
<i>Wangwang Liu ; Xianghua Fu</i>	
DISCRIMINATIVE COLLABORATIVE REPRESENTATION AND ITS APPLICATION TO AUDIO SIGNAL CLASSIFICATION	31
<i>Yuechi Jiang ; Frank H. F. Leung</i>	
CROSS-DOMAIN SEMANTIC FEATURE LEARNING VIA ADVERSARIAL ADAPTATION NETWORKS	37
<i>Rui Li ; Wenming Cao ; Sheng Qian ; Hau-San Wong ; Si Wu</i>	
CAYLEY- KLEIN METRIC LEARNING WITH SHRINKAGE-EXPANSION CONSTRAINTS	43
<i>Yanhonz Bi ; Bin Fant ; Fuchao Wu</i>	
ESTIMATING PREDICTION QUALITIES WITHOUT GROUND TRUTH: A REVISIT OF THE REVERSE TESTING FRAMEWORK	49
<i>Dheeraj Bhaskaruni ; Fiona Patricia Moss ; Chao Lan</i>	
ROTATECONV: MAKING ASYMMETRIC CONVOLUTIONAL KERNELS ROTATABLE	55
<i>Jiabin Ma ; Weiyu Guo ; Wei Wang ; Liang Wang</i>	
LEARNING COMBINATIONS OF ACTIVATION FUNCTIONS	61
<i>Franco Manessi ; Alessandro Rozza</i>	
LEARNING EVASION STRATEGY IN PURSUIT-EVASION BY DEEP Q-NETWORK	67
<i>Jiagang Zhu ; Wei Zou ; Zheng Zhu</i>	
DATA AUGMENTATION WITH IMPROVED GENERATIVE ADVERSARIAL NETWORKS	73
<i>Hongjiang Shi ; Lu Wang ; Guangtai Ding ; Fenglei Yang ; Xiaoqiang Li</i>	
ARTSY-GAN: A STYLE TRANSFER SYSTEM WITH IMPROVED QUALITY, DIVERSITY AND PERFORMANCE	79
<i>Hanwen Liu ; Pablo Navarrete Michelini ; Dan Zhu</i>	
R²-RESNEXT: A RESNEXT-BASED REGRESSION MODEL WITH RELATIVE RANKING FOR FACIAL BEAUTY PREDICTION	85
<i>Luojun Lin ; Lingyu Liang ; Lianwen Jin</i>	
LEARNING INTRINSIC IMAGE DECOMPOSITION BY DEEP NEURAL NETWORK WITH PERCEPTUAL LOSS	91
<i>Guangyun Han ; Xiaohua Xie ; Wei-Shi Zheng ; Jianhuang Lai</i>	
LEARNING TO LEARN SECOND-ORDER BACK-PROPAGATION FOR CNNs USING LSTMS	97
<i>Anirban Roy ; Sinisa Todorovic</i>	
MULTI-SCALE RECURRENT ENCODER-DECODER NETWORK FOR DENSE TEMPORAL CLASSIFICATION	103
<i>Sungkwon Choo ; Wonkyo Seo ; Dong-Ju Jeong ; Nam Ik Cho</i>	
A CONVOLUTIONAL NEURAL NETWORK FOR PIXELWISE ILLUMINANT RECOVERY IN COLOUR AND SPECTRAL IMAGES	109
<i>Antonio Robles-Kelly ; Ran Wei</i>	
BOTTOM-UP POSE ESTIMATION OF MULTIPLE PERSON WITH BOUNDING BOX CONSTRAINT	115
<i>Miaopeng Li ; Zimeng Zhou ; Jie Li ; Xinguo Liu</i>	
CONNECTED COMPONENTS LABELING ON DRAGS	121
<i>Federico Bolelli ; Lorenzo Baraldi ; Michele Cancilla ; Costantino Grana</i>	

LIGHTWEIGHT DEEP RESIDUE LEARNING FOR JOINT COLOR IMAGE DEMOSAICKING AND DENOISING	127
<i>Tao Huang ; Fang Fang Wu ; Weisheng Dong ; Guangming Shi ; Xin Li</i>	
JOINT HAZE-RELEVANT FEATURES SELECTION AND TRANSMISSION ESTIMATION VIA DEEP BELIEF NETWORK FOR EFFICIENT SINGLE IMAGE DEHAZING	133
<i>Zhigang Ling ; Xiuxin Li ; Wen Zou ; Min Liu</i>	
IN2I: UNSUPERVISED MULTI-IMAGE-TO-IMAGE TRANSLATION USING GENERATIVE ADVERSARIAL NETWORKS	140
<i>Pramuditha Perera ; Mahdi Abavisani ; Vishal M. Patel</i>	
SESr: SINGLE IMAGE SUPER RESOLUTION WITH RECURSIVE SQUEEZE AND EXCITATION NETWORKS	147
<i>Xi Cheng ; Xiang Li ; Jian Yang ; Ying Tai</i>	
DEEP JOINT NOISE ESTIMATION AND REMOVAL FOR HIGH ISO JPEG IMAGES	153
<i>Huanjing Yue ; Shengdi Zhou ; Jingyu Yang ; Xiaoyan Sun ; Chunping Hou</i>	
LINEAR DISCRIMINATIVE SPARSITY PRESERVING PROJECTIONS FOR DIMENSIONALITY REDUCTION	159
<i>Jianbo Zhang ; Jinkuan Wang</i>	
HUMAN ACTIVITY RECOGNITION BASED ON CONVOLUTIONAL NEURAL NETWORK	165
<i>Wenchao Xu ; Yuxin Pang ; Yanqin Yang ; Yanbo Liu</i>	
A COMPREHENSIVE STUDY ON UPPER-BODY DETECTION WITH DEEP NEURAL NETWORKS	171
<i>Yamei Zhu ; Lin Zhang</i>	
STRUCTURE LEARNING OF BAYESIAN NETWORKS BY FINDING THE OPTIMAL ORDERING	177
<i>Chu-Chao He ; Xiao-Guang Gao ; Zhi-Gao Guo</i>	
PRECISION LEARNING: TOWARDS USE OF KNOWN OPERATORS IN NEURAL NETWORKS	183
<i>Andreas Maier ; Frank Schebesch ; Christopher Syben ; Tobias Würfl ; Stefan Steidl ; Jang-Hwan Choi ; Rebecca Fahrig</i>	
FREE SPACE, VISIBLE AND MISSING LANE MARKER ESTIMATION USING THE PSINET AND EXTRA TREES REGRESSION	189
<i>Vijay John ; Nithilan Meenakshi Karunakaran ; Chunzhao Guo ; Kiyosumi Kidono ; Seiichi Mita</i>	
APPROXIMATE CLUSTER HEAT MAPS OF LARGE HIGH-DIMENSIONAL DATA	195
<i>Punit Rathore ; James C. Bezdek ; Dheeraj Kumar ; Sutharshan Rajasegarar ; Marimuthu Palaniswami</i>	
AN APPROXIMATE BAYESIAN LONG SHORT- TERM MEMORY ALGORITHM FOR OUTLIER DETECTION	201
<i>Chao Chen ; Xiao Lin ; Gabriel Terejanu</i>	
ONLINE LOW-RANK METRIC LEARNING VIA PARALLEL COORDINATE DESCENT METHOD	207
<i>Gan Sun ; Yang Cong ; Qiang Wang ; Xiaowei Xu</i>	
GRAPH EMBEDDING-BASED ENSEMBLE LEARNING FOR IMAGE CLUSTERING	213
<i>Xiaohui Luo ; Li Zhang ; Fanzhang Li ; Bangjun Wang</i>	
AN EXTENSIVE STUDY OF CYCLE-CONSISTENT GENERATIVE NETWORKS FOR IMAGE-TO-IMAGE TRANSLATION	219
<i>Yu Liu ; Yanming Guo ; Wei Chen ; Michael S. Lew</i>	
LOCAL AND GLOBAL BAYESIAN NETWORK BASED MODEL FOR FLOOD PREDICTION	225
<i>Yirui Wu ; Weigang Xu ; Jun Fengt ; Shivakumara Palaiahnakote ; Tong Lu</i>	
MULTI-SOURCE CLUSTERING BASED ON SPECTRAL RECOVERY	231
<i>Hongwei Yin ; Fanzhang Li ; Li Zhang</i>	
A VOTING-NEAR-EXTREME-LEARNING-MACHINE CLASSIFICATION ALGORITHM	237
<i>Hui-Rang Hou ; Qing-Hao Meng ; Xiao-Nei Zhang</i>	
WASSERSTEIN GENERATIVE RECURRENT ADVERSARIAL NETWORKS FOR IMAGE GENERATING	242
<i>Chunping Zhang ; Yong Feng ; Baohua Qiang ; Jiaying Shang</i>	
IMAGE CAPTIONING USING ADVERSARIAL NETWORKS AND REINFORCEMENT LEARNING	248
<i>Shiyang Yan ; Fangyu Wu ; Jeremy S. Smith ; Wenjin Lu ; Bailing Zhang</i>	
TRANSPARENT RANDOM DOT MARKERS	254
<i>Hideaki Uchiyama ; Yuji Oyamada</i>	
A DEEP GRAPHICAL MODEL FOR LAYERED KNOWLEDGE TRANSFER	260
<i>Wei Lu ; Fu-Lai Chung</i>	

TARGET GROUP DISTRIBUTION PATTERN DISCOVERY VIA CONVOLUTIONAL NEURAL NETWORK.....	266
<i>Xin Xu ; Wei Wang</i>	
GROUPED MULTI-TASK CNN FOR FACIAL ATTRIBUTE RECOGNITION.....	272
<i>Chitung Yip ; Haifeng Hu</i>	
JOINT SEMI-SUPERVISED LEARNING AND RE-RANKING FOR VEHICLE RE-IDENTIFICATION.....	278
<i>Fangyu Wu ; Shiyang Yan ; Jeremy S. Smith ; Bailing Zhang</i>	
MULTI-FREQUENCY DECOMPOSITION WITH FULLY CONVOLUTIONAL NEURAL NETWORK FOR TIME SERIES CLASSIFICATION.....	284
<i>Yongming Han ; Shuheng Zhang ; Zhiqiang Geng</i>	
A NOVEL ASYMMETRIC EMBEDDING MODEL FOR KNOWLEDGE GRAPH COMPLETION.....	290
<i>Zhiqiang Geng ; Zhongkun Li ; Yongming Han</i>	
ENHANCING KNOWLEDGE GRAPH COMPLETION WITH POSITIVE UNLABELED LEARNING.....	296
<i>Jinghao Niu ; Zhengya Sun ; Wensheng Zhang</i>	
MODEL-FREE KNOCKOFFS FOR SLOPE-ADAPTIVE VARIABLE SELECTION WITH CONTROLLED FALSE DISCOVERY RATE.....	302
<i>Mahammad Humayoo ; Xueqi Cheng</i>	
GENERATING MESH-BASED SHAPES FROM LEARNED LATENT SPACES OF POINT CLOUDS WITH VAE-GAN.....	308
<i>Cherdsak Kingkan ; Coichi Hashimoto</i>	
SCALABLE SPECTRAL CLUSTERING WITH COSINE SIMILARITY.....	314
<i>Guangliang Chen</i>	
SELECTIVE ENSEMBLE NETWORK FOR ACCURATE CROWD DENSITY ESTIMATION.....	320
<i>Jiyeoup Jeong ; Hawook Jeong ; Jongin Lim ; Jongwon Choi ; Sangdoon Yun ; Jin Young Choi</i>	
ENHANCED NETWORK EMBEDDING WITH TEXT INFORMATION.....	326
<i>Shuang Yang ; Bo Yang</i>	
KNOWLEDGE GRAPH EMBEDDING WITH MULTIPLE RELATION PROJECTIONS.....	332
<i>Kien Do ; Truyen Tran ; Svetha Venkatesh</i>	
UNSUPERVISED DOMAIN ADAPTATION FOR NEURAL MACHINE TRANSLATION.....	338
<i>Zhen Yang ; Wei Chen ; Feng Wang ; Bo Xu</i>	
A GRAPH-BASED APPROACH FOR STATIC ENSEMBLE SELECTION IN REMOTE SENSING IMAGE ANALYSIS.....	344
<i>Fabio Augusto Faria ; Sudeep Sarkar</i>	
DEEP SPATIOTEMPORAL REPRESENTATION OF THE FACE FOR AUTOMATIC PAIN INTENSITY ESTIMATION.....	350
<i>Mohammad Tavakolian ; Abdenour Hadid</i>	
ACCELERATING THE CLASSIFICATION OF VERY DEEP CONVOLUTIONAL NETWORK BY A CASCADING APPROACH.....	355
<i>Wu Zheng ; Zhaoxiang Zhang</i>	
PREDICTION DEFAULTS FOR NETWORKED-GUARANTEED LOANS.....	361
<i>Dawei Cheng ; Zhibin Niu ; Yi Tu ; Liqing Zhang</i>	
IDENTIFICATION OF ASD CHILDREN BASED ON VIDEO DATA.....	367
<i>Jing Li ; Yihao Zhong ; Gaoxiang Ouyang</i>	
LD-CNN: A LIGHTWEIGHT DILATED CONVOLUTIONAL NEURAL NETWORK FOR ENVIRONMENTAL SOUND CLASSIFICATION.....	373
<i>Xiaohu Zhang ; Yuexian Zou ; Wenwu Wang</i>	
JOINT KNOWLEDGE BASE EMBEDDING WITH NEIGHBORHOOD CONTEXT.....	379
<i>Binling Nie ; Shouqian Sun</i>	
PRIVILEGED MULTI-TARGET SUPPORT VECTOR REGRESSION.....	385
<i>Guoqiang Wu ; Yingjie Tian ; Dalian Liu</i>	
SPECTRAL EMBEDDED CLUSTERING ON MULTI-MANIFOLD.....	391
<i>Shuning Huang ; Li Zhang ; Fanzhang Li</i>	
UNSUPERVISED DOMAIN ADAPTATION BY REGULARIZING SOFTMAX ACTIVATION.....	397
<i>Cunbin Gui ; Jiani Hu</i>	
GRAPH-BASED SEMI-SUPERVISED CLASSIFICATION WITH CRF AND RNN.....	403
<i>Zhili Ye ; Yang Du ; Fengge Wu</i>	
DEEP EPITOME FOR UNRAVELLING GENERALIZED HAMMING NETWORK.....	409
<i>Lixin Fan</i>	
LOW RANK MULTI-LABEL CLASSIFICATION WITH MISSING LABELS.....	417
<i>Baolin Guo ; Chenping Hou ; Jincheng Shan ; Dongyun Yi</i>	

DEEP STRUCTURED ENERGY-BASED IMAGE INPAINTING	423
<i>Fazil Altinel ; Mete Ozay ; Takayuki Okatani</i>	
PIECEWISE LINEAR UNITS FOR FAST SELF-NORMALIZING NEURAL NETWORKS	429
<i>Yuanyuan Chang ; Xiaofu Wu ; Suofei Zhang</i>	
REPRESENTING RELATIVE VISUAL ATTRIBUTES WITH A REFERENCE-POINT-BASED DECISION MODEL	435
<i>Marc T. Law ; Paul Weng</i>	
CURVATURE-BASED COMPARISON OF TWO NEURAL NETWORKS	441
<i>Tao Yu ; Huan Long ; John E. Hopcroft</i>	
DIRECTED GRAPH EVOLUTION FROM EULER-LAGRANGE DYNAMICS	448
<i>Jianjia Wang ; Richard C. Wilson ; Edwin R. Hancock</i>	
A NEW ECOC ALGORITHM FOR MULTICLASS MICROARRAY DATA CLASSIFICATION	454
<i>Mengxin Sun ; Kunhong Liu ; Qingqi Hong ; Beizhan Wang</i>	
STRUCTURED CONVEX OPTIMIZATION METHOD FOR ORTHOGONAL NONNEGATIVE MATRIX FACTORIZATION	459
<i>Junjun Pan ; Michael K. Ng ; Xiongjun Zhang</i>	
ROBUST AND FLEXIBLE GRAPH-BASED SEMI-SUPERVISED EMBEDDING	465
<i>F. Dornaika ; Y. Ei Traboulsi ; R. Zhu</i>	
IMAGE-BASED AIR POLLUTION ESTIMATION USING HYBRID CONVOLUTIONAL NEURAL NETWORK	471
<i>Jian Ma ; Kun Li ; Yahong Han ; Jingyu Yang</i>	
DYNAMIC PROJECTED SEGMENTATION NETWORKS FOR HAND POSE ESTIMATION	477
<i>Yunlong Che ; Yue Qi</i>	
CASCADENET: MODIFIED RESNET WITH CASCADE BLOCKS	483
<i>Xiang Li ; Wei Li ; Xiaodong Xu ; Qian Du</i>	
DUAL-RESOLUTION U-NET: BUILDING EXTRACTION FROM AERIAL IMAGES	489
<i>Kangkang Lu ; Ying Sun ; Sim-Heng Ong</i>	
JOINT HEAD POSE ESTIMATION WITH MULTI-TASK CASCADED CONVOLUTIONAL NETWORKS FOR FACE ALIGNMENT	495
<i>Zhenyi Cai ; Qingshan Liu ; Shanmin Wang ; Bruce Yang</i>	
MAXIMUM GRADIENT DIMENSIONALITY REDUCTION	501
<i>Xianghui Luo ; Robert J. Durrant</i>	
SINGLE IMAGE SUPER-RESOLUTION WITH LEARNING ITERATIVELY NON-LINEAR MAPPING BETWEEN LOW- AND HIGH-RESOLUTION SPARSE REPRESENTATIONS	507
<i>Kun Zeng ; Hong Zheng ; Yanyun Qu ; Xiaobo Qu ; Lijun Bao ; Zhong Chen</i>	
GENERATING FACIAL LINE-DRAWING WITH CONVOLUTIONAL NEURAL NETWORKS	513
<i>Yixue Wang ; Xinyang Bing ; Liying Zheng ; Shuo Zhao</i>	
IMPROVED LEARNING IN CONVOLUTIONAL NEURAL NETWORKS WITH SHIFTED EXPONENTIAL LINEAR UNITS (SHELUS)	517
<i>Bertil Grelsson ; Michael Felsberg</i>	
LEARNING ATTRIBUTE REPRESENTATION FOR HUMAN ACTIVITY RECOGNITION	523
<i>Fernando Moya Rueda ; Gernot A. Fink</i>	
REFLECTIVE FIELD FOR PIXEL-LEVEL TASKS	529
<i>Liang Zhang ; Xiangwen Kong ; Peiyi Shen ; Guangming Zhu ; Juan Song ; Syed Afaq Ali Shah ; Mohammed Bennamoun</i>	
ADAPTIVE LOCALITY PRESERVING BASED DISCRIMINATIVE REGRESSION	535
<i>Jie Wen ; Lunke Fei ; Zhihui Lai ; Zheng Zhang ; Jian Wu ; Xiaozhao Fang</i>	
LEARNING TRAINING SAMPLES FOR OCCLUSION EDGE DETECTION AND ITS APPLICATION IN DEPTH ORDERING INFERENCE	541
<i>Yu Zhou ; Jianxiang Ma ; Anlong Ming ; Xiang Bai</i>	
MULTI-SOURCE LEARNING FOR SKELETON -BASED ACTION RECOGNITION USING DEEP LSTM NETWORKS	547
<i>Ran Cui ; Aichun Zhu ; Sai Zhang ; Gang Hua</i>	
CONDITIONAL TRANSFER WITH DENSE RESIDUAL ATTENTION: SYNTHESIZING TRAFFIC SIGNS FROM STREET-VIEW IMAGERY	553
<i>Ries Uittenbogaard ; Clint Sebastian ; Julien Viiverberg ; Bas Boom ; Peter H.N. De With</i>	
IMPROVING OPTIMUM- PATH FOREST CLASSIFICATION USING UNSUPERVISED MANIFOLD LEARNING	560
<i>Luis C. S. Afonso ; Daniel C. G. Pedronette ; André N. De Souza ; João P. Papa</i>	
SUPERFRAMES, A TEMPORAL VIDEO SEGMENTATION	566
<i>Hajar Sadeghi Sokeh ; Vasileios Argyriou ; Dorothy Monekosso ; Paolo Remagnino</i>	

GRAPH EDIT DISTANCE TESTING THROUGH SYNTHETIC GRAPHS GENERATION	572
<i>Pep Santacruz ; Francese Serratos</i>	
BOTNET DETECTION BASED ON FUZZY ASSOCIATION RULES	578
<i>Jiazhong Lu ; Fengmao Lv ; Quan-Hui Liu ; Malu Zhang ; Xiaosong Zhang</i>	
EFFICIENT TEXT CLASSIFICATION USING TREE-STRUCTURED MULTI-LINEAR PRINCIPAL COMPONENT ANALYSIS	585
<i>Yuanhang Su ; Yuzhong Huang ; C.-C. Jay Kuo</i>	
PREDICTION-BASED CLASSIFICATION USING LEARNING ON RIEMANNIAN MANIFOLDS	591
<i>Vitaliy Tayanov ; Adam Krzyzak ; Ching Y. Suen</i>	
TWO-STREAM GATED FUSION CONVNETS FOR ACTION RECOGNITION	597
<i>Jiagang Zhu ; Wei Zou ; Zheng Zhu</i>	
RETHINKING RELU TO TRAIN BETTER CNNs	603
<i>Gangming Zhao ; Zhaoxiang Zhang ; He Guan ; Peng Tang ; Jingdong Wang</i>	
BAYESIAN MULTI-HYPERPLANE MACHINE FOR PATTERN RECOGNITION	609
<i>Khanh Nguyen ; Trung Le ; Tu Nguyen Dinh ; Dinh Phung</i>	
DIVERSIFIED DUAL DOMAIN-ADVERSARIAL NEURAL NETWORKS	615
<i>Yuchun Fang ; Qiulong Yuan ; Wei Zhang ; Zhaoxiang Zhang</i>	
ROBUST DISCRIMINATIVE PROJECTIVE DICTIONARY PAIR LEARNING BY ADAPTIVE REPRESENTATIONS	621
<i>Yulin Sun ; Zhao Zhang ; Weiming Jiang ; Guangcan Liu ; Meng Wang ; Shuicheng Yan</i>	
MULTIPLE MANIFOLDS METRIC LEARNING WITH APPLICATION TO IMAGE SET CLASSIFICATION	627
<i>Rui Wang ; Xiao-Jun Wu ; Kai-Xuan Chen ; Josef Kittler</i>	
DENSE CONVOLUTIONAL RECURRENT NEURAL NETWORK FOR GENERALIZED SPEECH ANIMATION	633
<i>Lei Xiao ; Zengfu Wang</i>	
GRAPH MEMORY NETWORKS FOR MOLECULAR ACTIVITY PREDICTION	639
<i>Trang Pham ; Truyen Tran ; Svetha Venkatesh</i>	
END-TO-END VIDEO-LEVEL REPRESENTATION LEARNING FOR ACTION RECOGNITION	645
<i>Jiagang Zhu ; Zheng Zhu ; Wei Zou</i>	
RIEMANNIAN KERNEL BASED NYSTRÖM METHOD FOR APPROXIMATE INFINITE-DIMENSIONAL COVARIANCE DESCRIPTORS WITH APPLICATION TO IMAGE SET CLASSIFICATION	651
<i>Kai-Xuan Chen ; Xiao-Jun Wu ; Rui Wang ; Josef Kittler</i>	
AUTOMATED PRUNING FOR DEEP NEURAL NETWORK COMPRESSION	657
<i>Franco Manessi ; Alessandro Rozza ; Simone Bianco ; Paolo Napoletano ; Raimondo Schettini</i>	
LHONE: LABEL HOMOPHILY ORIENTED NETWORK EMBEDDING	665
<i>Le Zhang ; Xiang Li ; Ji Xiang ; Ying Qi</i>	
SKIN LESION SEGMENTATION VIA DENSE CONNECTED DECONVOLUTIONAL NETWORK	671
<i>Hang Li ; Xinzi He ; Zhen Yu ; Feng Zhou ; Jie-Zhi Cheng ; Limin Huang ; Tianfu Wang ; Baiying Lei</i>	
GENERATING ADVERSARIAL EXAMPLES WITH CONDITIONAL GENERATIVE ADVERSARIAL NET	676
<i>Ping Yu ; Kaitao Song ; Jianfeng Lu</i>	
AN EFFECTIVE DEEP LEARNING BASED SCHEME FOR NETWORK INTRUSION DETECTION	682
<i>Hongpo Zhang ; Chase Q. Wu ; Shan Gao ; Zongmin Wang ; Yuxiao Xu ; Yongpeng Liu</i>	
LIFTING SCHEME BASED DEEP NETWORK MODEL FOR REMOTE SENSING IMAGERY CLASSIFICATION	688
<i>Xinlong Liu ; Bokun He ; Chu He</i>	
CAUCHY MATCHING PURSUIT FOR ROBUST SPARSE REPRESENTATION AND CLASSIFICATION	694
<i>Yulong Wang ; Cuiming Zou ; Yuan Yan Tang ; Luoqing Li</i>	
DEEPLY SUPERVISED RESIDUAL NETWORK FOR HEP-2 CELL CLASSIFICATION	699
<i>Hai Xie ; Yejun He ; Haijun Lei ; Tao Han ; Zhen Yu ; Baiying Lei</i>	
PEN TIP MOTION PREDICTION FOR HANDWRITING DRAWING ORDER RECOVERY USING DEEP NEURAL NETWORK	704
<i>Bocheng Zhao ; Minghao Yang ; Jianhua Tao</i>	
OPTIMISING ENSEMBLE OF TWO-CLASS CLASSIFIERS USING SPECTRAL ANALYSIS	710
<i>T. Windeatt</i>	

NEURAL NETWORK KNOWLEDGE TRANSFER USING UNSUPERVISED SIMILARITY MATCHING	716
<i>Nikolaos Passalis ; Anastasios Tefas</i>	
SUBSPACE SUPPORT VECTOR DATA DESCRIPTION	722
<i>Fahad Sohrab ; Jenni Raitoharju ; Moncef Gabbouj ; Alexandros Iosifidis</i>	
DATA AUGMENTATION VIA LATENT SPACE INTERPOLATION FOR IMAGE CLASSIFICATION	728
<i>Xiaofeng Liu ; Yang Zou ; Lingsheng Kong ; Zhihui Diao ; Junliang Yan ; Jun Wang ; Site Li ; Ping Jia ; Jane You</i>	
MULTI-VIEW CLASSIFICATION AND 3D BOUNDING BOX REGRESSION NETWORKS	734
<i>Christopher Pramerdorfer ; Martin Kampel ; Mark Van Loock</i>	
DEEP RECURRENT ELECTRICITY THEFT DETECTION IN AMI NETWORKS WITH RANDOM TUNING OF HYPER-PARAMETERS	740
<i>Mahmoud Nabil ; Muhammad Ismail ; Mohamed Mahmoud ; Mostafa Shahin ; Khalid Qaraqe ; Erchin Serpedin</i>	
A SEGMENTED LOCAL OFFSET METHOD FOR IMBALANCED DATA CLASSIFICATION USING QUASI-LINEAR SUPPORT VECTOR MACHINE	746
<i>Peifeng Liang ; Xin Yuan ; Weite Li ; Jinglu Hu</i>	
FULLY CONVOLUTIONAL NETWORK FOR HEAD DETECTION WITH DEPTH IMAGES	752
<i>Diego Ballotta ; Guido Borghi ; Roberto Vezzani ; Rita Cucchiara</i>	
VISUAL TREE CONVOLUTIONAL NEURAL NETWORK IN IMAGE CLASSIFICATION	758
<i>Yuntao Liu ; Yong Dou ; Ruochun Jin ; Peng Qiao</i>	
SUPERPIXEL-BASED FEATURE EXTRACTION AND FUSION METHOD FOR HYPERSPECTRAL AND LIDAR CLASSIFICATION	764
<i>Sen Jia ; Meng Zhang ; Junjian Xian ; Jiayue Zhuang ; Qiang Huang</i>	
MULTIPLE- INSTANCE LEARNING WITH EMPIRICAL ESTIMATION GUIDED INSTANCE SELECTION	770
<i>Liming Yuan ; Xianbin Wen ; Haixia Xu ; Lu Zhao</i>	
SEQUENTIAL FISH CATCH FORECASTING USING BAYESIAN STATE SPACE MODELS	776
<i>Yuya Kokaki ; Naohiro Tawara ; Tetsunori Kobayashi ; Kazuo Hashimoto ; Tetsuji Ogawa</i>	
EXTENDED MORPHOLOGICAL PROFILE-BASED GABOR WAVELETS FOR HYPERSPECTRAL IMAGE CLASSIFICATION	782
<i>Sen Jia ; Huimin Xie ; Xianglong Deng</i>	
FINE-GRAINED AGE GROUP CLASSIFICATION IN THE WILD	788
<i>Ke Zhang ; Na Liu ; Xingfang Yuan ; Xinyao Guo ; Ce Gao ; Zhenbing Zhao</i>	
REGION-SPECIFIC METRIC LEARNING FOR PERSON RE-IDENTIFICATION	794
<i>Min Cao ; Chen Chen ; Xiyuan Hu ; Silong Peng</i>	
ROBUST ADAPTIVE LOW-RANK AND SPARSE EMBEDDING FOR FEATURE REPRESENTATION	800
<i>Lei Wang ; Zhao Zhang ; Guangcan Liu ; Qiaolin Ye ; Jie Qin ; Meng Wang</i>	
RIEMANNIAN METRIC LEARNING BASED ON CURVATURE FLOW	806
<i>Yangyang Li ; Ruqian Lu</i>	
CASCADE DEEP NETWORKS FOR SPARSE LINEAR INVERSE PROBLEMS	812
<i>Huan Zhang ; Hong Shi ; Wenwu Wang</i>	
SEMI-SUPERVISED FEATURE SELECTION BY MUTUAL INFORMATION BASED ON KERNEL DENSITY ESTIMATION	818
<i>Siqi Xu ; Jianhua Dai ; Hong Shi</i>	
RENN: RULE-EMBEDDED NEURAL NETWORKS	824
<i>Hu Wang</i>	
OIL PRICE FORECASTING USING SUPERVISED GANS WITH CONTINUOUS WAVELET TRANSFORM FEATURES	830
<i>Zhaojie Luo ; Jinhui Chen ; Xiao Jing Cai ; Katsuyuki Tanaka ; Tetsuya Takiguchi ; Takuji Kinkyō ; Shigeyuki Hamori</i>	
THINNET: AN EFFICIENT CONVOLUTIONAL NEURAL NETWORK FOR OBJECT DETECTION	836
<i>Sen Cao ; Yazhou Liu ; Changxin Zhou ; Quansen Sun ; Lasang Pongsak ; Sheng Mei Shen</i>	
INDOOR SCENE LAYOUT ESTIMATION FROM A SINGLE IMAGE	842
<i>Hung Jin Lin ; Sheng-Wei Huang ; Shang-Hong Lai ; Chen-Kuo Chiang</i>	
REGION AND TEMPORAL DEPENDENCY FUSION FOR MULTI-LABEL ACTION UNIT DETECTION	848
<i>Chuanneng Mei ; Fei Jiang ; Ruimin Shen ; Qiaoping Hu</i>	
A METHOD OF AUTOMATICALLY GENERATING LABANOTATION FROM HUMAN MOTION CAPTURE DATA	854
<i>Jiayi Wang ; Zhenjiang Miao</i>	

RETRAINING: A SIMPLE WAY TO IMPROVE THE ENSEMBLE ACCURACY OF DEEP NEURAL NETWORKS FOR IMAGE CLASSIFICATION	860
<i>Kaikai Zhao ; Tetsu Matsukawa ; Einoshin Suzuki</i>	
FEATURE SELECTION ENSEMBLE FOR SYMBOLIC DATA CLASSIFICATION WITH AHP	868
<i>Meiqian Wang ; Xiaodong Yue ; Can Gao ; Yufei Chen</i>	
CLASSIFIER RECOMMENDATION USING DATA COMPLEXITY MEASURES	874
<i>Luís P. F. Garcia ; Ana C. Lorena ; Marcilio C. P. De Souto ; Tin Kam Ho</i>	
ZONE2VEC: DISTRIBUTED REPRESENTATION LEARNING OF URBAN ZONES	880
<i>Jiahong Du ; Yujun Chen ; Yue Wang ; Juhua Pu</i>	
AN EFFICIENT BUDGET ALLOCATION ALGORITHM FOR MULTI-CHANNEL ADVERTISING	886
<i>Xingfu Wang ; Pengcheng Li ; Ammar Hawbani</i>	
RECURRENT NEURAL NETWORKS FOR FINANCIAL TIME-SERIES MODELLING	892
<i>Gavin Tsang ; Jingjing Deng ; Xianghua Xie</i>	
NONLINEAR METRIC LEARNING THROUGH GEODESIC INTERPOLATION WITHIN LIE GROUPS	898
<i>Zhewei Wang ; Bibo Shi ; Charles D. Smith ; Jundong Liu</i>	
DYNAMIC TEXTURE SIMILARITY CRITERION	904
<i>Radek Richtr ; Michal Haindl</i>	
CROSS-DATASET DATA AUGMENTATION FOR CONVOLUTIONAL NEURAL NETWORKS TRAINING	910
<i>Andrea Gasparetto ; Dalila Ressi ; Filippo Bergamasco ; Mara Pistellato ; Luca Cosmo ; Marco Boschetti ; Enrico Ursella ; Andrea Albarelli</i>	
LEARNING CROSS-MODAL DEEP EMBEDDINGS FOR MULTI-OBJECT IMAGE RETRIEVAL USING TEXT AND SKETCH	916
<i>Sounak Dey ; Anjan Dutta ; Suman K. Ghosh ; Ernest Valveny ; Josep Lladós ; Umapada Pal</i>	
LEARNING PARALLEL CANONICAL CORRELATIONS FOR SCALE-ADAPTIVE LOW RESOLUTION FACE RECOGNITION	922
<i>Yun-Hao Yuan ; Zhao Zhang ; Yun Li ; Ji-Peng Qiang ; Bin Li ; Xiao-Bo Shen</i>	
FEATURE-FUSION HALS-BASED ALGORITHM FOR LINKED CP DECOMPOSITION MODEL IN APPLICATION TO JOINT EMG/MMG SIGNAL CLASSIFICATION	928
<i>Krzysztof Fonal ; Rafal Zdunek ; Andrzej Wolczowski</i>	
QUASIMETRIC GRAPH EDIT DISTANCE AS A COMPACT QUADRATIC ASSIGNMENT PROBLEM	934
<i>David B. Blumenthal ; Évariste Daller ; Sébastien Bougleux ; Luc Brun ; Johann Gamper</i>	
AN EFFICIENT DEEP REPRESENTATION BASED FRAMEWORK FOR LARGE-SCALE TERRAIN CLASSIFICATION	940
<i>Yupeng Yan ; Anand Rangarajan ; Sanjay Ranka</i>	
MULTI-TASK MICRO-EXPRESSION RECOGNITION COMBINING DEEP AND HANDCRAFTED FEATURES	946
<i>Chunlong Hu ; Dengbiao Jiang ; Haitao Zou ; Xin Zuo ; Yucheng Shu</i>	
DISCERNIBILITY MATRIX-BASED ENSEMBLE LEARNING	952
<i>Shuaichao Gao ; Jianhua Dai ; Hong Shi</i>	
SEMI-SUPERVISED HASHING FOR SEMI-PAIRED CROSS-VIEW RETRIEVAL	958
<i>Jun Yu ; Xiao-Jun Wu ; Josef Kittler</i>	
DIVGROUP: A DIVERSIFIED APPROACH TO DIVIDE COLLECTION OF PATTERNS INTO UNIFORM GROUPS	964
<i>Sambaran Bandyopadhyay ; Sharad Nandanwar ; Rishabh Deshmukh ; Narasimha Murty Musti</i>	
SCALABLE KNN SEARCH APPROXIMATION FOR TIME SERIES DATA	970
<i>Soukaïna Filali Boubrahimi ; Ruizhe Ma ; Berkay Aydın ; Shah Muhammad Hamdi ; Rafal Angryk</i>	
PYRAMID EMBEDDED GENERATIVE ADVERSARIAL NETWORK FOR AUTOMATED FONT GENERATION	976
<i>Donghui Sun ; Qing Zhang ; Jun Yang</i>	
DENSITY-ADAPTIVE KERNEL BASED RE-RANKING FOR PERSON RE-IDENTIFICATION	982
<i>Ruo-Pei Guo ; Chun-Guang Li ; Yonghua Li ; Jiaru Lin</i>	
SEMANTIC IMAGE SYNTHESIS VIA CONDITIONAL CYCLE-GENERATIVE ADVERSARIAL NETWORKS	988
<i>Xiyan Liu ; Gaofeng Meng ; Shiming Xiang ; Chunhong Pan</i>	
GENERALIZED FISHER DISCRIMINANT ANALYSIS AS A DIMENSIONALITY REDUCTION TECHNIQUE	994
<i>Yuechi Jiang ; Frank H. F. Leung</i>	

CLASS2STR: END TO END LATENT HIERARCHY LEARNING	1000
<i>Sohan Saha ; Girish Varma ; C.V. Jawahar</i>	
ADAPTIVE TILING: APPLYING FIXED-SIZE SYSTOLIC ARRAYS TO SPARSE CONVOLUTIONAL NEURAL NETWORKS	1006
<i>H. T. Kung ; Bradley Mcdanel ; Sai Qian Zhang</i>	
A GAME- THEORETIC HYPER-GRAPH MATCHING ALGORITHM	1012
<i>Jian Hou ; Marcello Pelillo</i>	
KERNEL-WEIGHTED GRAPH CONVOLUTIONAL NETWORK: A DEEP LEARNING APPROACH FOR TRAFFIC FORECASTING	1018
<i>Qi Zhang ; Qizhao Jin ; Jianlong Chang ; Shiming Xiang ; Chunhong Pan</i>	
DEPTH-BASED SUBGRAPH CONVOLUTIONAL NEURAL NETWORKS	1024
<i>Chuanyu Xu ; Dong Wang ; Zhihong Zhang ; Beizhan Wang ; Da Zhou ; Guijun Ren ; Lu Bai ; Lixin Cui ; Edwin R. Hancock</i>	
A DEEP HYBRID GRAPH KERNEL THROUGH DEEP LEARNING NETWORKS	1030
<i>Lixin Cui ; Lu Bai ; Luca Rossi ; Yue Wang ; Yuhang Jiao ; Edwin R. Hancock</i>	
VARIATIONAL FUSION OF LIGHT FIELD AND PHOTOMETRIC STEREO FOR PRECISE 3D SENSING WITHIN A MULTI-LINE SCAN FRAMEWORK	1036
<i>Doris Antensteiner ; Svorad Štöle ; Thomas Pock</i>	
REPRESENTING A PARTIALLY OBSERVED NON-RIGID 3D HUMAN USING EIGEN-TEXTURE AND EIGEN-DEFORMATION	1043
<i>Ryosuke Kimura ; Akihiko Sayo ; Fabian Lorenzo Dayrit ; Yuta Nakashima ; Hiroshi Kawasaki ; Ambrosio Blanco ; Katsushi Ikeuchi</i>	
NON-RIGID RECONSTRUCTION WITH A SINGLE MOVING RGB-D CAMERA	1049
<i>Shafeeq Elanattil ; Peyman Moghadam ; Sridha Sridharan ; Clinton Fookes ; Mark Cox</i>	
3D SHAPE SEGMENTATION BASED ON VIEWPOINT ENTROPY AND PROJECTIVE FULLY CONVOLUTIONAL NETWORKS FUSING MULTI-VIEW FEATURES	1056
<i>Panpan Shui ; Pengyu Wang ; Fenggen Yu ; Bingyang Hu ; Yuan Gan ; Kun Liu ; Yan Zhang</i>	
ROBUST ECG BIOMETRICS USING TWO-STAGE MODEL	1062
<i>Bo Wu ; Gongping Yang ; Lu Yang ; Yilong Yin</i>	
A NOISE-ROBUST SELF-ADAPTIVE MULTITARGET SPEAKER DETECTION SYSTEM	1068
<i>Siqi Zheng ; Jianzong Wang ; Jing Xiao ; Wei-Ning Hsu ; James Glass</i>	
GLOBAL AND LOCAL CONSISTENT AGE GENERATIVE ADVERSARIAL NETWORKS	1073
<i>Peipei Li ; Yibo Hu ; Qi Li ; Ran He ; Zhenan Sun</i>	
GP-GAN: GENDER PRESERVING GAN FOR SYNTHESIZING FACES FROM LANDMARKS	1079
<i>Xing Di ; Vishwanath A. Sindagi ; Vishal M. Patel</i>	
HOW DO CONVOLUTIONAL NEURAL NETWORKS LEARN DESIGN?	1085
<i>Shailza Jolly ; Brian Kenji Iwana ; Ryohei Kuroki ; Seiichi Uchida</i>	
DOCUMENT IMAGES WATERMARKING FOR SECURITY ISSUE USING FULLY CONVOLUTIONAL NETWORKS	1091
<i>Cu Vinh Loc ; Jean-Christophe Burie ; Jean-Marc Ogier</i>	
ALIGNING TEXT AND DOCUMENT ILLUSTRATIONS: TOWARDS VISUALLY EXPLAINABLE DIGITAL HUMANITIES	1097
<i>Lorenzo Baraldi ; Marcella Cornia ; Costantino Grana ; Rita Cucchiara</i>	
STAFF LINE REMOVAL USING GENERATIVE ADVERSARIAL NETWORKS	1103
<i>Aishik Konwer ; Ayan Kumar Bhunia ; Abir Bhowmick ; Ankan Kumar Bhunia ; Prithaj Banerjee ; Partha Pratim Roy ; Umapada Pal</i>	
DEEP TEMPORAL FEATURE ENCODING FOR ACTION RECOGNITION	1109
<i>Lin Li ; Zhaoxiang Zhang ; Yan Huang ; Liang Wang</i>	
LEARNING AN ORDER PRESERVING IMAGE SIMILARITY THROUGH DEEP RANKING	1115
<i>Nitin Gupta ; Shashank Mujumdar ; Suranjana Samanta ; Sameep Mehta</i>	
ANOMALY DETECTION VIA MINIMUM LIKELIHOOD GENERATIVE ADVERSARIAL NETWORKS	1121
<i>Chu Wang ; Yan-Ming Zhang ; Cheng-Lin Liu</i>	
DEEP GENERATIVE ADVERSARIAL NETWORKS FOR THE SPARSE SIGNAL DENOISING	1127
<i>Kailun Wu ; Changshui Zhang</i>	
SPATIALLY COHERENT MATCHING FOR ROBUST REGISTRATION	1133
<i>Gang Wang ; Yufei Chen ; Haotian Zhang</i>	
MASKED LABEL LEARNING FOR OPTICAL FLOW REGRESSION	1139
<i>Guorun Yang ; Zhidong Deng ; Shiyao Wang ; Zeping Li</i>	
SALIENCY GUIDED FAST INTERPOLATION FOR LARGE DISPLACEMENT OPTICAL FLOW	1145
<i>Yueran Zu ; Ke Gao ; Xiuguo Bao ; Wenzhong Tang</i>	

BTF COMPOUND TEXTURE MODEL WITH NON- PARAMETRIC CONTROL FIELD	1151
<i>Michal Haindl ; Vojtech Havlicek</i>	
CONVEXITY INVARIANCE OF VOXEL OBJECTS UNDER RIGID MOTIONS	1157
<i>Phuc Ngo ; Nicolas Passat ; Yukiko Kenmochi ; Isabelle Debled-Rennesson</i>	
MULTI-SCALE CROSS-BAND ENCODING OF SECTORED LOCAL BINARY PATTERN FOR ROBUST TEXTURE CLASSIFICATION	1163
<i>Tiecheng Song ; Lin Luo ; Liangliang Xin ; Chenqiang Gao</i>	
LOCALITY PRESERVING DISCRIMINATIVE COMPLEX-VALUED LATENT VARIABLE MODEL	1169
<i>Sih-Huei Chen ; Yuan-Shan Lee ; Jia-Ching Wang</i>	
SEGMENTATION EDIT DISTANCE	1175
<i>Daniel Pucher ; Walter G. Kropatsch</i>	
AN AUTOMATED AIRWAY SEGMENTATION ALGORITHM FOR CT IMAGES USING TOPOLOGICAL LEAKAGE DETECTION AND VOLUME FREEZING	1181
<i>Syed Ahmed Nadeem ; Eric A. Hoffman ; Punam K. Saha</i>	
A METHOD FOR PET-CT LUNG CANCER SEGMENTATION BASED ON IMPROVED RANDOM WALK	1187
<i>Zhe Liu ; Yuqing Song ; Charlie Maere ; Qingfeng Liu ; Yan Zhu ; Hu Lu ; Deqi Yuan</i>	
MEDICAL KNOWLEDGE CONSTRAINED SEMANTIC BREAST ULTRASOUND IMAGE SEGMENTATION	1193
<i>Kuan Huang ; H. D. Cheng ; Yingtao Zhang ; Boyu Zhang ; Ping Xing ; Chunping Ning</i>	
INTERACTIVE SEGMENTATION OF GLIOBLASTOMA FOR POST-SURGICAL TREATMENT FOLLOW-UP	1199
<i>Ashis Kumar Dhara ; Erik Arvids ; Markus Fahlström ; Johan Wikström ; Elna-Marie Larsson ; Robin Strand</i>	
COMMON RANDOM SUBGRAPH MODELING USING MULTIPLE INSTANCE LEARNING	1205
<i>Tao Xu ; David Chiu ; Iker Gondra</i>	
FAST DESCRIPTOR EXTRACTION FOR CONTEXTLESS 3D REGISTRATION USING A FULLY CONVOLUTIONAL NETWORK	1211
<i>Timothy Garrett ; Rafael Radkowski</i>	
ROTATIONAL INVARIANT DISCRIMINANT SUBSPACE LEARNING FOR IMAGE CLASSIFICATION	1217
<i>Qiaolin Ye ; Zhao Zhang</i>	
FRELU: FLEXIBLE RECTIFIED LINEAR UNITS FOR IMPROVING CONVOLUTIONAL NEURAL NETWORKS	1223
<i>Suo Qiu ; Xiangmin Xu ; Bolun Cai</i>	
ADAPTIVE LATENT REPRESENTATION FOR MULTI-VIEW SUBSPACE LEARNING	1229
<i>Yuemei Zhang ; Xiumei Wang ; Xinbo Gao</i>	
APPEARANCE-BASED DATA AUGMENTATION FOR IMAGE DATASETS USING CONTRAST PRESERVING SAMPLING	1235
<i>Alishan Merchant ; Tahir Syed ; Behraj Khan ; Rumaisah Munir</i>	
LOCAL BINARY PATTERNS FOR GRAPH CHARACTERIZATION	1241
<i>Muhammad Jawad ; Furqan Aziz ; Edwin Hancock</i>	
NONNEGATIVE AND ADAPTIVE MULTI-VIEW CLUSTERING	1247
<i>Peng Zou ; Fanzhang Li ; Li Zhang</i>	
STABILIZING ACTOR POLICIES BY APPROXIMATING ADVANTAGE DISTRIBUTIONS FROM K CRITICS	1253
<i>Alfonso B. Labao ; Prospero C. Naval</i>	
SINGLE-IMAGE DEHAZING ALGORITHM BASED ON CONVOLUTIONAL NEURAL NETWORKS	1259
<i>Jinsheng Xiao ; Li Luo ; Enyu Liu ; Junfeng Lei ; Reinhard Klette</i>	
DRIVING MANEUVER DETECTION VIA SEQUENCE LEARNING FROM VEHICLE SIGNALS AND VIDEO IMAGES	1265
<i>Xishuai Peng ; Ruirui Liu ; Yi Lu Murphey ; Simon Stent ; Yuanxiang Li</i>	
BACKGROUND SUBTRACTION VIA 3D CONVOLUTIONAL NEURAL NETWORKS	1271
<i>Yongqiang Gao ; Huayue Cai ; Xiang Zhang ; Long Lan ; Zhigang Luo</i>	
UNIVERSAL PERTURBATION GENERATION FOR BLACK-BOX ATTACK USING EVOLUTIONARY ALGORITHMS	1277
<i>Sivy Wang ; Yucheng Shi ; Yahong Han</i>	
PROBABILISTIC GRAPH EMBEDDING FOR UNSUPERVISED DOMAIN ADAPTATION	1283
<i>Pan Xiao ; Bo Du ; Shuang Yun ; Xue Lit ; Yipeng Zhang ; Jia Wu</i>	

RESERVOIR COMPUTING WITH UNTRAINED CONVOLUTIONAL NEURAL NETWORKS FOR IMAGE RECOGNITION	1289
<i>Zhiqiang Tong ; Gouhei Tanaka</i>	
EMD-BASED ENTROPY FEATURES FOR MICRO-DOPPLER MINI-UAV CLASSIFICATION	1295
<i>Xinyue Ma ; Beom-Seok Oh ; Lei Sun ; Kar-Ann Toh ; Zhiping Lin</i>	
CONTEXT-AWARE ATTENTION LSTM NETWORK FOR FLOOD PREDICTION	1301
<i>Yirui Wu ; Zhaoyang Liu ; Weigang Xu ; Jun Feng ; Shivakumara Palaiahnakote ; Tong Lu</i>	
AN ONLINE KERNEL SELECTION WRAPPER VIA MULTI-ARMED BANDIT MODEL	1307
<i>Junfan Li ; Shizhong Liao</i>	
VARIATIONAL BAYES BLOCK SPARSE MODELING WITH CORRELATED ENTRIES	1313
<i>S. Sharma ; S. Chaudhury ; Jayadeva</i>	
SEMI-SUPERVISED CONVOLUTIONAL NEURAL NETWORKS WITH LABEL PROPAGATION FOR IMAGE CLASSIFICATION	1319
<i>Lin Chen ; Shiqi Yu ; Meng Yang</i>	
OCCLUDED JOINTS RECOVERY IN 3D HUMAN POSE ESTIMATION BASED ON DISTANCE MATRIX	1325
<i>Xiang Guo ; Yuchao Dai</i>	
SCALABLE SEMI-SUPERVISED LEARNING BY GRAPH CONSTRUCTION WITH APPROXIMATE ANCHORS EMBEDDING	1331
<i>Hao Zhu ; Mingxue Xia</i>	
FACIAL ATTRIBUTE EDITING BY LATENT SPACE ADVERSARIAL VARIATIONAL AUTOENCODERS	1337
<i>Defang Li ; Min Zhang ; Weifu Chen ; Guocan Feng</i>	
MMGAN: MANIFOLD-MATCHING GENERATIVE ADVERSARIAL NETWORKS	1343
<i>Noseong Park ; Anshu Anand ; Joel Ruben Antony Moniz ; Kookjin Lee ; Jaegul Choo ; David Keetae Park ; Tanmoy Chakraborty ; Hongkyu Park ; Youngmin Kim</i>	
MULTI-SOURCE DOMAIN ADAPTATION FOR FACE RECOGNITION	1349
<i>Haiyang Yi ; Zhi Xu ; Yimin Wen ; Zhigang Fan</i>	
DOMAIN TRANSLATION WITH CONDITIONAL GANS: FROM DEPTH TO RGB FACE-TO-FACE	1355
<i>Matteo Fabbri ; Guido Borghi ; Fabio Lanzi ; Roberto Vezzani ; Simone Calderara ; Rita Cucchiara</i>	
TEMPORAL PATTERN LOCALIZATION USING MIXED INTEGER LINEAR PROGRAMMING	1361
<i>Rui Zhao ; Gerwin Schalk ; Qiang Ji</i>	
NET4LAP: NEURAL LAPLACIAN REGULARIZATION FOR RANKING AND RE-RANKING	1366
<i>M. Curado ; F. Escolano ; M.A. Lozano ; E.R. Hancock</i>	
PART-BASED MULTI-STREAM MODEL FOR VEHICLE SEARCHING	1372
<i>Ya Sun ; Minxian Li ; Jianfeng Lu</i>	
DYNAMIC LEARNING RATE FOR NEURAL NETWORKS: A FIXED-TIME STABILITY APPROACH	1378
<i>Rodrigo Aldana ; Leobardo Campos-Macias ; Julio Zamora ; David Gomez-Gutierrez ; Adan Cruz</i>	
CONVOLUTIONAL NETWORKS FOR SEMANTIC HEADS SEGMENTATION USING TOP-VIEW DEPTH DATA IN CROWDED ENVIRONMENT	1384
<i>Daniele Liciotti ; Marina Paolanti ; Rocco Pietrini ; Emanuele Frontoni ; Primo Zingaretti</i>	
CONDITIONAL INFORMATION GAIN NETWORKS	1390
<i>Ufuk Can Bicici ; Cem Keskin ; Lale Akarun</i>	
FACE AGING WITH IMPROVED INVERTIBLE CONDITIONAL GANS	1396
<i>Li Jia ; Yonghong Song ; Yuanlin Zhang</i>	
IMU-BASED ROBUST HUMAN ACTIVITY RECOGNITION USING FEATURE ANALYSIS, EXTRACTION, AND REDUCTION	1402
<i>Omid Dehzangi ; Vaishali Sahu</i>	
MULTI-LABEL CLASSIFICATION OF STEM CELL MICROSCOPY IMAGES USING DEEP LEARNING	1408
<i>Adam Witmer ; Bir Bhanu</i>	
D-NND: A HIERARCHICAL DENSITY CLUSTERING METHOD VIA NEAREST NEIGHBOR DESCENT	1414
<i>Teng Qiu ; Chaoyi Li ; Yongjie Li</i>	
DEEP AGE ESTIMATION MODEL STABILIZATION FROM IMAGES TO VIDEOS	1420
<i>Zhipeng Ji ; Congyan Lang ; Kai Li ; Junliang Xing</i>	
PERSON RE-IDENTIFICATION WITH WEIGHTED SPATIAL-TEMPORAL FEATURES	1426
<i>Dongyu Zhang ; Rongcong Chen ; Zhilin Qiu ; Wei Zhang ; Qing Wang</i>	
TRANSDUCTIVE LABEL AUGMENTATION FOR IMPROVED DEEP NETWORK LEARNING	1432
<i>Ismail Elezi ; Alessandro Torcinovich ; Sebastiano Vascon ; Marcello Pelillo</i>	

FAST SKIN LESION SEGMENTATION VIA FULLY CONVOLUTIONAL NETWORK WITH RESIDUAL ARCHITECTURE AND CRF	1438
<i>Wenfeng Luo ; Meng Yang</i>	
IMPROVED ROBUST DISCRIMINANT ANALYSIS FOR FEATURE EXTRACTION	1444
<i>Xiaobo Chen</i>	
AN IMPROVED SELF-REPRESENTATION APPROACH FOR MISSING VALUE IMPUTATION	1450
<i>Xiaobo Chen</i>	
CONVOLUTIONAL DISCRIMINANT ANALYSIS	1456
<i>Guoqiang Zhong ; Yan Zheng ; Xu-Yao Zhang ; Hongxu Wei ; Xiao Ling</i>	
MERGING NEURONS FOR STRUCTURE COMPRESSION OF DEEP NETWORKS	1462
<i>Guoqiang Zhong ; Hui Yao ; Huiyu Zhou</i>	
EFFECTS OF SAMPLING SKEWNESS OF THE IMPORTANCE-WEIGHTED RISK ESTIMATOR ON MODEL SELECTION	1468
<i>Wouter Kouw ; Marco Loog</i>	
A CONVOLUTIONAL NEURAL NETWORK APPROACH FOR ESTIMATING TROPICAL CYCLONE INTENSITY USING SATELLITE-BASED INFRARED IMAGES	1474
<i>Jay Samuel Combinido ; John Robert Mendoza ; Jeffrey Aborot</i>	
DRIVER DISTRACTION DETECTION USING MEL CEPSTRUM REPRESENTATION OF GALVANIC SKIN RESPONSES AND CONVOLUTIONAL NEURAL NETWORKS*	1481
<i>Omid Dehzangi ; Mojtaba Taherisadr</i>	
PREDICTING TRAFFIC FLOW VIA ENSEMBLE DEEP CONVOLUTIONAL NEURAL NETWORKS WITH SPATIO-TEMPORAL JOINT RELATIONS	1487
<i>Jiaxin Hou ; Jing Chen ; Shijie Liao ; Junhao Wen ; Qingyu Xiong</i>	
A JOINT OPTIMIZATION FRAMEWORK OF LOW-DIMENSIONAL PROJECTION AND COLLABORATIVE REPRESENTATION FOR DISCRIMINATIVE CLASSIFICATION	1493
<i>Xiaofeng Liu ; Zhaofeng Li ; Lingsheng Kong ; Zhihui Diao ; Junliang Yan ; Yang Zou ; Chao Yang ; Ping Jia ; Jane You</i>	
ACTION CLASSIFICATION VIA CONCEPTS AND ATTRIBUTES	1499
<i>Amir Rosenfeld ; Shimon Ullman</i>	
RELATIONNET: LEARNING DEEP-ALIGNED REPRESENTATION FOR SEMANTIC IMAGE SEGMENTATION	1506
<i>Yueqing Zhuang ; Li Tao ; Fan Yang ; Cong Ma ; Ziwei Zhang ; Hui Zhu Jia ; Xiaodong Xie</i>	
COLOR IMAGE RECONSTRUCTION WITH PERCEPTUAL COMPRESSIVE SENSING	1512
<i>Jiang Du ; Xuemei Xie ; Chenye Wang ; Guangming Shi</i>	
LOCAL COMPACT BINARY PATTERNS FOR BACKGROUND SUBTRACTION IN COMPLEX SCENES	1518
<i>Wei He ; Yongkwan Kim ; Jianhui Wu ; Guoyun Zhang ; Qi Qi ; Longyuan Guo ; Bing Tu ; Feng Huang</i>	
FACIAL EXPRESSION RECOGNITION FOR DIFFERENT POSE FACES BASED ON SPECIAL LANDMARK DETECTION	1524
<i>Wenqi Wu ; Yingjie Yin ; Yingying Wang ; Xingang Wang ; De Xu</i>	
PLANT IDENTIFICATION FROM BARK: A TEXTURE DESCRIPTION BASED ON STATISTICAL MACRO BINARY PATTERN	1530
<i>Safia Boudra ; Itheri Yahiaoui ; Ali Behloul</i>	
PASSENGER IN VEHICLE COUNTING METHOD OF HOV/HOT SYSTEM	1536
<i>Shinichi Miyamoto</i>	
KERNEL DUAL LINEAR REGRESSION FOR FACE IMAGE SET CLASSIFICATION	1542
<i>Xizhan Gao ; Quansen Sun ; Haitao Xu ; Yanmeng Li</i>	
FLEXIBLE ROTATION INVARIANT BASES FROM ORTHOGONAL MOMENTS	1548
<i>Bo Yang ; Xiaofeng Chen ; Yuye Zhang</i>	
ANCHOR FREE NETWORK FOR MULTI-SCALE FACE DETECTION	1554
<i>Chengji Wang ; Zhiming Luo ; Sheng Lian ; Shaozi Li</i>	
3DMAX-NET: A MULTI-SCALE SPATIAL CONTEXTUAL NETWORK FOR 3D POINT CLOUD SEMANTIC SEGMENTATION	1560
<i>Yanxin Ma ; Yulan Guo ; Yinjie Lei ; Min Lu ; Jun Zhang</i>	
BEYOND TWO-STREAM: SKELETON-BASED THREE-STREAM NETWORKS FOR ACTION RECOGNITION IN VIDEOS	1567
<i>Jianfeng Xu ; Kazuyuki Tasaka ; Hiromasa Yanagihara</i>	
SPARSE REPRESENTATION AND WEIGHTED CLUSTERING BASED ABNORMAL BEHAVIOR DETECTION	1574
<i>Dongliang Jin ; Songhao Zhu ; Songsong Wu ; Xiaoyuan Jing</i>	
WEAK SUPERVISED LEARNING BASED ABNORMAL BEHAVIOR DETECTION	1580
<i>Xian Sun ; Songhao Zhu ; Songsong Wu ; Xiaoyuan Jing</i>	

A NEW METHOD FOR FACE ALIGNMENT UNDER EXTREME POSES AND OCCLUSION	1586
<i>Jun Li ; Qiongling Xiao ; Ruoyu Yang</i>	
LATENT LINEAR DYNAMICS FOR MODELING PEDESTRIAN BEHAVIORS	1592
<i>Devendra Dhaka ; Masato Ishii ; Atsushi Sato</i>	
SCUT-FBP5500: A DIVERSE BENCHMARK DATASET FOR MULTI-PARADIGM FACIAL BEAUTY PREDICTION	1598
<i>Lingyu Liang ; LuoJun Lin ; Lianwen Jin ; Duorui Xie ; Mengru Li</i>	
FAST AND ROBUST POSE ESTIMATION ALGORITHM FOR BIN PICKING USING POINT PAIR FEATURE	1604
<i>Mingyu Li ; Koichi Hashimoto</i>	
HYBRID 3D SURFACE DESCRIPTION WITH GLOBAL FRAMES AND LOCAL SIGNATURES OF HISTOGRAMS	1610
<i>Zhiqiang Shen ; Xin Ma ; Xianglei Zeng</i>	
A STRUCTURAL APPROACH TO PERSON RE-IDENTIFICATION PROBLEM	1616
<i>Amal Mahboubi ; Luc Brun ; Donatello Conte</i>	
PRE-TRAINED VGGNET ARCHITECTURE FOR REMOTE-SENSING IMAGE SCENE CLASSIFICATION	1622
<i>Usman Muhammad ; Weiqiang Wang ; Shahbaz Pervaiz Chattha ; Sajid Ali</i>	
LONG-TERM OBJECT TRACKING WITH INSTANCE SPECIFIC PROPOSALS	1628
<i>Hao Liu ; Qingyong Hu ; Biao Li ; Yulan Guo</i>	
WHICH PART IS BETTER: MULTI-PART COMPETITION NETWORK FOR PERSON RE-IDENTIFICATION	1634
<i>Peng Du ; Yonghong Song ; Yuanlin Zhang</i>	
EXPLAIN BLACK-BOX IMAGE CLASSIFICATIONS USING SUPERPIXEL-BASED INTERPRETATION	1640
<i>Yi Wei ; Ming-Ching Chang ; Yiming Ying ; Ser Nam Lim ; Siwei Lyu</i>	
IMPROVED CORRELATION FILTER TRACKING WITH HARD NEGATIVE MINING	1646
<i>Chunguang Qie ; GuanJun Guo ; Yan Yan ; Liming Zhang ; Hanzi Wang</i>	
A RIGOROUS SOLUTION FOR CLOSED-FORM CORRELATION FILTER TRACKING	1652
<i>Dongdong Li ; Gongjian Wen ; Yangliu Kuai</i>	
INCREMENTAL 3D LINE SEGMENT EXTRACTION FROM SEMI-DENSE SLAM	1658
<i>Shida He ; Xuebin Qin ; Zichen Zhang ; Martin Jagersand</i>	
ROBUST LOCALITY-CONSTRAINED LABEL CONSISTENT K-SVD BY JOINT SPARSE EMBEDDING	1664
<i>Zhao Zhang ; Weiming Jiang ; Sheng Li ; Jie Qin ; Guangcan Liu ; Shuicheng Yan</i>	
PERCEPTUAL FACE COMPLETION USING A LOCAL-GLOBAL GENERATIVE ADVERSARIAL NETWORK	1670
<i>Ruijun Ma ; Haifeng Hu</i>	
JOINT IDENTIFICATION-VERIFICATION MODEL FOR VISUAL TRACKING	1676
<i>Min Wu ; Yufei Zha ; Yuanqiang Zhang ; Tao Ku ; Lichao Zhang ; Bin Chen</i>	
INCREMENTAL KERNEL NULL FOLEY-SAMMON TRANSFORM FOR PERSON RE-IDENTIFICATION	1683
<i>Xinyu Huang ; Jiaolong Xu ; Gang Guo</i>	
SIMULTANEOUS CONTEXT FEATURE LEARNING AND HASHING FOR LARGE SCALE LOOP CLOSURE DETECTION	1689
<i>Zhiheng Fu ; Yulan Guo ; Wei An</i>	
FROM TEXT TO VIDEO: EXPLOITING MID-LEVEL SEMANTICS FOR LARGE-SCALE VIDEO CLASSIFICATION	1695
<i>Ji Zhang ; Kuizhi Mei ; Xiao Wang ; Yu Zheng ; Jianping Fan</i>	
OCCLUSION HANDLING HUMAN DETECTION WITH REFOCUSED IMAGES	1701
<i>Hirokatsu Kataoka ; Shuheih Ohki ; Kenji Iwata ; Yutaka Satoh</i>	
FOURIER TRANSFORM BASED FEATURES FOR CLEAN AND POLLUTED WATER IMAGE CLASSIFICATION	1707
<i>Xuerong Wu ; Palaiahnakote Shivakumara ; Liping Zhu ; Hualu Zhang ; Jie Shi ; Tong Lu ; Umapada Pal ; Michael Blumenstein</i>	
A ROBUST AND EFFICIENT METHOD FOR LICENSE PLATE RECOGNITION	1713
<i>Ajin Meng ; Wei Yang ; Zhenbo Xu ; Huan Huang ; Liusheng Huang ; Changchun Ying</i>	
OBJECT-ADAPTIVE LSTM NETWORK FOR VISUAL TRACKING	1719
<i>Yihan Du ; Yan Yan ; Si Chen ; Yang Hua ; Hanzi Wang</i>	
CONTEXT-AWARE AND DEPTHWISE-BASED DETECTION ON ORBIT FOR REMOTE SENSING IMAGE	1725
<i>Yanmei Fu ; Fengge Wu ; Junsuo Zhao</i>	

WHICH CONTENT IN A BOOKLET IS HE/SHE READING? READING CONTENT ESTIMATION USING AN INDOOR SURVEILLANCE CAMERA	1731
<i>Yasutomo Kawanishi ; Hiroshi Murase ; Jianfeng Xu ; Kazuyuki Tasaka ; Hiromasa Yanagihara</i>	
HYBRID SPARSE SUBSPACE CLUSTERING FOR VISUAL TRACKING	1737
<i>Lin Ma ; Zhihua Liu</i>	
A CO-OCCURRENCE BACKGROUND MODEL WITH HYPOTHESIS ON DEGRADATION MODIFICATION FOR OBJECT DETECTION IN STRONG BACKGROUND CHANGES	1743
<i>Wenjun Zhou ; Shun'ichi Kaneko ; Manabu Hashimoto ; Yutaka Satoh ; Dong Liang</i>	
HIGH-QUALITY AND MEMORY-EFFICIENT VOLUMETRIC INTEGRATION OF DEPTH MAPS USING PLANE PRIORS	1749
<i>Yangdong Liu ; Wei Gao ; Zhanyi Hu</i>	
APPEARANCE VARIATION INSENSITIVE STATE REGRESSION FOR VISUAL TRACKING	1755
<i>Lin Ma ; Zhihua Liu</i>	
ONLINE TEMPORAL CALIBRATION OF CAMERA AND IMU USING NONLINEAR OPTIMIZATION	1761
<i>Jinxu Liu ; Zhanyi Hu ; Wei Gao</i>	
LOCAL REGRESSION BASED HOURGLASS NETWORK FOR HAND POSE ESTIMATION FROM A SINGLE DEPTH IMAGE	1767
<i>Jia Li ; Zengfu Wang</i>	
ACTION RECOGNITION METHOD BASED ON SETS OF TIME WARPED ARMA MODELS	1773
<i>Naoya Sogi ; Kazuhiro Fukui</i>	
MULTI-SPECTRAL FUSION AND DENOISING OF RGB AND NIR IMAGES USING MULTI-SCALE WAVELET ANALYSIS	1779
<i>Haonan Su ; Cheolkon Jung</i>	
VISUAL LOCALIZATION IN CHANGING ENVIRONMENTS USING PLACE RECOGNITION TECHNIQUES	1785
<i>Zhe Xin ; Yinghao Cai ; Shaojun Cai ; Jixiang Zhang ; Yiping Yang ; Yanqing Wang</i>	
PROBABILISTIC VOTING FOR SEQUENCE BASED VISUAL PLACE RECOGNITION	1791
<i>Zhe Xin ; Yinghao Cai ; Jixiang Zhang ; Yiping Yang ; Yanqing Wang</i>	
CONVOLUTIONAL FEATURES-BASED CRF GRAPH MATCHING FOR TRACKING OF DENSELY PACKED CELLS	1797
<i>Weili Qian ; Yangliu Wei ; Xueping Wang ; Min Liu</i>	
SPCNET: SCALE POSITION CORRELATION NETWORK FOR END-TO-END VISUAL TRACKING	1803
<i>Qiang Wang ; Jin Gao ; Mengdan Zhang ; Junliang Xing ; Weiming Hut</i>	
ONLINE MULTI-TARGET TRACKING WITH TENSOR-BASED HIGH-ORDER GRAPH MATCHING	1809
<i>Zongwei Zhou ; Junliang Xing ; Mengdan Zhang ; Weiming Hu</i>	
DENSE RECEPTIVE FIELD FOR OBJECT DETECTION	1815
<i>Yongqiang Yao ; Yuan Dong ; Zesang Huang ; Hongliang Bai</i>	
ONLINE LEARNING OF SPATIAL-TEMPORAL CONVOLUTION RESPONSE FOR ROBUST REAL-TIME TRACKING	1821
<i>Jinglin Zhou ; Rong Wang ; Jianwei Ding</i>	
PARTIAL DESCRIPTOR UPDATE AND ISOLATED POINT AVOIDANCE BASED TEMPLATE UPDATE FOR HIGH FRAME RATE AND ULTRA-LOW DELAY DEFORMATION MATCHING	1827
<i>Yuhao Xu ; Tingting Hu ; Songlin Du ; Takeshi Ikenaga</i>	
HUMAN ROUTINE CHANGE DETECTION USING BAYESIAN MODELLING	1833
<i>Yangdi Xu ; Dima Damen</i>	
ATTENTION-BASED NEURAL NETWORK FOR TRAFFIC SIGN DETECTION	1839
<i>Jing Zhang ; Le Hui ; Jianfeng Lu ; Yuhua Zhu</i>	
DEPTH-ASSISTED REFINENET FOR INDOOR SEMANTIC SEGMENTATION	1845
<i>Manyu Chang ; Feng Guo ; Rongrong Ji</i>	
ROBUST PROJECTIVE LOW-RANK AND SPARSE REPRESENTATION BY ROBUST DICTIONARY LEARNING	1851
<i>Jiahuan Ren ; Zhao Zhang ; Sheng Li ; Guangcan Liu ; Meng Wang ; Shuicheng Yan</i>	
A MULTI-PART CONVOLUTIONAL ATTENTION NETWORK FOR FINE-GRAINED IMAGE RECOGNITION	1857
<i>Weilin Zhong ; Linfeng Jiang ; Tao Zhang ; Jinsheng Ji ; Huilin Xiong</i>	
IMPROVING IMAGE CLASSIFICATION PERFORMANCE WITH AUTOMATICALLY HIERARCHICAL LABEL CLUSTERING	1863
<i>Zhiqiang Chen ; Changde Du ; Lijie Huang ; Dan Li ; Huiguang He</i>	

MSFD: MULTI-SCALE RECEPTIVE FIELD FACE DETECTOR	1869
<i>Qiushan Guo ; Yuan Dong ; Yu Guo ; Hongliang Bai</i>	
GENERIC CALIBRATION OF CAMERAS WITH NON-PARALLEL OPTICAL ELEMENTS	1875
<i>Peter Fasogbon ; Lixin Fan</i>	
EM-SLAM: A FAST AND ROBUST MONOCULAR SLAM METHOD FOR EMBEDDED SYSTEMS	1882
<i>Yirui Wu ; Zhikai Li ; Shivakumara Palaiahnakote ; Tong Lu</i>	
NON-NEGATIVE SUBSPACE REPRESENTATION LEARNING SCHEME FOR CORRELATION FILTER BASED TRACKING	1888
<i>Tianyang Xu ; Xiao-Jun Wu ; Josef Kittler</i>	
RADIAL LENS DISTORTION CORRECTION BY ADDING A WEIGHT LAYER WITH INVERTED FOVEAL MODELS TO CONVOLUTIONAL NEURAL NETWORKS	1894
<i>Yongjie Shi ; Danfeng Zhang ; Jingsi Wen ; Xin Tong ; Xianghua Ying ; Hongbin Zha</i>	
SEMI-SUPERVISED LEARNING VIA CONVOLUTIONAL NEURAL NETWORK FOR HYPERSPECTRAL IMAGE CLASSIFICATION	1900
<i>Zhigang Ling ; Xiuxin Li ; Wen Zou ; Siyu Guo</i>	
SINGLE SHOT FEATURE AGGREGATION NETWORK FOR UNDERWATER OBJECT DETECTION	1906
<i>Lu Zhang ; Xu Yang ; Zhiyong Liu ; Lu Qi ; Hao Zhou ; Charles Chiu</i>	
VISUAL TRACKING BY COMBINING THE STRUCTURE-AWARE NETWORK AND SPATIAL-TEMPORAL REGRESSION	1912
<i>Dezhong Xu ; Lifang Wu ; Meng Jian ; Qi Wang</i>	
GENERATIVE BAND FEATURE ENHANCEMENT FOR HYPERSPECTRAL IMAGE CLASSIFICATION	1918
<i>Jiming Li ; Fangjie Chen ; Dongyong Yang</i>	
A SELECTIVE TRACKING AND DETECTION FRAMEWORK WITH TARGET ENHANCED FEATURE	1924
<i>Xinyao Ding ; Lian Li ; Xin Zhang</i>	
VOTING-BASED INCREMENTAL STRUCTURE-FROM-MOTION	1929
<i>Hainan Cui ; Shuhan Shen ; Wei Gao</i>	
OBJECT CLASSIFICATION OF REMOTE SENSING IMAGES BASED ON PARTIAL RANDOMNESS SUPERVISED DISCRETE HASHING	1935
<i>Ting Kang ; Yazhou Liu ; Quansen Sun</i>	
CONTEXT-AWARE TRAJECTORY PREDICTION	1941
<i>Federico Bartoli ; Giuseppe Lisanti ; Lamberto Ballan ; Alberto Del Bimbo</i>	
A MULTI-MODAL MULTI-VIEW DATASET FOR HUMAN FALL ANALYSIS AND PRELIMINARY INVESTIGATION ON MODALITY	1947
<i>Thanh-Hai Tran ; Thi-Lan Le ; Dinh-Tan Pham ; Van-Nam Hoang ; Van-Minh Khong ; Quoc-Toan Tran ; Thai-Son Nguyen ; Cuong Pham</i>	
A NOVEL MODEL FOR MULTI-LABEL IMAGE ANNOTATION	1953
<i>Xinjian Wu ; Li Zhang ; Fanzhang Li ; Bangjun Wang</i>	
HALLUCINATING DENSE OPTICAL FLOW FROM SPARSE LIDAR FOR AUTONOMOUS VEHICLES	1959
<i>Victor Vaquero ; Alberto Sanfeliu ; Francesc Moreno-Noguer</i>	
GAZE-AIDED EYE DETECTION VIA APPEARANCE LEARNING	1965
<i>Lin Cao ; Chao Gou ; Kunfeng Wang ; Gang Xiong ; Fei-Yue Wang</i>	
FISH DETECTION FROM LOW VISIBILITY UNDERWATER VIDEOS	1971
<i>Violetta Shevchenko ; Tuomas Eerola ; Arto Kaarna</i>	
ACCURATE 3-D RECONSTRUCTION WITH RGB-D CAMERAS USING DEPTH MAP FUSION AND POSE REFINEMENT	1977
<i>Markus Ylimäki ; Janne Heikkilä ; Juho Kannala</i>	
GENDER RECOGNITION FROM FACE IMAGES USING TRAINABLE SHAPE AND COLOR FEATURES	1983
<i>George Azzopardi ; Pasquale Foggia ; Antonio Greco ; Alessia Saggese ; Mario Vento</i>	
SEMANTIC-ONLY VISUAL ODOMETRY BASED ON DENSE CLASS-LEVEL SEGMENTATION	1989
<i>Howard Mahé ; Denis Marraud ; Andrew I. Comport</i>	
MSSVT: MULTI-SCALE FEATURE EXTRACTION FOR SINGLE FACE RECOGNITION	1996
<i>Xiaoxiang Xu ; Li Zhang ; Fanzhang Li</i>	
AUTOMATIC INSPECTION OF AEROSPACE WELDS USING X-RAY IMAGES	2002
<i>Xinghui Dong ; Chris J. Taylor ; Tim F. Cootes</i>	

2D-TO-3D FACIAL EXPRESSION TRANSFER	2008
<i>Gemma Roiger ; Felipe Lumbreras ; Francesc Moreno-Noguer ; Antonio Agudo</i>	
SEGMENTATION-GUIDED TRACKING WITH PRIOR MAP DECISION	2014
<i>Ding Ma ; Wei Bu ; Yuying Xie ; Yuehua Cui ; Xiangqian Wu</i>	
FAST SINGLE IMAGE DEHAZING VIA POSITIVE CORRELATION	2020
<i>Bingheng Li ; Yi Lai ; Chaoyan Wu ; Ying Liu</i>	
TEMPORAL ACTION DETECTION BY JOINT IDENTIFICATION-VERIFICATION	2026
<i>Wen Wang ; Yongjian Wu ; Haijun Liu ; Shiguang Wang ; Jian Cheng</i>	
VEHICLE RE-IDENTIFICATION BY DEEP FEATURE FUSION BASED ON JOINT BAYESIAN CRITERION	2032
<i>Siyu Li ; Mingtao Pei ; Leyi Zhu</i>	
ROBUST ATTENTIONAL POOLING VIA FEATURE SELECTION	2038
<i>Jianbo Zheng ; Teng-Yok Lee ; Chen Feng ; Xiaohua Li ; Ziming Zhang</i>	
UNSUPERVISED MULTI-DOMAIN IMAGE TRANSLATION WITH DOMAIN-SPECIFIC ENCODERS/DECODERS	2044
<i>Le Hui ; Xiang Li ; Jiabin Chen ; Hongliang He ; Jian Yang</i>	
A LIGHT CNN BASED METHOD FOR HAND DETECTION AND ORIENTATION ESTIMATION	2050
<i>Li Yang ; Zhi Qi ; Zeheng Liu ; Shanshan Zhou ; Yang Zhang ; Hao Liu ; Jianhui Wu ; Longxing Shi</i>	
ORIENTATION-GUIDED SIMILARITY LEARNING FOR PERSON RE-IDENTIFICATION	2056
<i>Na Jiang ; Junqi Liu ; Chenxin Sun ; Yuehua Wang ; Zhong Zhou ; Wei Wu</i>	
LEARNING MULTI-VIEW GENERATOR NETWORK FOR SHARED REPRESENTATION	2062
<i>Tian Han ; Xianglei Xing ; Ying Nian Wu</i>	
MULTI-TASK LEARNING OF CASCADED CNN FOR FACIAL ATTRIBUTE CLASSIFICATION	2069
<i>Ni Zhuang ; Yan Yan ; Si Chen ; Hanzi Wang</i>	
LEARNING WITH LATENT LABEL HIERARCHY FROM INCOMPLETE MULTI-LABEL DATA	2075
<i>Yuanli Pei ; Xiaoli Fern ; Raviv Raich</i>	
LEARNING FIXATION POINT STRATEGY FOR OBJECT DETECTION AND CLASSIFICATION	2081
<i>Jie Lyu ; Zejian Yuan ; Dapeng Chen ; Yun Zhao ; Hui Zhang</i>	
PROBABILISTIC SPARSE SUBSPACE CLUSTERING USING DELAYED ASSOCIATION	2087
<i>Maryam Jaberri ; Marianna Pensky ; Hassan Foroosh</i>	
CONSTRAINED SPARSE SUBSPACE CLUSTERING WITH SIDE-INFORMATION	2093
<i>Chun-Guang Li ; Junjian Zhang ; Jun Guo</i>	
STREAM CLUSTERING WITH DYNAMIC ESTIMATION OF EMERGING LOCAL DENSITIES	2100
<i>Ziyin Wang ; Gavriil Tsechpenakis</i>	
A BENCHMARK FOR FULL ROTATION HEAD TRACKING	2106
<i>Yulin Li ; Bingpeng Ma ; Hong Chong ; Xilin Chen</i>	
DEPTH MASKED DISCRIMINATIVE CORRELATION FILTER	2112
<i>Ugur Kart ; Joni-Kristian Kämäräinen ; Jiri Matas ; Lixin Fan ; Francesco Cricri</i>	
OWP: OBJECTNESS WEIGHTED PATCH DESCRIPTOR FOR VISUAL TRACKING	2118
<i>Bo Jiang ; Yuan Zhang ; Jin Tang ; Bin Luo</i>	
DUAL-SVM TRACKER VIA MULTIPLE SUPPORT INSTANCE AND LEVER STRATEGY	2124
<i>Ding Ma ; Wei But ; Xiangqian Wu</i>	
3D GAIT RECOGNITION BASED ON FUNCTIONAL PCA ON KENDALL'S SHAPE SPACE	2130
<i>Nadia Hosni ; Hassen Drira ; Faten Chaieb ; Boulbaba Ben Amor</i>	
PERSON RE-IDENTIFICATION WITH VISION AND LANGUAGE	2136
<i>Fei Yan ; Josef Kittler ; Krystian Mikolajczyk</i>	
DOES A BODY IMAGE TELL AGE?	2142
<i>Baoyu Yuan ; Ancong Wu ; Wei-Shi Zheng</i>	
ATTEND AND ALIGN: IMPROVING DEEP REPRESENTATIONS WITH FEATURE ALIGNMENT LAYER FOR PERSON RETRIEVAL	2148
<i>Qin Xu ; Yifan Sun ; Yali Li ; Shengjin Wang</i>	
DEEP SEMI-SUPERVISED LEARNING	2154
<i>Zeyad Hailat ; Artem Komarichev ; Xue-Wen Chen</i>	
ROBUST ADAPTIVE LABEL PROPAGATION BY DOUBLE MATRIX DECOMPOSITION	2160
<i>Huan Zhang ; Zhao Zhang ; Sheng Li ; Qiaolin Ye ; Mingbo Zhao ; Meng Wang</i>	
EFFICIENT OBJECT REGION DISCOVERY FOR WEAKLY-SUPERVISED SEMANTIC SEGMENTATION	2166
<i>Min Zhong ; Gang Zeng</i>	
SEMI-SUPERVISED GRAPH REWIRING WITH THE DIRICHLET PRINCIPLE	2172
<i>Manuel Curado ; Francisco Escolano ; Miguel A. Lozano ; Edwin R. Hancock</i>	

DENSELY CONNECTED SINGLE-SHOT DETECTOR	2178
<i>Pei Xu ; Xin Zhao ; Kaiqi Huang</i>	
VIDEO SALIENT OBJECT DETECTION VIA MULTIPLE TIME-SCALE ANALYSIS	2184
<i>Yuhuan Chen ; Limin Huang ; Wenbin Zou ; Xia Li ; Guoping Qiu</i>	
OBJECT DETECTION IN EQUIRECTANGULAR PANORAMA	2190
<i>Wenyan Yang ; Yanlin Qian ; Joni-Kristian Kämäräinen ; Francesco Cricri ; Lixin Fan</i>	
MULTI-SCALE SEMANTIC SEGMENTATION ENRICHED FEATURES FOR PEDESTRIAN DETECTION	2196
<i>Xiaolu Xie ; Zengfu Wang</i>	
JOINT VOXEL AND COORDINATE REGRESSION FOR ACCURATE 3D FACIAL LANDMARK LOCALIZATION	2202
<i>Hongwen Zhang ; Qi Li ; Zhenan Sun</i>	
PATCH-GATED CNN FOR OCCLUSION-AWARE FACIAL EXPRESSION RECOGNITION	2209
<i>Yong Li ; Jiabei Zeng ; Shiguang Shan ; Xilin Chen</i>	
SCATTERING TRANSFORM FOR MATCHING SURGICALLY ALTERED FACE IMAGES	2215
<i>Ishita Gupta ; Ikshu Bhalla ; Richa Singh ; Mayank Vatsa</i>	
MULTIMODAL FACE SPOOFING DETECTION VIA RGB-D IMAGES	2221
<i>Xudong Sun ; Lei Huang ; Changping Liu</i>	
SCENE TEXT DETECTION WITH RECURRENT INSTANCE SEGMENTATION	2227
<i>Wei Feng ; Wen-Hao He ; Fei Yin ; Cheng-Lin Liu</i>	
A NOVEL INTEGRATED FRAMEWORK FOR LEARNING BOTH TEXT DETECTION AND RECOGNITION	2233
<i>Wanchen Sui ; Qing Zhang ; Jun Yang ; Wei Chu</i>	
LEARNING GRAPH DISTANCES WITH MESSAGE PASSING NEURAL NETWORKS	2239
<i>Pau Riba ; Andreas Fischer ; Josep Lladós ; Alicia Fornés</i>	
MULTI-SCALE ATTENTION WITH DENSE ENCODER FOR HANDWRITTEN MATHEMATICAL EXPRESSION RECOGNITION	2245
<i>Jianshu Zhang ; Jun Du ; Lirong Dai</i>	
AN INCREMENTAL MULTI-VIEW ACTIVE LEARNING ALGORITHM FOR POLSAR DATA CLASSIFICATION	2251
<i>Xiangli Nie ; Yongkang Luo ; Hong Qiao ; Bo Zhang ; Zhong-Ping Jiang</i>	
A LINEAR INCREMENTAL NYSTRÖM METHOD FOR ONLINE KERNEL LEARNING	2256
<i>Shan Xu ; Xiao Zhang ; Shizhong Liao</i>	
ROTATE YOUR NETWORKS: BETTER WEIGHT CONSOLIDATION AND LESS CATASTROPHIC FORGETTING	2262
<i>Xialei Liu ; Marc Masana ; Luis Herranz ; Joost Van De Weijer ; Antonio M. López ; Andrew D. Bagdanov</i>	
DYNAMIC ENSEMBLE ACTIVE LEARNING: A NON-STATIONARY BANDIT WITH EXPERT ADVICE	2269
<i>Kunkun Pang ; Mingzhi Dong ; Yang Wu ; Timothy M. Hospedales</i>	
EGOCENTRIC SHOPPING CART LOCALIZATION	2277
<i>Emiliano Spera ; Antonino Furnari ; Sebastiano Battiato ; Giovanni Maria Farinella</i>	
SCALABLE MONOCULAR SLAM BY FUSING AND CONNECTING LINE SEGMENTS WITH INVERSE DEPTH FILTER	2283
<i>Jiyuan Zhang ; Gang Zeng ; Hongbin Zha</i>	
END-TO-END MULTI-MODAL MULTI-TASK VEHICLE CONTROL FOR SELF-DRIVING CARS WITH VISUAL PERCEPTIONS	2289
<i>Zhengyuan Yang ; Yixuan Zhang ; Jerry Yu ; Junjie Cai ; Jiebo Luo</i>	
SPATIAL CALIBRATION FOR THERMAL-RGB CAMERAS AND INERTIAL SENSOR SYSTEM	2295
<i>Yan Li ; Jindong Tan ; Yinlong Zhang ; Wei Liang ; Hongsheng He</i>	
AUTOMATICALLY DETECTING ARRHYTHMIA-RELATED IRREGULAR PATTERNS USING THE TEMPORAL AND SPECTRO-TEMPORAL TEXTURES OF ECG SIGNALS	2301
<i>Sara S. Abdeldayem ; Thirimachos Bourlai</i>	
IMPACT OF LOSSY DATA COMPRESSION TECHNIQUES ON EEG-BASED PATTERN RECOGNITION SYSTEMS	2308
<i>Binh Nguyen ; Wanli Ma ; Dat Tran</i>	
SLIDENET: FAST AND ACCURATE SLIDE QUALITY ASSESSMENT BASED ON DEEP NEURAL NETWORKS	2314
<i>Teng Zhang ; Johanna Carvajal ; Daniel F. Smith ; Kun Zhao ; Arnold Wiliem ; Peter Hobson ; Anthony Jennings ; Brian C. Lovell</i>	

MULTI-TASK MULTIPLE KERNEL MACHINES FOR PERSONALIZED PAIN RECOGNITION FROM FUNCTIONAL NEAR-INFRARED SPECTROSCOPY BRAIN SIGNALS	2320
<i>Daniel Lopez-Martinez ; Ke Peng ; Sarah C. Steele ; Arielle J. Lee ; David Borsook ; Rosalind Picard</i>	
3D HUMAN POSE ESTIMATION FROM DEEP MULTI-VIEW 2D POSE	2326
<i>Steven Swarcz ; Thomas Pollard</i>	
ENHANCING PIX2PIX FOR REMOTE SENSING IMAGE CLASSIFICATION	2332
<i>Xiaoye Wang ; Hongping Yan ; Chunlei Huo ; Jiayuan Yu ; Chunhong Pant</i>	
GLOBAL CONTEXT ENCODING FOR SALIENT OBJECTS DETECTION	2337
<i>Jingbo Wang ; Yajie Xing ; Gang Zeng</i>	
3D GEOMETRY-AWARE SEMANTIC LABELING OF OUTDOOR STREET SCENES	2343
<i>Yiran Zhong ; Yuchao Dai ; Hongdong Li</i>	
REAL-TIME VEHICLE LOCALIZATION AND TRACKING USING MONOCULAR PANOMORPH PANORAMIC VISION	2350
<i>B. Akdemir ; A.N. Belbachir ; L.M. Svendsen</i>	
AN AUTOMATED CLASSIFICATION FRAMEWORK FOR PRESSURE ULCER TISSUES BASED ON 3D CONVOLUTIONAL NEURAL NETWORK	2356
<i>Mohammed Elmogy ; Begoña García-Zapirain ; Adel S. Elmaghraby ; Aymen El-Baz</i>	
SCALE AND ORIENTATION AWARE EPI-PATCH LEARNING FOR LIGHT FIELD DEPTH ESTIMATION	2362
<i>Wenhui Zhou ; Linkai Liang ; Hua Zhang ; Andrew Lumsdaine ; Lili Lin</i>	
AN IMAGE RAIN REMOVAL ALGORITHM BASED ON THE DEPTH OF FIELD AND SPARSE CODING	2368
<i>Junfeng Lei ; Shangyue Zhang ; Wentao Zou ; Jinsheng Xiao ; Yunhua Chen ; Haigang Sui</i>	
LARGE MARGIN STRUCTURED CONVOLUTION OPERATOR FOR THERMAL INFRARED OBJECT TRACKING	2380
<i>Peng Gao ; Yipeng Ma ; Ke Song ; Chao Li ; Fei Wang ; Liyi Xiao</i>	
CROSS MODAL MULTISCALE FUSION NET FOR REAL-TIME RGB-D DETECTION	2386
<i>Kejie Yin ; Sheng Liu ; Ruyi Liu ; Yibin Chen ; Kang Shen</i>	
PENTUPLET LOSS FOR SIMULTANEOUS SHOTS AND CRITICAL POINTS DETECTION IN A VIDEO	2392
<i>Nitin Gupta ; Abhinav Jain ; Prerna Agarwal ; Shashank Mujumdar ; Sameep Mehta</i>	
AGGREGATED SPARSE ATTENTION FOR STEERING ANGLE PREDICTION	2398
<i>Sen He ; Dmitry Kangin ; Yang Mi ; Nicolas Pugeault</i>	
MULTI-LAYER CNN FEATURES AGGREGATION FOR REAL-TIME VISUAL TRACKING	2404
<i>Lijia Zhang ; Yanmei Dong ; Yuwei Wu</i>	
LOCALIZATION BASED ON SEMANTIC MAP AND VISUAL INERTIAL ODOMETRY	2410
<i>Jie Jin ; Xiaoyang Zhu ; Yongshi Jiang ; Zhiying Du</i>	
WEAKLY- AND SEMI-SUPERVISED FASTER R-CNN WITH CURRICULUM LEARNING	2416
<i>Jiasi Wang ; Xinggang Wang ; Wenyu Liu</i>	
DEEP CONTEXT NETWORKS FOR IMAGE ANNOTATION	2422
<i>Mingyuan Jiu ; Hichem Sahbi ; Lin Qi</i>	
NON-ITERATIVE MULTIPLE DATA REGISTRATION METHOD BASED ON THE MOTION SCREW THEORY AND TRACKABLE FEATURES	2428
<i>Pei Xu ; Feifei Gu ; Zhan Song ; Jun Li</i>	
MULTIPLE MICE TRACKING: OCCLUSIONS DISENTANGLEMENT USING A GAUSSIAN MIXTURE MODEL	2433
<i>Ario Sadafi ; Vasiliki-Maria Katsageorgiou ; Huiping Huang ; Francesco Papaleo ; Vittorio Murino ; Diego Sona</i>	
WEATHER RECOGNITION BASED ON EDGE DETERIORATION AND CONVOLUTIONAL NEURAL NETWORKS	2438
<i>Yuzhou Shi ; Yuanxiang Li ; Jiawei Liu ; Xingang Liu ; Yi Lu Murphey</i>	
TEACHING SQUEEZE-AND-EXCITATION PYRAMIDNET FOR IMBALANCED IMAGE CLASSIFICATION WITH GAN-BASED CURRICULUM LEARNING	2444
<i>Jing Liu ; Angang Du ; Chao Wang ; Haiyong Zheng ; Nan Wang ; Bing Zheng</i>	
ADAPTIVE ALBEDO COMPENSATION FOR ACCURATE PHASE-SHIFT CODING	2450
<i>Mara Pistellato ; Luca Cosmo ; Filippo Bergamasco ; Andrea Gasparetto ; Andrea Albarelli</i>	
GENERATING IMAGE SEQUENCE FROM DESCRIPTION WITH LSTM CONDITIONAL GAN	2456
<i>Xu Ouyang ; Xi Zhang ; Di Ma ; Gady Agam</i>	
NEIGHBORHOOD-BASED RECOVERY OF PHASE UNWRAPPING FAULTS	2462
<i>Mara Pistellato ; Filippo Bergamasco ; Luca Cosmo ; Andrea Gasparetto ; Dalila Ressi ; Andrea Albarelli</i>	
CANDID: ROBUST CHANGE DYNAMICS AND DETERMINISTIC UPDATE POLICY FOR DYNAMIC BACKGROUND SUBTRACTION	2468
<i>Murari Mandal ; Prafulla Saxena ; Santosh Kumar Vipparthi ; Subrahmanyam Murala</i>	

AUTOMATIC EYE GAZE ESTIMATION USING GEOMETRIC & TEXTURE-BASED NETWORKS.....	2474
<i>Shreyank Jyoti ; Abhinav Dhall</i>	
A NEW BAG OF VISUAL WORDS ENCODING METHOD FOR HUMAN ACTION RECOGNITION.....	2480
<i>Xavier Cortés ; Donatello Conte ; Hubert Cardot</i>	
MULTI-SCALE FUSION WITH CONTEXT-AWARE NETWORK FOR OBJECT DETECTION.....	2486
<i>Hanyuan Wang ; Jie Xu ; Linke Li ; Ye Tian ; Du Xu ; Shizhong Xu</i>	
INCEPTION DONUT CONVOLUTION FOR TOP-DOWN SEMANTIC SEGMENTATION.....	2492
<i>He Guan ; Zhaoxiang Zhang ; Tieniu Tan</i>	
JOINT IMAGE RESTORATION AND MATCHING BASED ON DISTANCE-WEIGHTED SPARSE REPRESENTATION.....	2498
<i>Yuanjie Shao ; Nong Sang ; Changxin Gao ; Wei Lin</i>	
SPINDLE-NET: CNNs FOR MONOCULAR DEPTH INFERENCE WITH DILATION KERNEL METHOD.....	2504
<i>Lei He ; Miao Yu ; Guanghui Wang</i>	
MDCN: MULTI-SCALE, DEEP INCEPTION CONVOLUTIONAL NEURAL NETWORKS FOR EFFICIENT OBJECT DETECTION.....	2510
<i>Wenchi Ma ; Yuanwei Wu ; Zongbo Wang ; Guanghui Wang</i>	
TOWARDS GOOD PRACTICE FOR ACTION RECOGNITION WITH SPATIOTEMPORAL 3D CONVOLUTIONS.....	2516
<i>Kensho Hara ; Hirokatsu Kataoka ; Yutaka Satoh</i>	
3D CONVOLUTIONAL GENERATIVE ADVERSARIAL NETWORKS FOR DETECTING TEMPORAL IRREGULARITIES IN VIDEOS.....	2522
<i>Mengjia Yan ; Xudong Jiang ; Junsong Yuan</i>	
DETECTING HEADS USING FEATURE REFINE NET AND CASCADED MULTI-SCALE ARCHITECTURE.....	2528
<i>Dezhi Peng ; Zikai Sun ; Zirong Chen ; Zirui Cai ; Lele Xie ; Lianwen Jin</i>	
CONTINUOUS ACTION RECOGNITION AND SEGMENTATION IN UNTRIMMED VIDEOS.....	2534
<i>Ruibin Bai ; Qing Zhao ; Sanping Zhou ; Yubing Li ; Xueji Zhao ; Jinjun Wang</i>	
TRAFFIC SIGN IMAGE SYNTHESIS WITH GENERATIVE ADVERSARIAL NETWORKS.....	2540
<i>Hengliang Luo ; Qingqun Kong ; Fuchao Wu</i>	
DEEPRIVER: AUTOMATED SYSTEM FOR MEASURING VALENCE AND AROUSAL IN CAR DRIVER VIDEOS.....	2546
<i>Rajkumar Theagarajan ; Bir Bhanu ; Albert Cruz</i>	
DISCRIMINATIVE LATENT VISUAL SPACE FOR ZERO-SHOT OBJECT CLASSIFICATION.....	2552
<i>Abhinaba Roy ; Biplab Banerjee ; Vittorio Murino</i>	
FACE IMAGE ILLUMINATION PROCESSING BASED ON GENERATIVE ADVERSARIAL NETS.....	2558
<i>Wei Ma ; Xiaohua Xie ; Chong Yin ; Jianhuang Lai</i>	
TOWARDS AUTOMATIC DETECTION OF MONKEY FACES.....	2564
<i>Manning Zhang ; Susu Guo ; Xiaohua Xie</i>	
VISUAL TRACKING WITH BREEDING FIREFLIES USING BRIGHTNESS FROM BACKGROUND-FOREGROUND INFORMATION.....	2570
<i>Pranay Kate ; Mathew Francis ; Prithwijit Guha</i>	
UAV TARGET TRACKING WITH A BOUNDARY-DECISION NETWORK.....	2576
<i>Ke Song ; Wei Zhang ; Xuwen Rong</i>	
LEARNING COLLABORATIVE MODEL FOR VISUAL TRACKING.....	2582
<i>Ding Ma ; Wei Bu ; Yuehua Cui ; Yuying Xie ; Xiangqian Wu</i>	
AN EFFICIENT SYSTEM FOR HAZY SCENE TEXT DETECTION USING A DEEP CNN AND PATCH-NMS.....	2588
<i>Sabyasachi Mohanty ; Tanima Dutta ; Hari Prabhat Gupta</i>	
ALFA: AGGLOMERATIVE LATE FUSION ALGORITHM FOR OBJECT DETECTION.....	2594
<i>Evgenii Razinkov ; Iuliia Saveleva ; Jiri Matas</i>	
LOW-RANK TENSOR COMPLETION BY TRUNCATED NUCLEAR NORM REGULARIZATION.....	2600
<i>Shengke Xue ; Wenyuan Qiu ; Fan Liu ; Xinyu Jin</i>	
A GENERIC AXIOMATIC CHARACTERIZATION FOR MEASURING INFLUENCE IN SOCIAL NETWORKS.....	2606
<i>Sambaran Bandyopadhyay ; Ramasuri Narayanam ; M Narasimha Murty</i>	
TEMPORAL FILTER PARAMETERS FOR MOTION PATTERN MAPS.....	2612
<i>Lawrence O'gorman</i>	

BALANCING VIDEO ANALYTICS PROCESSING AND BANDWIDTH FOR EDGE-CLOUD NETWORKS	2618
<i>Lawrence O'gorman ; Xiaoyang Wang</i>	
FOCUSING ON WHAT IS RELEVANT: TIME-SERIES LEARNING AND UNDERSTANDING USING ATTENTION	2624
<i>Phongtharin Vinayavekhin ; Subhajit Chaudhury ; Asim Munawar ; Don Joven Agravante ; Giovanni De Magistris ; Daiki Kimura ; Ryuki Tachibana</i>	
FOREGROUND ENLARGEMENT OF OMNIDIRECTIONAL IMAGES BY SPHERICAL TRIGONOMETRY	2630
<i>An-Shui Yu ; Kenji Hara ; Kohei Inoue ; Kiichi Urahama</i>	
FEATURE EXTRACTION AND GRAIN SEGMENTATION OF SANDSTONE IMAGES BASED ON CONVOLUTIONAL NEURAL NETWORKS	2636
<i>Feng Jiang ; Qing Gu ; Huizhen Hao ; Na Li</i>	
COMPLETED GRAYSCALE-INVERSION AND ROTATION INVARIANT LOCAL BINARY PATTERN FOR TEXTURE CLASSIFICATION	2642
<i>Tiecheng Song ; Liangliang Xin ; Lin Luo ; Chenqiang Gao</i>	
A DRAVIDIAN LANGUAGE IDENTIFICATION SYSTEM	2654
<i>Himadri Mukherjee ; Sk Md Obaidullah ; Santanu Phadikar ; Kaushik Roy</i>	
BOUNDARY-BASED IMAGE FORGERY DETECTION BY FAST SHALLOW CNN	2658
<i>Zhongping Zhang ; Yixuan Zhang ; Zheng Zhou ; Jiebo Luo</i>	
RESIDUAL HSRCNN: RESIDUAL HYPER-SPECTRAL RECONSTRUCTION CNN FROM AN RGB IMAGE	2664
<i>Xian-Hua Han ; Boxin Shi ; Yingqiang Zheng</i>	
TWO-STAGE CONVOLUTIONAL NETWORK FOR IMAGE SUPER-RESOLUTION	2670
<i>Zheng Hui ; Xiumei Wang ; Xinbo Gao</i>	
ENSEMBLE REVERSIBLE DATA HIDING	2676
<i>Hanzhou Wu ; Wei Wang ; Jing Dong ; Hongxia Wang</i>	
LOW-RANK AND SPARSE DECOMPOSITION ON CONTRAST MAP FOR SMALL INFRARED TARGET DETECTION	2682
<i>Xiaoya Deng ; Wei Li ; Liwei Li ; Wenjuan Zhang ; Xia Li</i>	
REVISED SPATIAL TRANSFORMER NETWORK TOWARDS IMPROVED IMAGE SUPER-RESOLUTIONS	2688
<i>Hossam M. Kasem ; Kwok-Wai Hung ; Jianmin Jiang</i>	
DEEP HIGH-ORDER SUPERVISED HASHING FOR IMAGE RETRIEVAL	2693
<i>Jingdong Cheng ; Qiule Sun ; Jianxin Zhang ; Xiaopeng Wei ; Qiang Zhang</i>	
MUTUAL-OPTIMIZATION TOWARDS GENERATIVE ADVERSARIAL NETWORKS FOR ROBUST SPEECH RECOGNITION	2699
<i>Ke Ding ; Ne Luo ; Yanyan Xu ; Dengfeng Ke ; Kaile Su</i>	
INFRARED AND VISIBLE IMAGE FUSION USING A DEEP LEARNING FRAMEWORK	2705
<i>Hui Li ; Xiao-Jun Wu ; Josef Kittler</i>	
NON-UNIFORM ILLUMINATION VIDEO ENHANCEMENT BASED ON ZONE SYSTEM AND FUSION	2711
<i>Yu Zhang ; Shiguang Liu</i>	
MULTI-KERNEL SUPERVISED HASHING WITH GRAPH REGULARIZATION FOR CROSS-MODAL RETRIEVAL	2717
<i>Ming Zhu ; Huanghui Miao ; Jun Tang</i>	
RADIOMETRIC CONFIDENCE CRITERION FOR PATCH-BASED INPAINTING	2723
<i>Julien Fayer ; Géraldine Morin ; Simone Gasparini ; Maxime Daisly ; Benjamin Coudrin</i>	
ARE FRENCH REALLY THAT DIFFERENT? RECOGNIZING EUROPEANS FROM FACES USING DATA-DRIVEN LEARNING	2729
<i>Viet-Duy Nguyen ; Minh Tran ; Jiebo Luo</i>	
TEXTURE SEGMENTATION USING SIAMESE NETWORK AND HIERARCHICAL REGION MERGING	2735
<i>Ryusuke Yamada ; Hidenori Ide ; Novanto Yudistira ; Takio Kurita</i>	
SCREEN-RENDERED TEXT IMAGES RECOGNITION USING A DEEP RESIDUAL NETWORK BASED SEGMENTATION-FREE METHOD	2741
<i>Xin Xu ; Jun Zhou ; Hong Zhang</i>	
DEEP PIXEL PROBABILISTIC MODEL FOR SUPER RESOLUTION BASED ON HUMAN VISUAL SALIENCY MECHANISM	2747
<i>Hongxia Gao ; Zhanhong Chen ; Ge Ma ; Wang Xie ; Zhifu Li</i>	

JOINT DENOISING AND SUPER-RESOLUTION VIA GENERATIVE ADVERSARIAL TRAINING	2753
<i>Li Chen ; Wen Dan ; Liujuan Cao ; Cheng Wang ; Jonathan Li</i>	
RECURSIVE INCEPTION NETWORK FOR SUPER-RESOLUTION	2759
<i>Tao Jiang ; Xiaojun Wu ; Zhang Yu ; Wuyang Shui ; Gang Lu ; Shiqi Guo ; Hao Fei ; Qieshi Zhang</i>	
WEAKLY SUPERVISED VEHICLE DETECTION IN SATELLITE IMAGES VIA MULTIPLE INSTANCE RANKING	2765
<i>Yihan Sheng ; Liujuan Cao ; Cheng Wang ; Jonathan Li</i>	
RESTORATION OF SEA SURFACE TEMPERATURE SATELLITE IMAGES USING A PARTIALLY OCCLUDED TRAINING SET	2771
<i>Satoki Shibata ; Masaaki Iiyama ; Atsushi Hashimoto ; Michihiko Minoh</i>	
AN ATTENTION-BASED APPROACH FOR SINGLE IMAGE SUPER RESOLUTION	2777
<i>Yuan Liu ; Yuancheng Wang ; Nan Li ; Xu Cheng ; Yifeng Zhang ; Yongming Huang ; Guojun Lu</i>	
COMPRESSION OF ACOUSTIC MODEL VIA KNOWLEDGE DISTILLATION AND PRUNING	2785
<i>Chenxing Li ; Lei Zhu ; Shuang Xu ; Peng Gao ; Bo Xu</i>	
SUPER-RESOLUTION ULTRASOUND IMAGING BASED ON THE PHASE OF THE CARRIER WAVE WITHOUT DETERIORATION BY GRATING LOBES	2791
<i>Norio Tagawa ; Jing Zhu</i>	
SOLAR ATMOSPHERE DATA ANALYSIS	2797
<i>Stanislava Šimberová ; Tomáš Suk</i>	
SELF-ATTENTION BASED NETWORK FOR PUNCTUATION RESTORATION	2803
<i>Feng Wang ; Wei Chen ; Zhen Yang ; Bo Xu</i>	
FACE IMAGE SUPER-RESOLUTION VIA K-NN REGULARIZED COLLABORATIVE REPRESENTATION WITH IMPORTANCE REWEIGHTING	2809
<i>Licheng Liu ; Shutao Li</i>	
GLOBAL CONTRAST ENHANCEMENT DETECTION VIA DEEP MULTI-PATH NETWORK	2815
<i>Cong Zhang ; Dawei Du ; Lipeng Ke ; Honggang Qi ; Siwei Lyu</i>	
DEEP JOINT RAIN AND HAZE REMOVAL FROM A SINGLE IMAGE	2821
<i>Liang Shen ; Zihan Yue ; Quan Chen ; Fan Feng ; Jie Ma</i>	
GETTING RID OF NIGHT: THERMAL IMAGE CLASSIFICATION BASED ON FEATURE FUSION	2827
<i>Guoyu Lu ; Huili Yu ; Chun Yuan</i>	
VIDEO-BASED EMOTION RECOGNITION USING AGGREGATED FEATURES AND SPATIO-TEMPORAL INFORMATION	2833
<i>Jinchang Xu ; Yuan Dong ; Lilei Ma ; Hongliang Bai</i>	
SELF-TALK: RESPONSES TO USERS' OPINIONS AND CHALLENGES IN HUMAN COMPUTER DIALOG	2839
<i>Minghao Yang ; Na Sheng Ruo Yang ; Ke Zhang ; Jianhua Tao</i>	
DEEP CONDITIONAL COLOR HARMONY MODEL FOR IMAGE AESTHETIC ASSESSMENT	2845
<i>Peng Lu ; Jinbei Yu ; Xujun Peng</i>	
VISUALIZATION OF HYPERSPECTRAL IMAGES USING MOVING LEAST SQUARES	2851
<i>Danping Liao ; Siyu Chen ; Yuntao Qian</i>	
AN AUTOMATED POINT SET REGISTRATION FRAMEWORK FOR MULTIMODAL RETINAL IMAGE	2857
<i>Haotian Zhang ; Xianhui Liu ; Gang Wang ; Yufei Chen ; Weidong Zhao</i>	
QUALITY CLASSIFIED IMAGE ANALYSIS WITH APPLICATION TO FACE DETECTION AND RECOGNITION	2863
<i>Fei Yang ; Qian Zhang ; Miaohui Wang ; Guoping Qiu</i>	
VESSEL ENHANCEMENT BASED ON LENGTH-CONSTRAINED HESSIAN INFORMATION	2869
<i>Zhenhui Shi ; Hongzhi Xie ; Jingyang Zhang ; Jie Liu ; Lixu Gu</i>	
REDUCING TONGUE SHAPE DIMENSIONALITY FROM HUNDREDS OF AVAILABLE RESOURCES USING AUTOENCODER	2875
<i>Minghao Yang ; Dawei Zhang ; Jianhua Tao</i>	
ONE-CLASS SVMs BASED PRONUNCIATION VERIFICATION APPROACH	2881
<i>Mostafa Shahin ; Jim X Ji ; Beena Ahmed</i>	
SHOT LEVEL EGOCENTRIC VIDEO CO-SUMMARIZATION	2887
<i>Abhimanyu Sahu ; Ananda S. Chowdhury</i>	
VISUAL LOCALIZATION OF KEY POSITIONS FOR VISUALLY IMPAIRED PEOPLE	2893
<i>Ruiqi Cheng ; Kaiwei Wang ; Longqing Lin ; Kailun Yang</i>	
A NEW FOREGROUND SEGMENTATION METHOD FOR VIDEO ANALYSIS IN DIFFERENT COLOR SPACES	2899
<i>Hang Shi ; Chengjun Liu</i>	

CLASSIFICATION GUIDED DEEP CONVOLUTIONAL NETWORK FOR COMPRESSED SENSING	2905
<i>Wenxue Cui ; Shaohui Liu ; Shengping Zhang ; Yashu Liu ; Heyao Xu ; Xinwei Gao ; Feng Jiang ; Debin Zhao</i>	
SPATIO-TEMPORAL LABAN FEATURES FOR DANCE STYLE RECOGNITION	2911
<i>Swati Dewan ; Shubham Agarwal ; Navjyoti Singh</i>	
HETEROGENEOUS IMAGE CHANGE DETECTION USING DEEP CANONICAL CORRELATION ANALYSIS	2917
<i>Jing Yang ; Yuan Zhou ; Ying Cao ; Liyang Feng</i>	
INTEGRATING LOCAL AND NON-LOCAL DENOISER PRIORS FOR IMAGE RESTORATION	2923
<i>Shuhang Gu ; Radu Timofte ; Luc Van Gool</i>	
DYNAMIC FACIAL EXPRESSION SYNTHESIS DRIVEN BY DEFORMABLE SEMANTIC PARTS	2929
<i>Nanxue Gong ; Yang Yang ; Yuehu Liu ; Dingdong Liu</i>	
SKIP-CONNECTED DEEP CONVOLUTIONAL AUTOENCODER FOR RESTORATION OF DOCUMENT IMAGES	2935
<i>Guoping Zhao ; Jiajun Liu ; Jiacheng Jiang ; Hua Guan ; Ji-Rong Wen</i>	
SEMANTIC MUSIC ANNOTATION BY LABEL-SPECIFIC CONDITIONAL RANDOM FIELDS	2941
<i>Qianqian Wang ; Yu Xiong ; Feng Su</i>	
AUTOMATIC FEATURE EXTRACTION FOR WIDE-ANGLE AND FISH-EYE CAMERA CALIBRATION	2947
<i>Peter Fasogbon ; Lixin Fan</i>	
DELVING INTO THE SYNTHESIZABILITY OF DYNAMIC TEXTURE SAMPLES	2953
<i>Feng Yang ; Gui-Song Xia ; Dengxin Dai ; Liangpei Zhang</i>	
BLURRED IMAGE REGION DETECTION BASED ON STACKED AUTO-ENCODER	2959
<i>Yuan Zhou ; Jianxing Yang ; Yang Chen ; Sun-Yuan Kung</i>	
ACCUMULATED AGGREGATION SHIFTING BASED ON FEATURE ENHANCEMENT FOR DEFECT DETECTION ON 3D TEXTURED LOW-CONTRAST SURFACES	2965
<i>Yaping Yan ; Sheng Xiang ; Hirokazu Asano ; Shun'ichi Kaneko</i>	
UNSUPERVISED VIDEO HIGHLIGHT EXTRACTION VIA QUERY-RELATED DEEP TRANSFER	2971
<i>Han Wang ; Huangyue Yu ; Pei Chen ; Rui Hua ; Chuyi Yan ; Ling Zou</i>	
SUPER-RESOLUTION IMAGING BASED ON GLOBAL INTERPOLATION AND STRUCTURAL SIMILARITIES	2977
<i>Yuan Zhou ; Shuwei Huo ; Ying Chen ; Sun-Yuan Kung</i>	
AUGMENT AND ADAPT: A SIMPLE APPROACH TO IMAGE TAMPERING DETECTION	2983
<i>Yashas Annadani ; C.V. Jawahar</i>	
SIGNIFICANT REGION-BASED FRAMEWORK FOR EARLY DIAGNOSIS OF ALZHEIMER'S DISEASE USING 11C PIB-PET SCANS	2989
<i>Fatma El-Zahraa A. El-Gamal ; Mohammed M. Elmogy ; Ahmed Atwan ; Mohammed Ghazal ; Gregory N. Barnes ; Hassan Hajjdiab ; Robert Keynton ; Ayman S. El-Baz</i>	
LEARNING A HIERARCHICAL LATENT SEMANTIC MODEL FOR MULTIMEDIA DATA	2995
<i>Shao-Hui Wu ; Yuan-Shan Lee ; Sih-Huei Chen ; Jia-Ching Wang</i>	
A NEW DYNAMIC MINIMAL PATH MODEL FOR TUBULAR STRUCTURE CENTERLINE DELINEATION	3001
<i>Da Chen ; Laurent D. Cohen</i>	
VIDEO COMPRESSION FOR OBJECT DETECTION ALGORITHMS	3007
<i>Leonardo Galteri ; Marco Bertini ; Lorenzo Seidenari ; Alberto Del Bimbo</i>	
KINEMATIC-BASED EXTRACTION OF SALIENT 3D HUMAN MOTION DATA FOR SUMMARIZATION OF CHOREOGRAPHIC SEQUENCES	3013
<i>Athanasios Voulodimos ; Nikolas Doulamis ; Anastasios Doulamis ; Ioannis Rallis</i>	
WEAKLY SUPERVISED DOMAIN-SPECIFIC COLOR NAMING BASED ON ATTENTION	3019
<i>Lu Yu ; Yongmei Cheng ; Joost Van De Weijer</i>	
CONFOCAL ELLIPSE-BASED DISTANCE AND CONFOCAL ELLIPTICAL FIELD FOR POLYGONAL SHAPES	3025
<i>Aysylyu Gabdulkhakova ; Walter G. Kropatsch</i>	
MULTIPHASE LOCAL MEAN GEODESIC ACTIVE REGIONS	3031
<i>J. D. K. Hansen ; F. Lauze</i>	
A FAST CASCADE SHAPE REGRESSION METHOD BASED ON CNN-BASED INITIALIZATION	3037
<i>Pengcheng Gao ; Jian Xue ; Ke Lu ; Yanfu Yan</i>	

A NEW SINGLE IMAGE SUPER-RESOLUTION METHOD USING SIMK-BASED CLASSIFICATION AND ISRM TECHNIQUE	3043
<i>Peiqi Duan ; Anlong Ming ; Xuejing Kang ; Chao Yao</i>	
VIDEO STITCHING WITH EXTENDED-MESHFLOW	3049
<i>Kai Chen ; Jian Yao ; Binbin Xiang ; Jingmin Tu</i>	
A FAST LOCAL ANALYSIS BY THRESHOLDING APPLIED TO IMAGE MATCHING	3055
<i>Yannick Faula ; Stéphane Bres ; Véronique Eglin</i>	
CANDY: CONDITIONAL ADVERSARIAL NETWORKS BASED END-TO-END SYSTEM FOR SINGLE IMAGE HAZE REMOVAL	3061
<i>Kunal Swami ; Saikat Kumar Das</i>	
FAST MOTION DEBLURRING FOR FEATURE DETECTION AND MATCHING USING INERTIAL MEASUREMENTS	3068
<i>Janne Mustaniemi ; Juho Kannala ; Simo Särkkä ; Jiri Matas ; Janne Heikkilä</i>	
LAYERED SURFACE DETECTION FOR VIRTUAL UNROLLING	3074
<i>Vedrana Andersen Dahl ; Anders Bjorholm Dahl ; Camilla Himmelstrup Trinderup ; Carsten Gundlach</i>	
FULLY CONVOLUTIONAL NETWORK AND GRAPH-BASED METHOD FOR CO-SEGMENTATION OF RETINAL LAYER ON MACULAR OCT IMAGES	3081
<i>Yun Liu ; Gang Ren ; Gongping Yang ; Xiaoming Xi ; Xinjian Chen ; Yilong Yin</i>	
APPLYING HAND GESTURE RECOGNITION AND JOINT TRACKING TO A TV CONTROLLER USING CNN AND CONVOLUTIONAL POSE MACHINE	3086
<i>Yueh Wu ; Chien-Min Wang</i>	
DEEP EMOTION TRANSFER NETWORK FOR CROSS-DATABASE FACIAL EXPRESSION RECOGNITION	3092
<i>Shan Li ; Weihong Deng</i>	
WITT:MODELING AND THE EVALUATION OF TABLE TENNIS ACTIONS BASED ON WIFI SIGNALS	3100
<i>Chong Chen ; Yao Shu ; Kuang-I Shu ; Heng Zhang</i>	
ONE-FACTOR CANCELLABLE BIOMETRICS BASED ON INDEXING-FIRST-ORDER HASHING FOR FINGERPRINT AUTHENTICATION	3108
<i>Jihyeon Kim ; Andrew Beng Jin Teoh</i>	
IDENTIFICATION OF HYPERTENSION BY MINING CLASS ASSOCIATION RULES FROM MULTI-DIMENSIONAL FEATURES	3114
<i>Fan Liu ; Xingshe Zhou ; Zhu Wang ; Tianben Wang ; Yanchun Zhang</i>	
WHAT ARE YOU DOING WHILE ANSWERING YOUR SMARTPHONE?	3120
<i>Andrea F. Abate ; Michele Nappi ; Silvio Barra ; Maria De Marsico</i>	
ON MUGSHOT-BASED ARBITRARY VIEW FACE RECOGNITION	3126
<i>Jie Liang ; Feng Liu ; Huan Tu ; Qijun Zhao ; Anil K. Jain</i>	
LOCAL SUBCLASS CONSTRAINT FOR FACIAL EXPRESSION RECOGNITION IN THE WILD	3132
<i>Zimeng Luo ; Jiani Hu ; Weihong Deng</i>	
MINUTIA MATCHING USING 3D PORE CLOUDS	3138
<i>Raphael K. Czovny ; Olga R.P. Bellon ; Luciano Silva ; Henrique S. G. Costa</i>	
DUAL-MODALITY TALKING-METRICS: 3D VISUAL-AUDIO INTEGRATED BEHAVIOMETRIC CUES FROM SPEAKERS	3144
<i>Jie Zhang ; Korin Richmond ; Robert B. Fisher</i>	
SEGENSENET: IRIS SEGMENTATION FOR PRE-AND-POST CATARACT SURGERY	3150
<i>Aditya Lakra ; Pavani Tripathi ; Rohit Keshari ; Mayank Vatsa ; Richa Singh</i>	
FACE RECOGNITION FOR NEWBORNS, TODDLERS, AND PRE-SCHOOL CHILDREN: A DEEP LEARNING APPROACH	3156
<i>Sahar Siddiqui ; Mayank Vatsa ; Richa Singh</i>	
ENHANCING OCR ACCURACY WITH SUPER RESOLUTION	3162
<i>Ankit Lat ; C. V. Jawahar</i>	
MYOCARDIAL SCAR SEGMENTATION IN LGE-MRI USING FRACTAL ANALYSIS AND RANDOM FOREST CLASSIFICATION	3168
<i>Tanja Kurzendorfer ; Katharina Breininger ; Stefan Steidl ; Alexander Brost ; Christoph Forman ; Andreas Maier</i>	
A HYBRID DEEP ARCHITECTURE FOR ROBUST RECOGNITION OF TEXT LINES OF DEGRADED PRINTED DOCUMENTS	3174
<i>Chandan Biswas ; Partha Sarathi Mukherjee ; Koyel Ghosh ; Ujjwal Bhattacharya ; Swapan K. Parui</i>	
DOCUMENT IMAGE CLASSIFICATION WITH INTRA-DOMAIN TRANSFER LEARNING AND STACKED GENERALIZATION OF DEEP CONVOLUTIONAL NEURAL NETWORKS	3180
<i>Arindam Das ; Saikat Roy ; Ujjwal Bhattacharya ; Swapan K. Parui</i>	
A UNIFIED NEIGHBOR RECONSTRUCTION METHOD FOR EMBEDDINGS	3186
<i>Zhilong Ye ; Zhihong Zhang ; Lu Bai ; Guosheng Hu ; Zheng-Jian Bai ; Yiqun Hu ; Edwin R. Hancock</i>	

FLEXIBLE AND DISCRIMINATIVE NON-LINEAR EMBEDDING WITH FEATURE SELECTION FOR IMAGE CLASSIFICATION	3192
<i>R. Zhu ; F. Dornaika ; Y. Ruichek</i>	
KERNEL DISCRIMINANT CORRELATION ANALYSIS: FEATURE LEVEL FUSION FOR NONLINEAR BIOMETRIC RECOGNITION	3198
<i>Yang Bai ; Mohammad Haghighat ; Mohamed Abdel-Mottaleb</i>	
RECOGNITION OF INFANTS' GAZE BEHAVIORS AND EMOTIONS	3204
<i>Bikun Yang ; Jinshi Cui ; Yuqiang Tong ; Li Wang ; Hongbin Zha</i>	
MULTI-MODAL THREE-STREAM NETWORK FOR ACTION RECOGNITION	3210
<i>Muhammad Usman Khalid ; Jie Yu</i>	
TEMPORAL INCEPTION ARCHITECTURE FOR ACTION RECOGNITION WITH CONVOLUTIONAL NEURAL NETWORKS	3216
<i>Wei Zhang ; Jiepeng Cen ; Huicheng Zheng</i>	
RECURRENT NEURAL NETWORK BASED SMALL-FOOTPRINT WAKE-UP-WORD SPEECH RECOGNITION SYSTEM WITH A SCORE CALIBRATION METHOD	3222
<i>Chenxing Li ; Lei Zhu ; Shuang Xu ; Peng Gao ; Bo Xu</i>	
SSSD: SPEECH SCENE DATABASE BY SMART DEVICE FOR VISUAL SPEECH RECOGNITION	3228
<i>Takeshi Saitoh ; Michiko Kubokawa</i>	
A NEW SINGULAR VALUE DECOMPOSITION ALGORITHM FOR OCTONION SIGNAL	3233
<i>Miaomiao Shen ; Rui Wang</i>	
EXPECTED HYPERVOLUME IMPROVEMENT WITH CONSTRAINTS	3238
<i>Majid Abdolshah ; Alistair Shilton ; Santu Rana ; Sunil Gupta ; Svetha Venkatesh</i>	
MULTI-SCALE GENERATIVE ADVERSARIAL NETWORKS FOR CROWD COUNTING	3244
<i>Jianxing Yang ; Yuan Zhou ; Sun-Yuan Kung</i>	
HYBRID PATH PLANNER FOR EFFICIENT NAVIGATION IN URBAN ROAD NETWORKS THROUGH ANALYSIS OF TRAJECTORY TRACES	3250
<i>Sayan Sinha ; Mehul Kumar Nirala ; Shreya Ghosh ; Soumya K. Ghosh</i>	
IMAGE EXPLORATION PROCEDURE CLASSIFICATION WITH SPIKE-TIMING NEURAL NETWORK FOR THE BLIND	3256
<i>Ting Zhang ; Tian Zhou ; Bradley S. Duerstock ; Juan P. Wachs</i>	
EFFICIENT STATISTICAL FACE RECOGNITION USING TRIGONOMETRIC SERIES AND CNN FEATURES	3262
<i>Andrey Savchenko</i>	
MULTI-CLASSIFICATION OF PARKINSON'S DISEASE VIA SPARSE LOW-RANK LEARNING	3268
<i>Haijun Lei ; Yujia Zhao ; Zhongwei Huang ; Feng Zhou ; Limin Huang ; Baiying Lei</i>	
REAL-TIME TEXTURE-LESS OBJECT RECOGNITION ON MOBILE DEVICES	3273
<i>Jacob Chan ; Jimmy Addison Lee ; Qian Kemao</i>	
SELECTIVE MULTI-CONVOLUTIONAL REGION FEATURE EXTRACTION BASED ITERATIVE DISCRIMINATION CNN FOR FINE-GRAINED VEHICLE MODEL RECOGNITION	3279
<i>Yanling Tian ; Weitong Zhang ; Qieshi Zhang ; Gang Lu ; Xiaojun Wu</i>	
A SHORTLY AND DENSELY CONNECTED CONVOLUTIONAL NEURAL NETWORK FOR VEHICLE RE-IDENTIFICATION	3285
<i>Jianqing Zhu ; Huanqiang Zeng ; Zhen Lei ; Shengcai Liao ; Lixin Zheng ; Canhui Cai</i>	
VISUAL RELATIONSHIP DETECTION USING JOINT VISUAL-SEMANTIC EMBEDDING	3291
<i>Binglin Li ; Yang Wang</i>	
TIME-DEPENDENT PRE-ATTENTION MODEL FOR IMAGE CAPTIONING	3297
<i>Fuwei Wang ; Xiaolong Gong ; Linpeng Huang</i>	
TOWARDS UNCONSTRAINED POINTING PROBLEM OF VISUAL QUESTION ANSWERING: A RETRIEVAL-BASED METHOD	3303
<i>Wenlong Cheng ; Yan Huang ; Liang Wang</i>	
ACTION RECOGNITION WITH VISUAL ATTENTION ON SKELETON IMAGES	3309
<i>Zhengyuan Yang ; Yuncheng Li ; Jianchao Yang ; Jiebo Luo</i>	
ACTIVITY DETECTION USING FUSION OF MULTI-PRESSURE SENSORS IN INSOLES	3315
<i>Omid Dehzangi ; Bhavani Anantapur Bache ; Omar Iftikhar</i>	
FINE-GRAINED VIDEO RETRIEVAL USING QUERY PHRASES — WASEDA_MEISEI TRECVID 2017 AVS SYSTEM —.....	3322
<i>Kazuya Ueki ; Koji Hirakawa ; Kotaro Kikuchi ; Tetsunori Kobayashi</i>	
DISCRIMINATE CROSS-MODAL QUANTIZATION FOR EFFICIENT RETRIEVAL	3328
<i>Peng Sun ; Cheng Yan ; Shuai Wang ; Xiao Bai</i>	

DEEPIREARM: LEARNING DISCRIMINATIVE FEATURE REPRESENTATION FOR FINE-GRAINED FIREARM RETRIEVAL	3335
<i>Jiedong Hao ; Jing Dong ; Wei Wang ; Tieniu Tan</i>	
PERSON RE-IDENTIFICATION USING TWO-STAGE CONVOLUTIONAL NEURAL NETWORK	3341
<i>Yonghui Zhang ; Jie Shao ; Deqiang Ouyang ; Heng Tao Shen</i>	
HUMAN GAIT RECOGNITION WITH MICRO-DOPPLER RADAR AND DEEP AUTOENCODER	3347
<i>Hoang Thanh Le ; Son Lam Phung ; Abdesselam Bouzerdoum</i>	
DEEP DIFFERENCE ANALYSIS IN SIMILAR-LOOKING FACE RECOGNITION	3353
<i>Yaoyao Zhong ; Weihong Deng</i>	
ONE-CLASS RANDOM MAXOUT PROBABILISTIC NETWORK FOR MOBILE TOUCHSTROKE AUTHENTICATION	3359
<i>Seokmin Choi ; Inho Chang ; Andrew Beng Jin Teoh</i>	
MULTIMODAL GESTURE RECOGNITION USING DENSELY CONNECTED CONVOLUTION AND BLSTM	3365
<i>Dexu Li ; Yimin Chen ; Mingke Gao ; Siyu Jiang ; Chen Huang</i>	
DETECTING DISGUISE ATTACKS ON MULTI-SPECTRAL FACE RECOGNITION THROUGH SPECTRAL SIGNATURES	3371
<i>R. Raghavendra ; Narayan Vetrekar ; Kiran B. Raja ; R. S. Gad ; Christoph Busch</i>	
TEMPORAL HIERARCHICAL DICTIONARY WITH HMM FOR FAST GESTURE RECOGNITION	3378
<i>Haoyu Chen ; Xin Liu ; Guoying Zhao</i>	
FACIAL EXPRESSION RECOGNITION BY MULTI-SCALE CNN WITH REGULARIZED CENTER LOSS	3384
<i>Zhenghao Li ; Song Wu ; Guoqiang Xiao</i>	
CANCELABLE BIOMETRICS USING NOISE EMBEDDING	3390
<i>Dae-Hyun Lee ; Sang Hwa Lee ; Nam Ik Cho</i>	
SALIENCY DETECTION USING ITERATIVE DYNAMIC GUIDED FILTERING	3396
<i>Chen Wang ; Yangyu Fan</i>	
FACE ANTI-SPOOFING WITH MULTI-SCALE INFORMATION	3402
<i>Shiying Luo ; Meina Kan ; Shuzhe Wu ; Xilin Chen ; Shiguang Shan</i>	
EXTENDED YOUTUBE FACES: A DATASET FOR HETEROGENEOUS OPEN-SET FACE IDENTIFICATION	3408
<i>Claudio Ferrari ; Stefano Berretti ; Alberto Del Bimbo</i>	
CONFIDENCE-DRIVEN NETWORK FOR POINT-TO-SET MATCHING	3414
<i>Mengjun Leng ; Ioannis A. Kakadiaris</i>	
VIDEO GESTURE ANALYSIS FOR AUTISM SPECTRUM DISORDER DETECTION	3421
<i>Andrea Zunino ; Pietro Morerio ; Andrea Cavallo ; Caterina Ansuini ; Jessica Podda ; Francesca Battaglia ; Edvige Veneselli ; Cristina Becchio ; Vittorio Murino</i>	
ACTION RECOGNITION FROM 3D SKELETON SEQUENCES USING DEEP NETWORKS ON LIE GROUP FEATURES	3427
<i>Manel Rhif ; Hazem Wannous ; Imed Riadh Farah</i>	
DYNAMIC FACIAL EXPRESSION RECOGNITION BASED ON CONVOLUTIONAL NEURAL NETWORKS WITH DENSE CONNECTIONS	3433
<i>Jiayu Dong ; Huicheng Zheng ; Lina Lian</i>	
PERSON RECOGNITION AT A DISTANCE: IMPROVING FACE RECOGNITION THROUGH BODY STATIC INFORMATION	3439
<i>Ester Gonzalez-Sosa ; Ruben Vera-Rodriguez ; Javier Hernandez-Ortega ; Julian Fierrez</i>	
DEEP LEARNING-BASED FACE RECOGNITION AND THE ROBUSTNESS TO PERSPECTIVE DISTORTION	3445
<i>Naser Damer ; Yaza Wainakh ; Olaf Henniger ; Christian Croll ; Benoit Berthe ; Andreas Braun ; Arjan Kuijper</i>	
CNN+RNN DEPTH AND SKELETON BASED DYNAMIC HAND GESTURE RECOGNITION	3451
<i>Kenneth Lai ; Svetlana N. Yanushkevich</i>	
A JOINT DENSITY BASED RANK-SCORE FUSION FOR SOFT BIOMETRIC RECOGNITION AT A DISTANCE	3457
<i>Bingchen H. Guo ; Mark S. Nixon ; John N. Carter</i>	
OPTIMIZING ENERGIES FOR POSE-INVARIANT FACE RECOGNITION	3463
<i>Harald Hanselmann ; Hermann Ney</i>	
MULTI-LEVEL FEATURE ABSTRACTION FROM CONVOLUTIONAL NEURAL NETWORKS FOR MULTIMODAL BIOMETRIC IDENTIFICATION	3469
<i>Sobhan Soleymani ; Ali Dabouei ; Hadi Kazemi ; Jeremy Dawson ; Nasser M. Nasrabadi</i>	

PERSON RE-IDENTIFICATION BASED ON FEATURE FUSION AND TRIPLET LOSS FUNCTION	3477
<i>Jun Xiang ; Ranran Lin ; Jianhua Hou ; Wenjun Huang</i>	
ICUSHION: A PRESSURE MAP ALGORITHM FOR HIGH ACCURACY HUMAN IDENTIFICATION	3483
<i>Haojun Ai ; Liezhao Zhang ; Zhiyu Yuan ; Haitao Huang</i>	
FV-NET: LEARNING A FINGER-VEIN FEATURE REPRESENTATION BASED ON A CNN	3489
<i>Hui Hu ; Wenxiong Kang ; Yuting Lu ; Yuxun Fang ; Hongda Liu ; Junhong Zhao ; Feiqi Deng</i>	
INCORPORATING HIGH-LEVEL AND LOW-LEVEL CUES FOR PAIN INTENSITY ESTIMATION	3495
<i>Ruijing Yang ; Xiaopeng Hong ; Jinye Peng ; Xiaoyi Feng ; Guoying Zhao</i>	
ADVANCING SURFACE FEATURE ENCODING AND MATCHING FOR MORE ACCURATE 3D BIOMETRIC RECOGNITION	3501
<i>Kevin H. M. Cheng ; Ajay Kumar</i>	
FACELIVENET: END-TO-END NETWORKS COMBINING FACE VERIFICATION WITH INTERACTIVE FACIAL EXPRESSION-BASED LIVENESS DETECTION	3507
<i>Zuheng Ming ; Joseph Chazalon ; Muhammad Muzamil Luqman ; Muriel Visani ; Jean-Christophe Burie</i>	
EFFECT OF ARTEFACT REMOVAL TECHNIQUES ON EEG SIGNALS FOR VIDEO CATEGORY CLASSIFICATION	3513
<i>Aunnoy K. Mutasim ; M. Raihanulbashar ; Rayhan Sardartipu ; Md. Kafiulislam ; M. Ashrafulamin</i>	
HIGH-QUALITY FACIAL KEYPOINTS MATCHING WITH MOTION SMOOTHNESS CONSTRAINT AND 3D MODEL CONSTRAINT	3519
<i>Xianxian Zeng ; Xiaodong Wang ; Kairui Chen ; Peichu Ye ; Xiaorui Hu ; Dong Li ; Yun Zhang</i>	
AIR SIGNATURE RECOGNITION USING DEEP CONVOLUTIONAL NEURAL NETWORK-BASED SEQUENTIAL MODEL	3525
<i>S. K. Behera ; A. K. Dash ; D. P. Dogra ; P. P. Roy</i>	
UNIFACE: A UNIFIED NETWORK FOR FACE DETECTION AND RECOGNITION	3531
<i>Zhouyingcheng Liao ; Peng Zhou ; Qinlong Wu ; Bingbing Ni</i>	
ADAPTIVE CONVOLUTION LOCAL AND GLOBAL LEARNING FOR CLASS-LEVEL JOINT REPRESENTATION OF FACE RECOGNITION WITH SINGLE SAMPLE PER PERSON	3537
<i>Wei Wen ; Xing Wang ; Linlin Shen ; Meng Yang</i>	
META TRANSFER LEARNING FOR FACIAL EMOTION RECOGNITION	3543
<i>Dung Nguyen ; Kien Nguyen ; Sridha Sridharan ; Iman Abbasnejad ; David Dean ; Clinton Fookes</i>	
SPEAKER CLUSTERING USING DOMINANT SETS	3549
<i>Feliks Hibraraj ; Sebastiano Vascon ; Thilo Stadelmann ; Marcello Pelillo</i>	
SHOW ME YOUR FACE AND I WILL TELL YOU YOUR HEIGHT, WEIGHT AND BODY MASS INDEX	3555
<i>Antitza Dantcheva ; Francois Bremond ; Piotr Bilinski</i>	
GENERATION TEXTURED CONTACT LENSES IRIS IMAGES BASED ON 4DCYCLE-GAN	3561
<i>Hang Zou ; Hui Zhang ; Xingguang Li ; Jing Liu ; Zhaofeng He</i>	
MSU-AVIS DATASET: FUSING FACE AND VOICE MODALITIES FOR BIOMETRIC RECOGNITION IN INDOOR SURVEILLANCE VIDEOS	3567
<i>Anurag Chowdhury ; Yousef Atoum ; Luan Tran ; Xiaoming Liu ; Arun Ross</i>	
HARD ZERO SHOT LEARNING FOR GESTURE RECOGNITION	3574
<i>Naveen Madapana ; Juan P. Wachs</i>	
SYNRHYTHM: LEARNING A DEEP HEART RATE ESTIMATOR FROM GENERAL TO SPECIFIC	3580
<i>Xuesong Niu ; Hu Han ; Shiguang Shan ; Xilin Chen</i>	
REVISED CONTRASTIVE LOSS FOR ROBUST AGE ESTIMATION FROM FACE	3586
<i>Hongyu Pan ; Hu Han ; Shiauanz Shan ; Xilin Chen</i>	
AUTOMATIC FACIAL ATTRACTIVENESS PREDICTION BY DEEP MULTI-TASK LEARNING	3592
<i>Lian Gao ; Weixin Li ; Zehua Huang ; Di Huang ; Yunhong Wang</i>	
UNOBTRUSIVE DRIVER DROWSINESS PREDICTION USING DRIVING BEHAVIOR FROM VEHICULAR SENSORS	3598
<i>Omid Dehzangi ; Selvamani Masilamani</i>	
FUSED TEXT SEGMENTATION NETWORKS FOR MULTI-ORIENTED SCENE TEXT DETECTION	3604
<i>Yuchen Dai ; Zheng Huang ; Yuting Gao ; Youxuan Xu ; Kai Chen ; Jie Guo ; Weidong Qiu</i>	
R2CNN: ROTATIONAL REGION CNN FOR ARBITRARILY-ORIENTED SCENE TEXT DETECTION	3610
<i>Yingying Jiang ; Xiangyu Zhu ; Xiaobing Wang ; Shuli Yang ; Wei Li ; Hua Wang ; Pei Fu ; Zhenbo Luo</i>	

WORD IMAGE REPRESENTATION BASED ON VISUAL EMBEDDINGS AND SPATIAL CONSTRAINTS FOR KEYWORD SPOTTING ON HISTORICAL DOCUMENTS	3616
<i>Hongxi Wei ; Hui Zhang ; Guanglai Gao</i>	
CG-DIQA: NO-REFERENCE DOCUMENT IMAGE QUALITY ASSESSMENT BASED ON CHARACTER GRADIENT	3622
<i>Hongyu Li ; Fan Zhu ; Junhua Qiu</i>	
PAGE OBJECT DETECTION FROM PDF DOCUMENT IMAGES BY DEEP STRUCTURED PREDICTION AND SUPERVISED CLUSTERING	3627
<i>Xiao-Hui Li ; Fei Yin ; Cheng-Lin Liu</i>	
WATERCOLOR, SEGMENTING IMAGES USING CONNECTED COLOR COMPONENTS	3633
<i>Sébastien Eskenazi ; Petra Gomez-Krämer ; Jean-Marc Ogier</i>	
HANDWRITING TRAJECTORY RECOVERY USING END-TO-END DEEP ENCODER-DECODER NETWORK	3639
<i>Ayan Kumar Bhunia ; Abir Bhowmick ; Ankan Kumar Bhunia ; Aishik Konwer ; Prithaj Banerjee ; Partha Pratim Roy ; Umapada Pal</i>	
WORD LEVEL FONT-TO-FONT IMAGE TRANSLATION USING CONVOLUTIONAL RECURRENT GENERATIVE ADVERSARIAL NETWORKS	3645
<i>Ankan Kumar Bhunia ; Ayan Kumar Bhunia ; Prithaj Banerjee ; Aishik Konwer ; Abir Bhowmick ; Partha Pratim Roy ; Umapada Pal</i>	
WEIGHTED-GRADIENT FEATURES FOR HANDWRITTEN LINE SEGMENTATION	3651
<i>Vijeta Khare ; Palaiahnakote Shivakumara ; B.J. Navya ; G.C. Swetha ; D. S. Guru ; Umapada Pal ; Tong Lu</i>	
MULTI-GRADIENT DIRECTIONAL FEATURES FOR GENDER IDENTIFICATION	3657
<i>B.J. Navya ; G. C. Swetha ; Palaiahnakote Shivakumara ; Sangheeta Roy ; D. S. Guru ; Umapada Pal ; Tong Lu</i>	
SCENE TEXT RECTIFICATION USING GLYPH AND CHARACTER ALIGNMENT PROPERTIES	3663
<i>Taeho Kil ; Hyung Il Koo ; Nam Ik Cho</i>	
DETECTING PHISHING WEBSITES AND TARGETS BASED ON URLS AND WEBPAGE LINKS	3669
<i>Huaping Yuan ; Xu Chen ; Yukun Li ; Zbenguo Yang ; Wenyin Liu</i>	
SCRIPT IDENTIFICATION OF CENTRAL ASIA BASED ON FUSED TEXTURE FEATURES	3675
<i>Xing-Kun Han ; Alimjan Aysa ; Hornisa Mamat ; Nurbiya Yadikar ; Kurban Ubul</i>	
TRAJECTORY-BASED RADICAL ANALYSIS NETWORK FOR ONLINE HANDWRITTEN CHINESE CHARACTER RECOGNITION	3681
<i>Jianshu Zhang ; Yixing Zhu ; Jun Du ; Lirong Dai</i>	
A FUSION STRATEGY FOR THE SINGLE SHOT TEXT DETECTOR	3687
<i>Zheng Yu ; Shujing Lyu ; Yue Lu ; Patrick S. P. Wang</i>	
A RANDOMIZED HIERARCHICAL TREES INDEXING APPROACH FOR CAMERA-BASED INFORMATION SPOTTING	3692
<i>Q.B. Dang ; M. Coustaty ; M.M. Luqman ; J.M. Ogier ; C.D. Tran</i>	
AN END-TO-END NEURAL NETWORK FOR MULTI-LINE LICENSE PLATE RECOGNITION	3698
<i>Yu Cao ; Huiyuan Fu ; Huadong Ma</i>	
DEEPScores-A DATASET FOR SEGMENTATION, DETECTION AND CLASSIFICATION OF TINY OBJECTS	3704
<i>Lukas Tuggener ; Ismail Elezi ; Jurgen Schmidhuber ; Marcello Pelillo ; Thilo Stadelmann</i>	
LEARNING TOPICS USING SEMANTIC LOCALITY	3710
<i>Ziyi Zhao ; Krittaphat Pugdeethosapol ; Sheng Lin ; Zhe Li ; Caiwen Ding ; Yanzhi Wang ; Qinru Qiu</i>	
HISTORICAL DOCUMENT IMAGE BINARIZATION USING BACKGROUND ESTIMATION AND ENERGY MINIMIZATION	3716
<i>Wei Xiong ; Xiuhong Jia ; Jingjing Xu ; Zijie Xiong ; Min Liu ; Juan Wang</i>	
IMPROVE WORD MOVER'S DISTANCE WITH PART-OF-SPEECH TAGGING	3722
<i>Xiaojun Chen ; Li Bai ; Dakui Wang ; Jinqiao Shi</i>	
HANDWRITTEN DIGIT STRING RECOGNITION USING CONVOLUTIONAL NEURAL NETWORK	3729
<i>Hongjian Zhan ; Shujing Lyu ; Yue Lu</i>	
SLIDING LINE POINT REGRESSION FOR SHAPE ROBUST SCENE TEXT DETECTION	3735
<i>Yixing Zhu ; Jun Du</i>	
ROBUST SCENE TEXT DETECTION WITH DEEP FEATURE PYRAMID NETWORK AND CNN BASED NMS MODEL	3741
<i>Sabyasachi Mohanty ; Tanima Dutta ; Hari Prabhatgupta</i>	
SCENE TEXT DETECTION VIA DEEP SEMANTIC FEATURE FUSION AND ATTENTION-BASED REFINEMENT	3747
<i>Yu Song ; Yuanshun Cui ; Hu Han ; Shiguang Shan ; Xilin Chen</i>	

EXPLORING DISCRIMINATIVE HMM STATES FOR IMPROVED RECOGNITION OF ONLINE HANDWRITING	3753
<i>Subhasis Mandal ; Himakshi Choudhury ; S. R. Mahadeva Prasanna ; Suresh Sundaram</i>	
FOCUS ON SCENE TEXT USING DEEP REINFORCEMENT LEARNING	3759
<i>Haobin Wang ; Shuangping Huang ; Lianwen Jin</i>	
VARIATIONAL MODE DECOMPOSITION-BASED HEART RATE ESTIMATION USING WRIST-TYPE PHOTOPLETHYSMOGRAPHY DURING PHYSICAL EXERCISE.....	3766
<i>Wenwen He ; Yalan Ye ; Yunxia Li ; Haijin Xu ; Li Lu ; Wenxia Huang ; Ming Sun</i>	
ROBUST FUSSED LASSO MODEL FOR RECURRENT COPY NUMBER VARIATION DETECTION	3772
<i>Mustafa Alshawaqfeh ; Ahmad Alkawam ; Erchin Serpedin</i>	
DEEP LEARNING BASED BIORESORBABLE VASCULAR SCAFFOLDS DETECTION IN IVOCT IMAGES	3778
<i>Yihui Cao ; Yifeng Lu ; Jianan Li ; Rui Zhu ; Qinhuo Jin ; Jing Jing ; Yundai Chena</i>	
MINING NMR SPECTROSCOPY USING TOPIC MODELS	3784
<i>Manuele Bicego ; Pietro Lovato ; Marco Debona ; Flavia Guzzo ; Michael Assfalg</i>	
AUTOMATIC SEGMENTATION OF KIDNEY AND RENAL TUMOR IN CT IMAGES BASED ON 3D FULLY CONVOLUTIONAL NEURAL NETWORK WITH PYRAMID POOLING MODULE	3790
<i>Guanyu Yang ; Guoqing Li ; Tan Pan ; Youyong Kong ; Jiasong Wu ; Huazhong Shu ; Limin Luo ; Jean-Louis Dillenseger ; Jean-Louis Coatrieux ; Lijun Tang ; Xiaomei Zhu</i>	
MULTI-LABEL SEMANTIC DECODING FROM HUMAN BRAIN ACTIVITY	3796
<i>Dan Li ; Changde Du ; Lijie Huang ; Zhiqiang Chen ; Huiguang He</i>	
DESPECKLING CNN WITH ENSEMBLES OF CLASSICAL OUTPUTS.....	3802
<i>Deepak Mishra ; Sarthak Tyagi ; Santanu Chaudhury ; Mukul Sarkar ; Arvinder Singhsoin</i>	
UNSUPERVISED CLUSTERING OF MAMMOGRAMS FOR OUTLIER DETECTION AND BREAST DENSITY ESTIMATION	3808
<i>Tal Tlusty ; Guy Amit ; Rami Ben-Ari</i>	
FULLY CONVOLUTIONAL NEURAL NETWORKS FOR PROSTATE CANCER DETECTION USING MULTI-PARAMETRIC MAGNETIC RESONANCE IMAGES: AN INITIAL INVESTIGATION.....	3814
<i>Yunzhi Wang ; Bin Zheng ; Dashan Gao ; Jiao Wang</i>	
AUTOMATIC PROSTATE SEGMENTATION ON MR IMAGES USING ENHANCED HOLISTICALLY-NESTED NETWORKS	3820
<i>Dong Jit ; Jinzhao Qian ; Jun Yu ; Toru Kurihara ; Shu Zhan</i>	
DEEPHESC: AN AUTOMATED SYSTEM FOR GENERATING AND CLASSIFICATION OF HUMAN EMBRYONIC STEM CELLS	3826
<i>Rajkumar Theagarajan ; Benjamin X. Guan ; Bir Bhanu</i>	
2D AND 3D CONVOLUTIONAL NEURAL NETWORK FUSION FOR PREDICTING THE HISTOLOGICAL GRADE OF HEPATOCELLULAR CARCINOMA	3832
<i>Tianyou Dou ; Wu Zhou</i>	
FULLY AUTOMATIC SEGMENTATION OF THE LEFT VENTRICLE USING MULTI-SCALE FUSION LEARNING.....	3838
<i>Tianchen Yuan ; Qianqian Tong ; Xiangyun Liao ; Xinling Du ; Jianhui Zhao</i>	
MODEL-BASED GRAPH SEGMENTATION IN 2-D FLUORESCENCE MICROSCOPY IMAGES	3844
<i>A. Abreu ; F.X. Frenois ; S. Valitutti ; P. Brousset ; P. Denèfle ; B. Naegel ; C. Wemmert</i>	
MAMMOGRAPHIC MASS DETECTION BASED ON CONVOLUTION NEURAL NETWORK	3850
<i>Yanfeng Li ; Houjin Chen ; Linlin Zhang ; Lin Cheng</i>	
ENCODED TEXTURE FEATURES TO CHARACTERIZE BONE RADIOGRAPH IMAGES	3856
<i>Ran Su ; Weijun Chen ; Leyi Wei ; Xiuting Li ; Qiangguo Jin ; Wenyan Tao</i>	
TOWARDS PERSONALIZED AUTISM DIAGNOSIS: PROMISING RESULTS.....	3862
<i>Y. Elnakieb ; M. Nitzken ; A. Shalaby ; O. Dekhil ; A. Mahmoud ; A. Switala ; A. Elmaghraby ; R. Keynton ; M. Ghazal ; A. Khalil ; G. Barnes ; A. El-Baz</i>	
WGAN LATENT SPACE EMBEDDINGS FOR BLAST IDENTIFICATION IN CHILDHOOD ACUTE MYELOID LEUKAEMIA	3868
<i>Roxane Licandro ; Thomas Schlegl ; Michael Reiter ; Markus Diem ; Michael Dworzak ; Angela Schumich ; Georg Langs ; Martin Kappel</i>	
NONLOCAL LOW-RANK AND TOTAL VARIATION CONSTRAINED PET IMAGE RECONSTRUCTION	3874
<i>Nuobei Xie ; Yunmei Chen ; Huafeng Liu</i>	

AUTOMATIC MULTI-ATLAS SEGMENTATION FOR ABDOMINAL IMAGES USING TEMPLATE CONSTRUCTION AND ROBUST PRINCIPAL COMPONENT ANALYSIS.....	3880
<i>Yu Zhao ; Hongwei Li ; Rong Zhou ; Giles Tetteh ; Marc Niethammer ; Bjoern H. Menze</i>	
EARLY DIAGNOSIS OF DIABETIC RETINOPATHY IN OCTA IMAGES BASED ON LOCAL ANALYSIS OF RETINAL BLOOD VESSELS AND FOVEAL AVASCULAR ZONE.....	3886
<i>Nabila Eladawi ; Mohammed Elmogy ; Luay Fraiwan ; Francesco Pichi ; Mohammed Ghazal ; Ahmed Aboelfetouh ; Alaa Riad ; Robert Keynton ; Shlomit Schaal ; Ayman El-Baz</i>	
A NOVEL TWO-STAGE DEEP METHOD FOR MITOSIS DETECTION IN BREAST CANCER HISTOLOGY IMAGES.....	3892
<i>Minglin Ma ; Yinghuan Shi ; Wenbin Li ; Yang Gao ; Jun Xu</i>	
A NEW 3D CNN-BASED CAD SYSTEM FOR EARLY DETECTION OF ACUTE RENAL TRANSPLANT REJECTION.....	3898
<i>Hisham Abdeltawab ; Mohamed Shehata ; Ahmed Shalaby ; Samineh Mesbah ; Maryam El-Baz ; Mohammed Ghazal ; Yasmina Alkhalil ; Mohamed Abouel-Ghar ; Amy C. Dwyer ; Moumen El-Melegy ; Ayman El-Baz</i>	
AUTOMATIC QUANTIFICATION OF STOMATA FOR HIGH-THROUGHPUT PLANT PHENOTYPING.....	3904
<i>Swati Bhugra ; Deepak Mishra ; Anupama Anupama ; Santanu Chaudhury ; Brejesh Lall ; Archana Chugh</i>	
SPATIAL PYRAMID DILATED NETWORK FOR PULMONARY NODULE MALIGNANCY CLASSIFICATION.....	3911
<i>Guokai Zhang ; Ye Luo ; Dandan Zhu ; Yixuan Xu ; Yunxin Sun ; Jianwei Lu</i>	
BREAST SEGMENTATION IN MRI VIA U-NET DEEP CONVOLUTIONAL NEURAL NETWORKS.....	3917
<i>Gabriele Piantadosi ; Mario Sansone ; Carlo Sansone</i>	
A NOVEL ADCS-BASED CNN CLASSIFICATION SYSTEM FOR PRECISE DIAGNOSIS OF PROSTATE CANCER.....	3923
<i>Islam Reda ; Mohammed Ghazal ; Ahmed Shalaby ; Mohammed Elmogy ; Ahmed Abouel-Fetouh ; Babajide O. Ayinde ; Mohamed Abouel-Ghar ; Adel Elmaghraby ; Robert Keynton ; Ayman El-Baz</i>	
AN EFFICIENT APPROACH FOR POLYPS DETECTION IN ENDOSCOPIC VIDEOS BASED ON FASTER R-CNN.....	3929
<i>Xi Mo ; Ke Tao ; Quan Wang ; Guanghui Wang</i>	
A HYBRID FRAMEWORK FOR TUMOR SALIENCY ESTIMATION.....	3935
<i>Fei Xu ; Min Xian ; Yingtao Zhang ; Kuan Huang ; H. D. Cheng ; Boyu Zhang ; Jianrui Ding ; Chungping Ning ; Ying Wang</i>	
NUCLEI SEGMENTATION OF CERVICAL CELL IMAGES BASED ON INTERMEDIATE SEGMENT QUALIFIER.....	3941
<i>Rui Wang ; Sei-Ichiro Kamata</i>	
SEQUENTIALSEGNET: COMBINATION WITH SEQUENTIAL FEATURE FOR MULTI-ORGAN SEGMENTATION.....	3947
<i>Yao Zhang ; Xuan Jiang ; Cheng Zhong ; Yang Zhang ; Zhongchao Shi ; Zhensheng Li ; Zhiqiang He</i>	
Author Index	