

2009 IEEE 12th International Conference on Computer Vision (ICCV 2009)

**Kyoto, Japan
29 September – 2 October 2009**

Pages 1-818



**IEEE Catalog Number: CFP09198-PRT
ISBN: 978-1-4244-4420-5**

TABLE OF CONTENTS

ORAL SESSION 1: SEGMENTATION I

DECOMPOSING A SCENE INTO GEOMETRIC AND SEMANTICALLY CONSISTENT REGIONS.....	3
<i>Stephen Gould, Richard Fulton, Daphne Koller</i>	
BOUNDARY OWNERSHIP BY LIFTING TO 2.1D	11
<i>Ido Leichter, Michael Lindenbaum</i>	
CURVATURE REGULARITY FOR REGION-BASED IMAGE SEGMENTATION AND INPAINTING: A LINEAR PROGRAMMING RELAXATION	19
<i>Thomas Schoenemann, Fredrik Kahl, Daniel Cremers</i>	

ORAL SESSION 2: HUMAN DETECTION

HUMAN DETECTION USING PARTIAL LEAST SQUARES ANALYSIS	29
<i>William R. Schwartz, Aniruddha Kembhavi, David Harwood, Larry S. Davis</i>	
AN HOG-LBP HUMAN DETECTOR WITH PARTIAL OCCLUSION HANDLING	37
<i>XiaoYu Wang, Tony X. Han, Shuicheng Yan</i>	
MAX-MARGIN ADDITIVE CLASSIFIERS FOR DETECTION.....	45
<i>Subhransu Maji, Alexander C. Berg</i>	

ORAL SESSION 3: LEARNING

KERNEL METHODS FOR WEAKLY SUPERVISED MEAN SHIFT CLUSTERING.....	55
<i>Oncel Tuzel, Fatih Porikli, Peter Meer</i>	
FINDING SHAREABLE INFORMATIVE PATTERNS AND OPTIMAL CODING MATRIX FOR MULTICLASS BOOSTING.....	63
<i>Bang Zhang, Getian Ye, Yang Wang, Jie Xu, Gunawan Herman</i>	
LEARNING WITH DYNAMIC GROUP SPARSITY	71
<i>Junzhou Huang, Xiaolei Huang, Dimitris N. Metaxas</i>	

ORAL SESSION 4: GEOMETRY

BUILDING ROME IN A DAY	81
<i>Sameer Agarwal, Noah Snavely, Ian Simon, Steven M. Seitz, Richard Szeliski</i>	
RECONSTRUCTING BUILDING INTERIORS FROM IMAGES	89
<i>Yasutaka Furukawa, Brian Curless, Steven M. Seitz, Richard Szeliski</i>	
IS DUAL LINEAR SELF-CALIBRATION ARTIFICIALLY AMBIGUOUS?	97
<i>Pierre Gurdjos, Adrien Bartoli, Peter Sturm</i>	
GLOBALLY OPTIMAL AFFINE EPIPOLAR GEOMETRY FROM APPARENT CONTOURS	105
<i>Gang Li, Yanghai Tsing</i>	

ORAL SESSION 5: ACTIVITY

ACTIVITY RECOGNITION USING THE VELOCITY HISTORIES OF TRACKED KEYPOINTS	115
<i>Ross Messing, Chris Pal, Henry Kautz</i>	
QUASI-PERIODIC EVENT ANALYSIS FOR SOCIAL GAME RETRIEVAL.....	123
<i>Ping Wang, Gregory D. Abowd, James M. Rehg</i>	
MODELLING ACTIVITY GLOBAL TEMPORAL DEPENDENCIES USING TIME DELAYED PROBABILISTIC GRAPHICAL MODEL	131
<i>Chen Change Loy, Tao Xiang, Shaogang Gong</i>	
ACTION DETECTION IN COMPLEX SCENES WITH SPATIAL AND TEMPORAL AMBIGUITIES.....	139
<i>Yuxiao Hu, Liangliang Cao, Fengjun Lv, Shuicheng Yan, Yihong Gong, Thomas S. Huang</i>	

ORAL SESSION 6: IMAGE AND VIDEO EDITING

SEMI-AUTOMATIC STEREO EXTRACTION FROM VIDEO FOOTAGE	149
<i>Moshe Guttman, Lior Wolf, Daniel Cohen-Or</i>	
FILTER FLOW	156
<i>Steven M. Seitz, Simon Baker</i>	
SHIFT-MAP IMAGE EDITING	164
<i>Yael Pritch, Eitam Kav-Venaki, Shmuel Peleg</i>	

ORAL SESSION 7: SENSING I

LOOKING AROUND THE CORNER USING TRANSIENT IMAGING	175
<i>Ahmed Kirmani, Tyler Hutchison, James Davis, Ramesh Raskar</i>	
MODELING DEFORMABLE OBJECTS FROM A SINGLE DEPTH CAMERA	183
<i>Miao Liao, Qing Zhang, Huamin Wang, Ruigang Yang, Minglun Gong</i>	
A PRISM-BASED SYSTEM FOR MULTISPECTRAL VIDEO ACQUISITION	191
<i>Hao Du, Xin Tong, Xun Cao, Stephen Lin</i>	

ORAL SESSION 8: SHADING AND COLOR

ESTIMATING NATURAL ILLUMINATION FROM A SINGLE OUTDOOR IMAGE	201
<i>Jean-François Lalonde, Alexei A. Efros, Srinivasa G. Narasimhan</i>	
A LINEAR FORMULATION OF SHAPE FROM SPECULAR FLOW	209
<i>Guillermo D. Canas, Yuriy Vasilyev, Yair Adato, Todd Zickler, Steven Gortler, Ohad Ben-Shahar</i>	
LANDMARK-BASED SPARSE COLOR REPRESENTATIONS FOR COLOR TRANSFER	217
<i>Tzu-Wei Huang, Hwann-Tzong Chen</i>	
STEREO FROM FLICKERING CAUSTICS	223
<i>Yohay Swirski, Yoav Y. Schechner, Ben Herzberg, Shahriar Negahdaripour</i>	

ORAL SESSION 9: RECOGNITION

LEARNING A DENSE MULTI-VIEW REPRESENTATION FOR DETECTION, VIEWPOINT CLASSIFICATION AND SYNTHESIS OF OBJECT CATEGORIES	233
<i>Hao Su, Min Sun, Li Fei-Fei, Silvio Savarese</i>	
ON FEATURE COMBINATION FOR MULTICLASS OBJECT CLASSIFICATION	241
<i>Peter Gehler, Sebastian Nowozin</i>	
DISCRIMINATIVE MODELS FOR MULTI-CLASS OBJECT LAYOUT	249
<i>Chaitanya Desai, Deva Ramanan, Charles Fowlkes</i>	
COMBINING EFFICIENT OBJECT LOCALIZATION AND IMAGE CLASSIFICATION	257
<i>Hedi Harzallah, Frédéric Jurie, Cordelia Schmid</i>	

ORAL SESSION 10: VIDEO AND IMAGE SEQUENCES

STORYBOARD SKETCHES FOR CONTENT BASED VIDEO RETRIEVAL	267
<i>John Collomosse, Graham McNeill, Yu Qian</i>	
IMAGE SEQUENCE GEOLOCATION WITH HUMAN TRAVEL PRIORS	275
<i>Evangelos Kalogerakis, Olga Vesselova, James Hays, Alexei A. Efros, Aaron Hertzmann</i>	
YOU'LL NEVER WALK ALONE: MODELING SOCIAL BEHAVIOR FOR MULTI-TARGET TRACKING	283
<i>Stefano Pellegrini, Andreas Ess, Konrad Schindler, Luc V. Gool</i>	

ORAL SESSION 11: SEGMENTATION II

AN EFFICIENT ALGORITHM FOR CO-SEGMENTATION	293
<i>Dorit S. Hochbaum, Vikas Singh</i>	
IMAGE SEGMENTATION WITH A BOUNDING BOX PRIOR	301
<i>Victor Lempitsky, Pushmeet Kohli, Carsten Rother, Toby Sharp</i>	

GLOBALLY OPTIMAL SEGMENTATION OF MULTI-REGION OBJECTS	309
<i>Andrew Delong, Yuri Boykov</i>	

ORAL SESSION 12: SIMILARITY METRICS AND NEAREST NEIGHBORS

SIMILARITY METRICS FOR CATEGORIZATION: FROM MONOLITHIC TO CATEGORY SPECIFIC	319
<i>Boris Babenko, Steve Branson, Serge Belongie</i>	
LOCAL DISTANCE FUNCTIONS: A TAXONOMY, NEW ALGORITHMS, AND AN EVALUATION	327
<i>Deva Ramanan, Simon Baker</i>	
TAGPROP: DISCRIMINATIVE METRIC LEARNING IN NEAREST NEIGHBOR MODELS FOR IMAGE AUTO-ANNOTATION	335
<i>Mathieu Guillaumin, Thomas Mensink, Jakob Verbeek, Cordelia Schmid</i>	
SPARSITY INDUCED SIMILARITY MEASURE FOR LABEL PROPAGATION	343
<i>Hong Cheng, Zicheng Liu, Jie Yang</i>	

ORAL SESSION 13: SENSING II

CODED APERTURE PAIRS FOR DEPTH FROM DEFOCUS	353
<i>Changyin Zhou, Stephen Lin, Shree K. Nayar</i>	
TIME-CONSTRAINED PHOTOGRAPHY	361
<i>Samuel W. Hasinoff, Kiriakos N. Kutulakos, Frédo Durand, William T. Freeman</i>	
LIGHT FIELD VIDEO STABILIZATION	369
<i>Brandon M. Smith, Li Zhang, Hailin Jin, Aseem Agarwala</i>	
SUPER-RESOLUTION FROM A SINGLE IMAGE	377
<i>Daniel Glasner, Shai Bagon, Michal Irani</i>	

ORAL SESSION 14: RECOGNITION, DETECTION AND MATCHING

COMPACT SIGNATURES FOR HIGH-SPEED INTEREST POINT DESCRIPTION AND MATCHING	387
<i>Michael Calonder, Vincent Lepetit, Pascal Fua, Kurt Konolige, James Bowman, Patrick Mählich</i>	
ATTRIBUTE AND SIMILE CLASSIFIERS FOR FACE VERIFICATION	395
<i>Neeraj Kumar, Alexander C. Berg, Peter N. Belhumeur, Shree K. Nayar</i>	
A SHAPE-BASED OBJECT CLASS MODEL FOR KNOWLEDGE TRANSFER	403
<i>Michael Stark, Michael Gesele, Bernt Schiele</i>	

POSTER SESSION 1: LEARNING AND RECOGNITION – 1

LEARNING PEDESTRIAN DYNAMICS FROM THE REAL WORLD	413
<i>Paul Scovanner, Marshall F. Tappen</i>	
RESILIENT SUBCLASS DISCRIMINANT ANALYSIS	421
<i>Dijia Wu, Kim L. Boyer</i>	
FAST RAY FEATURES FOR LEARNING IRREGULAR SHAPES	429
<i>Kevin Smith, Alan Carleton, Vincent Lepetit</i>	
EXTENDING CONTINUOUS CUTS: ANISOTROPIC METRICS AND EXPANSION MOVES	437
<i>Carl Olsson, Martin Byröd, Niels C. Overgaard, Fredrik Kahl</i>	
ROBUST FITTING OF MULTIPLE STRUCTURES: THE STATISTICAL LEARNING APPROACH	445
<i>Tat-Jun Chin, Hanzi Wang, David Suter</i>	
CONSTRAINED CLUSTERING BY SPECTRAL KERNEL LEARNING	453
<i>Zhenguo Li, Jianzhuang Liu</i>	
LEARNING IMAGE SIMILARITY FROM FLICKR GROUPS USING STOCHASTIC INTERSECTION KERNEL MACHINES	460
<i>Gang Wang, Derek Hoiem, David Forsyth</i>	
GROUP-SENSITIVE MULTIPLE KERNEL LEARNING FOR OBJECT CATEGORIZATION	468
<i>Jingjing Yang, Yuanning Li, Yonghong Tian, Lingyu Duan, Wen Gao</i>	

RECOGNIZING ACTIONS BY SHAPE-MOTION PROTOTYPE TREES.....	476
<i>Zhe Lin, Zhuolin Jiang, Larry S. Davis</i>	
SIMULTANEOUS AND ORTHOGONAL DECOMPOSITION OF DATA USING MULTIMODAL DISCRIMINANT ANALYSIS.....	484
<i>Terence Sim, Sheng Zhang, Jianran Li, Yan Chen</i>	
FAST AND ROBUST EARTH MOVER'S DISTANCES.....	492
<i>Ofir Pele, Michael Werman</i>	
ACTIVE SEGMENTATION WITH FIXATION.....	500
<i>Ajay Mishra, Yiannis Aloimonos, Cheong L. Fah</i>	
DIRECTIONAL STATISTICS BRDF MODEL.....	508
<i>Ko Nishino</i>	
MULTI-SCALE OBJECT DETECTION BY CLUSTERING LINES.....	516
<i>Björn Ommer, Jitendra Malik</i>	
LOCAL TRINARY PATTERNS FOR HUMAN ACTION RECOGNITION.....	524
<i>Lahav Yeffet, Lior Wolf</i>	
IS THAT YOU? METRIC LEARNING APPROACHES FOR FACE IDENTIFICATION.....	530
<i>Matthieu Guillaumin, Jakob Verbeek, Cordelia Schmid</i>	
SEMI-SUPERVISED RANDOM FORESTS.....	538
<i>Christian Leistner, Amir Saffari, Jakob Santner, Horst Bischof</i>	
GRAPH CUTS USING A RIEMANNIAN METRIC INDUCED BY TENSOR VOTING.....	546
<i>Hyung Il Koo, Nam Ik Cho</i>	
KERNEL ACTIVE CONTOUR.....	553
<i>Shan Tan, Ioannis A. Kakadiaris</i>	
DIMENSIONALITY REDUCTION AND PRINCIPAL SURFACES VIA KERNEL MAP MANIFOLDS.....	561
<i>Samuel Gerber, Tolga Tasdizen, Ross Whitaker</i>	
JOINT LEARNING OF VISUAL ATTRIBUTES, OBJECT CLASSES AND VISUAL SALIENCY.....	569
<i>Gang Wang, David Forsyth</i>	
BAYESIAN POISSON REGRESSION FOR CROWD COUNTING.....	577
<i>Antoni B. Chan, Nuno Vasconcelos</i>	
EFFICIENT DISCRIMINATIVE LEARNING OF PARTS-BASED MODELS.....	584
<i>M. Pawan Kumar, Andrew Zisserman, Philip H. S. Torr</i>	
PROBABILISTIC OCCLUSION BOUNDARY DETECTION ON SPATIO-TEMPORAL LATTICES.....	592
<i>Mehmet E. Sargin, Luca Bertelli, Bangalore S. Manjunath, Kenneth Rose</i>	
HIGHER-ORDER GRADIENT DESCENT BY FUSION-MOVE GRAPH CUT.....	600
<i>Hiroshi Ishikawa</i>	
ACTIVE SKELETON FOR NON-RIGID OBJECT DETECTION.....	607
<i>Xiang Bai, Xinggang Wang, Longin J. Latecki, Wenyu Liu, Zhuowen Tu</i>	
SPARSE REPRESENTATION OF CAST SHADOWS VIA L1-REGULARIZED LEAST SQUARES.....	615
<i>Xue Mei, Haibin Ling, David W. Jacobs</i>	
ROBUST MULTILINEAR PRINCIPAL COMPONENT ANALYSIS.....	623
<i>Kohei Inoue, Kenji Hara, Kiichi Urahama</i>	
EFFICIENT DISCRIMINATIVE LOCAL LEARNING FOR OBJECT RECOGNITION.....	630
<i>Yen-Yu Lin, Jyun-Fan Tsai, Tyng-Luh Liu</i>	
MULTIPLE KERNELS FOR OBJECT DETECTION.....	638
<i>Andrea Vedaldi, Varun Gulshan, Manik Varma, Andrew Zisserman</i>	
I KNOW WHAT YOU DID LAST SUMMER: OBJECT-LEVEL AUTO-ANNOTATION OF HOLIDAY SNAPS.....	646
<i>Stephan Gammeter, Lukas Bossard, Till Quack, Luc V. Gool</i>	
LEARNING LONG TERM FACE AGING PATTERNS FROM PARTIALLY DENSE AGING DATABASES.....	654
<i>Jinli Suo, Xilin Chen, Shiguang Shan, Wen Gao</i>	
BEYOND THE EUCLIDEAN DISTANCE: CREATING EFFECTIVE VISUAL CODEBOOKS USING THE HISTOGRAM INTERSECTION KERNEL.....	662
<i>Jianxin Wu, James M. Rehg</i>	
INCREMENTAL MULTIPLE KERNEL LEARNING FOR OBJECT RECOGNITION.....	670
<i>Aniruddha Kembhavi, Behjat Siddiquie, Roland Mieziako, Scott McCloskey, Larry S. Davis</i>	
CONVEX OPTIMIZATION FOR MULTI-CLASS IMAGE LABELING WITH A NOVEL FAMILY OF TOTAL VARIATION BASED REGULARIZERS.....	678
<i>Jan Lellmann, Florian Becker, Christoph Schnörr</i>	

SEGMENTATION

THE INFINITE HIDDEN MARKOV RANDOM FIELD MODEL	686
<i>Sotirios P. Chatzis, Gabriel Tsechpenakis</i>	
CONVEX MULTI-REGION SEGMENTATION ON MANIFOLDS	694
<i>Amaël Delaunoy, Ketut Fundana, Emmanuel Prados, Anders Heyden</i>	
CLASS SEGMENTATION AND OBJECT LOCALIZATION WITH SUPERPIXEL NEIGHBORHOODS	702
<i>Brian Fulkerson, Andrea Vedaldi, Stefano Soatto</i>	
SPECTRAL CLUSTERING OF LINEAR SUBSPACES FOR MOTION SEGMENTATION	710
<i>Fabien Lauer, Christoph Schnörr</i>	
MULTIPLE VIEW SEMANTIC SEGMENTATION FOR STREET VIEW IMAGES	718
<i>Jianxiong Xiao, Long Quan</i>	
GRADIENT DOMAIN LAYER SEPARATION UNDER INDEPENDENT MOTION	726
<i>Yunqiang Chen, Ti-Chiun Chang, Chunxiao Zhou, Tong Fang</i>	
IMAGE SEGMENTATION WITH SIMULTANEOUS ILLUMINATION AND REFLECTANCE ESTIMATION: AN ENERGY MINIMIZATION APPROACH	734
<i>Chunming Li, Fang Li, Chiu-Yen Kao, Chenyang Xu</i>	
ROBUST DYNAMICAL MODEL FOR SIMULTANEOUS REGISTRATION AND SEGMENTATION IN A VARIATIONAL FRAMEWORK: A BAYESIAN APPROACH	741
<i>Pratim Ghosh, Mehmet E. Sargin, Bangalore S. Manjunath</i>	
BEYOND CONNECTING THE DOTS: A POLYNOMIAL-TIME ALGORITHM FOR SEGMENTATION AND BOUNDARY ESTIMATION WITH IMPRECISE USER INPUT	749
<i>Thomas Windheuser, Thomas Schoenemann, Daniel Cremers</i>	
IMPLICIT COLOR SEGMENTATION FEATURES FOR PEDESTRIAN AND OBJECT DETECTION	755
<i>Patrick Ott, Mark Everingham</i>	
POWER WATERSHEDS: A NEW IMAGE SEGMENTATION FRAMEWORK EXTENDING GRAPH CUTS, RANDOM WALKER AND OPTIMAL SPANNING FOREST	763
<i>Camille Couprie, Leo Grady, Laurent Najman, Hugues Talbot</i>	
ASSOCIATIVE HIERARCHICAL CRFS FOR OBJECT CLASS IMAGE SEGMENTATION	771
<i>Lúbor Ladický, Chris Russell, Pushmeet Kohli, Philip H. S. Torr</i>	
SEGMENTATION, ORDERING AND MULTI-OBJECT TRACKING USING GRAPHICAL MODELS	779
<i>Chaohui Wang, Martin De La Gorce, Nikos Paragios</i>	
JOINT OPTIMIZATION OF SEGMENTATION AND APPEARANCE MODELS	787
<i>Sara Vicente, Vladimir Kolmogorov, Carsten Rother</i>	
LEVEL SET SEGMENTATION WITH BOTH SHAPE AND INTENSITY PRIORS	795
<i>Siqi Chen, Richard J. Radke</i>	
SCENE SHAPE PRIORS FOR SUPERPIXEL SEGMENTATION.....	803
<i>Alastair P. Moore, Simon J. D. Prince, Jonathan Warrell, Umar Mohammed, Graham Jones</i>	
LIVECUT: LEARNING-BASED INTERACTIVE VIDEO SEGMENTATION BY EVALUATION OF MULTIPLE PROPAGATED CUES	811
<i>Brian L. Price, Bryan S. Morse, Scott Cohen</i>	
NON-EUCLIDEAN IMAGE-ADAPTIVE RADIAL BASIS FUNCTIONS FOR 3D INTERACTIVE SEGMENTATION	819
<i>Benoit Mory, Roberto Ardon, Anthony J. Yezzi, Jean-Philippe Thiran</i>	
AUTOMATIC OVARIAN FOLLICLE QUANTIFICATION FROM 3D ULTRASOUND DATA USING GLOBAL/LOCAL CONTEXT WITH DATABASE GUIDED SEGMENTATION	827
<i>Terrence Chen, Wei Zhang, Sara Good, Kevin S. Zhou, Dorin Comaniciu</i>	
NON-RIGID OBJECT LOCALIZATION AND SEGMENTATION USING EIGENSPACE REPRESENTATION	835
<i>Omar Arif, Patricio A. Vela</i>	
ROBUST GRAPH-CUT SCENE SEGMENTATION AND RECONSTRUCTION FOR FREE-VIEWPOINT VIDEO OF COMPLEX DYNAMIC SCENES	841
<i>Jean-Yves Guillemaut, Joe Kilner, Adrian Hilton</i>	
SALIENCY DRIVEN TOTAL VARIATION SEGMENTATION	849
<i>Michael Donoser, Martin Urschler, Martin Hirzer, Horst Bischof</i>	
FLOSS: FACILITY LOCATION FOR SUBSPACE SEGMENTATION.....	857
<i>Nevena Lazić, Inmar Givoni, Brendan Frey, Parham Aarabi</i>	
VIDEO OBJECT SEGMENTATION BY TRACKING REGIONS	865
<i>William Brendel, Sinisa Todorovic</i>	

TEXEL-BASED TEXTURE SEGMENTATION	873
<i>Sinisa Todorovic, Narendra Ahuja</i>	
LABEL SET PERTURBATION FOR MRF BASED NEUROIMAGING SEGMENTATION	881
<i>Dylan Hower, Vikas Singh, Sterling C. Johnson</i>	
ROBUST IMAGE SEGMENTATION USING LEARNED PRIORS	889
<i>Ayman El-Baz, Georgy Gimel'Farb</i>	
NON-NEGATIVE MATRIX FACTORIZATION OF PARTIAL TRACK DATA FOR MOTION SEGMENTATION	897
<i>Anil M. Cheriyyadat, Richard J. Radke</i>	
EFFICIENT SEGMENTATION USING FEATURE-BASED GRAPH PARTITIONING ACTIVE CONTOURS	905
<i>Filiz Bunyak, Kannappan Palaniappan</i>	
ANALYSIS OF ORIENTATION AND SCALE IN SMOOTHLY VARYING TEXTURES	913
<i>Jason Chang, John W. Fisher III</i>	

POSTER SESSION 2: LEARNING AND RECOGNITION – 2

LEARNING BASED DIGITAL MATTING	923
<i>Yuanjie Zheng, Chandra Kambhampettu</i>	
THE ONE-SHOT SIMILARITY KERNEL	931
<i>Lior Wolf, Tal Hassner, Yaniv Taigman</i>	
A THEORY OF ACTIVE OBJECT LOCALIZATION	937
<i>Alexander Andreopoulos, John K. Tsotsos</i>	
ACTIVE SUBSPACE LEARNING	945
<i>Xiaofei He, Deng Cai</i>	
AUTOMATIC LEARNING AND EXTRACTION OF MULTI-LOCAL FEATURES	951
<i>Oscar Danielsson, Stefan Carlsson, Josephine Sullivan</i>	
FAST REALISTIC MULTI-ACTION RECOGNITION USING MINED DENSE SPATIO-TEMPORAL FEATURES	959
<i>Andrew Gilbert, John Illingworth, Richard Bowden</i>	
QUANTIFYING CONTEXTUAL INFORMATION FOR OBJECT DETECTION	966
<i>Wei-Shi Zheng, Shaogang Gong, Tao Xiang</i>	
FEATURE-CENTRIC EFFICIENT SUBWINDOW SEARCH.....	974
<i>Alain Lehmann, Bastian Leibe, Luc V. Gool</i>	
A LATENT MODEL OF DISCRIMINATIVE ASPECT	982
<i>Ali Farhadi, Mostafa Kamali Tabrizi, Ian Endres, David Forsyth</i>	
UNLABELED DATA IMPROVES WORD PREDICTION	990
<i>Nicolas Loeff, Ali Farhadi, Ian Endres, David Forsyth</i>	
A PROBABILISTIC FRAMEWORK FOR PARTIAL INTRINSIC SYMMETRIES IN GEOMETRIC DATA.....	997
<i>Ruxandra Lasowski, Art Tevs, Hans-Peter Seidel, Michael Wand</i>	
BAYESIAN SELECTION OF SCALING LAWS FOR MOTION MODELING IN IMAGES	1005
<i>Patrick Héas, Etienne Mémin, Dominique Heitz, Pablo D. Mininni</i>	
TOP-DOWN COLOR ATTENTION FOR OBJECT RECOGNITION.....	1013
<i>Fahad Shahbaz Khan, Joost Van De Weijer, Maria Vanrell</i>	
DETECTING OBJECTS IN LARGE IMAGE COLLECTIONS AND VIDEOS BY EFFICIENT SUBIMAGE RETRIEVAL	1021
<i>Christoph H. Lampert</i>	
LEARNING ACTIONS FROM THE WEB	1029
<i>Nazli Ikizler-Cinbis, Ramazan Gokberk Cinbis, Stan Sclaroff</i>	
ACTIVE APPEARANCE MODELS WITH ROTATION INVARIANT KERNELS	1037
<i>Onur C. Hamsici, Aleix M. Martinez</i>	
INCREMENTAL ACTION RECOGNITION USING FEATURE-TREE.....	1044
<i>Kishore K. Reddy, Jingen Liu, Mubarak Shah</i>	
RANKBOOST WITH L_1 REGULARIZATION FOR FACIAL EXPRESSION RECOGNITION AND INTENSITY ESTIMATION	1052
<i>Peng Yang, Qingshan Liu, Dimitris N. Metaxas</i>	
OPTIMAL MULTIPLE SURFACES SEARCHING FOR VIDEO/IMAGE RESIZING - A GRAPH-THEORETIC APPROACH.....	1060
<i>Dongfeng Han, Xiaodong Wu, Milan Sonka</i>	

FACE ALIGNMENT THROUGH SUBSPACE CONSTRAINED MEAN-SHIFTS.....	1068
<i>Jason M. Saragih, Simon Lucey, Jeffrey F. Cohn</i>	
EVALUATING INFORMATION CONTRIBUTIONS OF BOTTOM-UP AND TOP-DOWN PROCESSES.....	1076
<i>Xiong Yang, Tianfu Wu, Song-Chun Zhu</i>	
FACE RECOGNITION WITH CONTIGUOUS OCCLUSION USING MARKOV RANDOM FIELDS.....	1084
<i>Zihan Zhou, Andrew Wagner, Hossein Mobahi, John Wright, Yi Ma</i>	
WHICH FACES TO TAG: ADDING PRIOR CONSTRAINTS INTO ACTIVE LEARNING	1092
<i>Ashish Kapoor, Gang Hua, Amir Akbarzadeh, Simon Baker</i>	
IS A DETECTOR ONLY GOOD FOR DETECTION?.....	1100
<i>Quan Yuan, Stan Sclaroff</i>	
CONSENSUS SET MAXIMIZATION WITH GUARANTEED GLOBAL OPTIMALITY FOR ROBUST GEOMETRY ESTIMATION	1108
<i>Hongdong Li</i>	
EFFICIENT SUBSET SELECTION VIA THE KERNELIZED RÉNYI DISTANCE	1115
<i>Balaji Vasan Srinivasan, Ramani Duraiswami</i>	
A NEAR OPTIMAL ACCEPTANCE-REJECTION ALGORITHM FOR EXACT CROSS-CORRELATION SEARCH.....	1123
<i>Haim Schweitzer, Robert F. Anderson, Rui A. Deng</i>	
HETEROGENEOUS FEATURE MACHINES FOR VISUAL RECOGNITION.....	1129
<i>Liangliang Cao, Jiebo Luo, Feng Liang, Thomas S. Huang</i>	
EFFICIENT INDEXING FOR LARGE SCALE VISUAL SEARCH	1137
<i>Xiao Zhang, Zhiwei Li, Lei Zhang, Wei-Ying Ma, Heung-Yeung Shum</i>	
SPECTRAL ERROR CORRECTING OUTPUT CODES FOR EFFICIENT MULTICLASS RECOGNITION.....	1145
<i>Xiao Zhang, Lin Liang, Heung-Yeung Shum</i>	
KERNEL MAP COMPRESSION USING GENERALIZED RADIAL BASIS FUNCTIONS	1153
<i>Omar Arif, Patricio A. Vela</i>	
PATCH-BASED WITHIN-OBJECT CLASSIFICATION.....	1159
<i>Jania Aghajanian, Jonathan Warrell, Simon J. D. Prince, Peng Li, Jennifer L. Rohn, Buzz Baum</i>	
AN ALGORITHM FOR MINIMIZING THE MUMFORD-SHAH FUNCTIONAL.....	1167
<i>Thomas Pock, Daniel Cremers, Horst Bischof, Antonin Chambolle</i>	
A BIASED SAMPLING STRATEGY FOR OBJECT CATEGORIZATION	1175
<i>Lei Yang, Nanning Zheng, Jie Yang, Mei Chen, Hong Cheng</i>	
ON OPTIMIZING SUBSPACES FOR FACE RECOGNITION	1183
<i>Jilin Tu, Xiaoming Liu, Peter Tu</i>	
STRUCTURAL SVM FOR VISUAL LOCALIZATION AND CONTINUOUS STATE ESTIMATION	1191
<i>Catalin Ionescu, Liefeng Bo, Cristian Sminchisescu</i>	
A MARKOV CLUSTERING TOPIC MODEL FOR MINING BEHAVIOUR IN VIDEO.....	1199
<i>Timothy Hospedales, Shaogang Gong, Tao Xiang</i>	

CAMERA

A BRANCH-AND-BOUND ALGORITHM FOR GLOBALLY OPTIMAL CALIBRATION OF A CAMERA-AND-ROTATION-SENSOR SYSTEM	1207
<i>Yongduek Seo, Young-Ju Choi, Sang Wook Lee</i>	
SIMULTANEOUS CAMERA POSE AND CORRESPONDENCE ESTIMATION IN CORNERLESS IMAGES.....	1213
<i>Wen Yan Lin, Guo Dong, Ping Tan, Loong Fah Cheong, Chye Hwang Yan</i>	
JOINTLY ESTIMATING DEMOGRAPHICS AND HEIGHT WITH A CALIBRATED CAMERA.....	1221
<i>Andrew C. Gallagher, Andrew C. Blose, Tsuhan Chen</i>	
PLANE-BASED CALIBRATION OF CENTRAL CATADIOPTRIC CAMERAS	1229
<i>Simone Gasparini, Peter Sturm, João P. Barreto</i>	
STATIC MULTI-CAMERA FACTORIZATION USING RIGID MOTION.....	1237
<i>Roland Angst, Marc Pollefeys</i>	
SHADOW CAMERAS: RECIPROCAL VIEWS FROM ILLUMINATION MASKS	1245
<i>Sanjeev J. Koppal, Srinivasa G. Narasimhan</i>	
BACKGROUND SUBTRACTION FOR FREELY MOVING CAMERAS.....	1253
<i>Yaser Sheikh, Omar Javed, Takeo Kanade</i>	

DISPLAY-CAMERA CALIBRATION FROM EYE REFLECTIONS	1260
<i>Christian Nitschke, Atsushi Nakazawa, Haruo Takemura</i>	
A HAND-HELD PHOTOMETRIC STEREO CAMERA FOR 3-D MODELING	1268
<i>Tomoaki Higo, Yasuyuki Matsushita, Neel Joshi, Katsushi Ikeuchi</i>	
BODY-RELATIVE NAVIGATION GUIDANCE USING UNCALIBRATED CAMERAS	1276
<i>Olivier Koch, Seth Teller</i>	
NON-ITERATIVE APPROACH FOR FAST AND ACCURATE VANISHING POINT DETECTION	1284
<i>Jean-Philippe Tardif</i>	

MATCHING AND ALIGNMENT

ROBUST MATCHING OF BUILDING FACADES UNDER LARGE VIEWPOINT CHANGES	1292
<i>Jimmy A. Lee, Kin-Choong Yow, Alex Y. S. Chia</i>	
UNSUPERVISED FACE ALIGNMENT BY ROBUST NONRIGID MAPPING	1299
<i>Jianke Zhu, Luc V. Gool, Steven C. H. Hoi</i>	
COARSE REGISTRATION OF 3D SURFACE TRIANGULATIONS BASED ON MOMENT INVARIANTS WITH APPLICATIONS TO OBJECT ALIGNMENT AND IDENTIFICATION	1307
<i>Michael Trummer, Herbert Suesse, Joachim Denzler</i>	
FEATURE CORRESPONDENCE AND DEFORMABLE OBJECT MATCHING VIA AGGLOMERATIVE CORRESPONDENCE CLUSTERING	1314
<i>Minsu Cho, Jungmin Lee, Kyoung Mu Lee</i>	
SUBSPACE MATCHING: UNIQUE SOLUTIONS TO POINT MATCHING WITH GEOMETRIC CONSTRAINTS	1322
<i>Manuel Marques, Marko Stosic, João P. Costeira</i>	
OPTIMAL CORRESPONDENCES FROM PAIRWISE CONSTRAINTS	1329
<i>Olof Enqvist, Klas Josephson, Fredrik Kahl</i>	
DEFORMATION INVARIANT IMAGE MATCHING BY SPECTRALLY CONTROLLED DIFFEOMORPHIC ALIGNMENT	1337
<i>Christopher M. Yang, Sai Ravela</i>	
WIDE-BASELINE IMAGE MATCHING USING LINE SIGNATURES	1345
<i>Lu Wang, Ulrich Neumann, Suya You</i>	
MATCHING AS A NON-COOPERATIVE GAME	1353
<i>Andrea Albarelli, Samuel Rota Bulò, Andrea Torsello, Marcello Pelillo</i>	
SIMULTANEOUS ALIGNMENT AND CLUSTERING FOR AN IMAGE ENSEMBLE	1361
<i>Xiaoming Liu, Yan Tong, Frederick W. Wheeler</i>	
AN ALGEBRAIC APPROACH TO AFFINE REGISTRATION OF POINT SETS	1369
<i>Jeffrey Ho, Adrian Peter, Anand Rangarajan, Ming-Hsuan Yang</i>	

POSE

CONSTRUCTING IMPLICIT 3D SHAPE MODELS FOR POSE ESTIMATION	1375
<i>Mica Arie-Nachimson, Ronen Basri</i>	
EFFICIENT HUMAN POSE ESTIMATION VIA PARSING A TREE STRUCTURE BASED HUMAN MODEL	1383
<i>Xiaoqin Zhang, Changcheng Li, Xiaofeng Tong, Weiming Hu, Steve Maybank, Yimin Zhang</i>	
HUMAN POSE ESTIMATION USING CONSISTENT MAX-COVERING	1391
<i>Hao Jiang</i>	
POSELETS: BODY PART DETECTORS TRAINED USING 3D HUMAN POSE ANNOTATIONS	1399
<i>Lubomir Bourdev, Jitendra Malik</i>	
JOINT POSE ESTIMATOR AND FEATURE LEARNING FOR OBJECT DETECTION	1407
<i>Karim Ali, François Fleuret, David Hasler, Pascal Fua</i>	
ESTIMATING HUMAN SHAPE AND POSE FROM A SINGLE IMAGE	1415
<i>Peng Guan, Alexander Weiss, Alexandru O. Balan, Michael J. Black</i>	

POSTER SESSION 3: VIDEO AND TRACKING

TRACKING IN UNSTRUCTURED CROWDED SCENES	1425
<i>Mikel Rodriguez, Saad Ali, Takeo Kanade</i>	

VIDEO STABILIZATION USING ROBUST FEATURE TRAJECTORIES	1433
<i>Ken-Yi Lee, Yung-Yu Chuang, Bing-Yu Chen, Ming Ouhyoung</i>	
COMPLEX VOLUME AND POSE TRACKING WITH PROBABILISTIC DYNAMICAL MODELS AND VISUAL HULL CONSTRAINTS.....	1441
<i>Norimichi Ukita, Michiro Hirai, Masatsugu Kidode</i>	
ABSOLUTE SCALE IN STRUCTURE FROM MOTION FROM A SINGLE VEHICLE MOUNTED CAMERA BY EXPLOITING NONHOLONOMIC CONSTRAINTS	1449
<i>Davide Scaramuzza, Friedrich Fraundorfer, Marc Pollefeys, Roland Siegwart</i>	
DOMAIN ADAPTIVE SEMANTIC DIFFUSION FOR LARGE SCALE CONTEXT-BASED VIDEO ANNOTATION.....	1456
<i>Yu-Gang Jiang, Jun Wang, Shih-Fu Chang, Chong-Wah Ngo</i>	
STABILIZING MOTION TRACKING USING RETRIEVED MOTION PRIORS	1464
<i>Andreas Baak, Bodo Rosenhahn, Meinard Müller, Hans-Peter Seidel</i>	
ROBUST VISUAL TRACKING USING L_1 MINIMIZATION	1472
<i>Xue Mei, Haibin Ling</i>	
THE NORMALIZED SUBSPACE INCLUSION: ROBUST CLUSTERING OF MOTION SUBSPACES	1480
<i>Nuno Pinho Da Silva, João P. Costeira</i>	
LABELME VIDEO: BUILDING A VIDEO DATABASE WITH HUMAN ANNOTATIONS.....	1487
<i>Jenny Yuen, Bryan Russell, Ce Liu, Antonio Torralba</i>	
A ROBUST BOOSTING TRACKER WITH MINIMUM ERROR BOUND IN A CO-TRAINING FRAMEWORK	1495
<i>Rong Liu, Jian Cheng, Hanqing Lu</i>	
USING INDIVIDUALITY TO TRACK INDIVIDUALS: CLUSTERING INDIVIDUAL TRAJECTORIES IN CROWDS USING LOCAL APPEARANCE AND FREQUENCY TRAIT	1503
<i>Daisuke Sugimura, Kris M. Kitani, Takahiro Okabe, Yoichi Sato, Akihiro Sugimoto</i>	
TRACKING A HAND MANIPULATING AN OBJECT	1511
<i>Henning Hamer, Konrad Schindler, Esther Koller-Meier, Luc V. Gool</i>	
ROBUST FACIAL FEATURE TRACKING USING SELECTED MULTI-RESOLUTION LINEAR PREDICTORS.....	1519
<i>Eng-Jon Ong, Yuxuan Lan, Barry Theobald, Richard Harvey, Richard Bowden</i>	
AUTOMATIC ANNOTATION OF HUMAN ACTIONS IN VIDEO.....	1527
<i>Olivier Duchenne, Ivan Laptev, Josef Sivic, Francis Bach, Jean Ponce</i>	
DETECTION AND REMOVAL OF CHROMATIC MOVING SHADOWS IN SURVEILLANCE SCENARIOS.....	1535
<i>Ivan Huerta, Michael Holte, Thomas Moeslund, Jordi González</i>	
LEARNING DEFORMABLE ACTION TEMPLATES FROM CLUTTERED VIDEOS	1543
<i>Benjamin Yao, Song-Chun Zhu</i>	
ROBUST TRACKING-BY-DETECTION USING A DETECTOR CONFIDENCE PARTICLE FILTER	1551
<i>Michael D. Breitenstein, Fabian Reichlin, Bastian Leibe, Esther Koller-Meier, Luc V. Gool</i>	
AN INFORMATION THEORETIC APPROACH FOR TRACKER PERFORMANCE EVALUATION	1559
<i>Edward K. Kao, Matthew P. Daggett, Michael B. Hurley</i>	
ADAPTIVE FRAGMENTS-BASED TRACKING OF NON-RIGID OBJECTS USING LEVEL SETS.....	1566
<i>Prakash Chockalingam, Nalin Pradeep, Stan Birchfield</i>	
KEYFRAME-BASED REAL-TIME CAMERA TRACKING	1574
<i>Zilong Dong, Guofeng Zhang, Jiaya Jia, Hujun Bao</i>	
TRACKING A LARGE NUMBER OF OBJECTS FROM MULTIPLE VIEWS	1582
<i>Zheng Wu, Nickolay I. Hristov, Tyson L. Hedrick, Thomas H. Kunz, Margrit Betke</i>	
DETECTION DRIVEN ADAPTIVE MULTI-CUE INTEGRATION FOR MULTIPLE HUMAN TRACKING	1590
<i>Ming Yang , Fengjun Lv, Wei Xu, Yihong Gong</i>	
OPTICAL FLOW ESTIMATION ON COARSE-TO-FINE REGION-TREES USING DISCRETE OPTIMIZATION	1598
<i>Cheng Lei, Yee-Hong Yang</i>	
A NEW MULTIVIEW SPACETIME-CONSISTENT DEPTH RECOVERY FRAMEWORK FOR FREE VIEWPOINT VIDEO RENDERING.....	1606
<i>Cheng Lei, Xi Da Chen, Yee-Hong Yang</i>	
RECONSTRUCTING 3D MOTION TRAJECTORIES OF PARTICLE SWARMS BY GLOBAL CORRESPONDENCE SELECTION	1614
<i>Danping Zou, Qi Zhao, Hai Shan Wu, Yan Qiu Chen</i>	

SURF TRACKING	1622
<i>Wei He, Takayoshi Yamashita, Hongtao Lu, Shihong Lao</i>	
SPATIO-TEMPORAL RELATIONSHIP MATCH: VIDEO STRUCTURE COMPARISON FOR RECOGNITION OF COMPLEX HUMAN ACTIVITIES	1629
<i>M. S. Ryoo, J. K. Aggarwal</i>	
ROBUST MOTION ESTIMATION USING TRAJECTORY SPECTRUM LEARNING: APPLICATION TO AORTIC AND MITRAL VALVE MODELING FROM 4D TEE	1637
<i>Razvan Ioan Ionasec, Yang Wang, Bogdan Georgescu, Ingmar Voigt, Nassir Navab, Dorin Comaniciu</i>	
LARGE DISPLACEMENT OPTICAL FLOW COMPUTATION WITHOUT WARPING	1645
<i>Frank Steinbrücker, Thomas Pock, Daniel Cremers</i>	
A DIRECT APPROACH FOR EFFICIENTLY TRACKING WITH 3D MORPHABLE MODELS	1651
<i>Enrique Muñoz, José M. Buenaposada, Luis Baumela</i>	
ILLUMINATION AWARE MCMC PARTICLE FILTER FOR LONG-TERM OUTDOOR MULTI-OBJECT SIMULTANEOUS TRACKING AND CLASSIFICATION	1659
<i>François Bardet, Thierry Chateau, Datta Ramadasan</i>	
REAL-TIME VISUAL TRACKING VIA INCREMENTAL COVARIANCE TENSOR LEARNING	1667
<i>Yi Wu, Jian Cheng, Jinqiao Wang, Hanqing Lu</i>	
EFFICIENT PRIVACY PRESERVING VIDEO SURVEILLANCE	1675
<i>Maneesh Upmanyu, Anoop M. Namboodiri, Kannan Srinathan, C. V. Jawahar</i>	
CORRELATED PROBABILISTIC TRAJECTORIES FOR PEDESTRIAN MOTION DETECTION	1683
<i>Frank Perbet, Atsuto Maki, Björn Stenger</i>	
VIDEO SCENE CATEGORIZATION BY 3D HIERARCHICAL HISTOGRAM MATCHING	1691
<i>Paritosh Gupta, Sai Sankalp Arrabolu, Mathew Brown, Silvio Savarese</i>	
STRUCTURE- AND MOTION-ADAPTIVE REGULARIZATION FOR HIGH ACCURACY OPTIC FLOW	1699
<i>Andreas Wedel, Daniel Cremers, Thomas Pock, Horst Bischof</i>	
VIDEO SCENE UNDERSTANDING USING MULTI-SCALE ANALYSIS	1705
<i>Yang Yang, Jingen Liu, Mubarak Shah</i>	

3D: SHAPE, GEOMETRY, AND STEREO

SUPERRESOLUTION TEXTURE MAPS FOR MULTIVIEW RECONSTRUCTION	1713
<i>Bastian Goldluecke, Daniel Cremers</i>	
BLOGS: BALANCED LOCAL AND GLOBAL SEARCH FOR NON-DEGENERATE TWO VIEW EPIPOLAR GEOMETRY	1721
<i>Aveek S. Brahmachari, Sudeep Sarkar</i>	
ATTACHED SHADOW CODING: ESTIMATING SURFACE NORMALS FROM SHADOWS UNDER UNKNOWN REFLECTANCE AND LIGHTING CONDITIONS	1729
<i>Takahiro Okabe, Imari Sato, Yoichi Sato</i>	
FACTORIZING SCENE ALBEDO AND DEPTH FROM A SINGLE FOGGY IMAGE	1737
<i>Louis Kratz, Ko Nishino</i>	
COMPLETE MULTI-VIEW RECONSTRUCTION OF DYNAMIC SCENES FROM PROBABILISTIC FUSION OF NARROW AND WIDE BASELINE STEREO	1745
<i>Tony Tung, Shohei Nobuhara, Takashi Matsuyama</i>	
HIERARCHICAL 3D DIFFUSION WAVELET SHAPE PRIORS	1753
<i>Salma Essafi, Georg Langs, Nikos Paragios</i>	
A NEW MINIMAL SOLUTION TO THE RELATIVE POSE OF A CALIBRATED STEREO CAMERA WITH SMALL FIELD OF VIEW OVERLAP	1761
<i>Brian Clipp, Christopher Zach, Jan-Michael Frahm, Marc Pollefeys</i>	
IMPROVING ACCURACY OF GEOMETRIC PARAMETER ESTIMATION USING PROJECTED SCORE METHOD	1769
<i>Takayuki Okatani, Koichiro Deguchi</i>	
MOVING IN STEREO: EFFICIENT STRUCTURE AND MOTION USING LINES	1777
<i>Manmohan Chandraker, Jongwoo Lim, David Kriegman</i>	
COLOR CONSTANCY USING 3D SCENE GEOMETRY	1785
<i>Rui Lu, Arjan Gijsenij, Theo Gevers, Vladimir Nedovic, De Xu, Jan-Mark Geusebroek</i>	
SIMULTANEOUS PHOTOMETRIC INVARIANCE AND SHAPE RECOVERY	1793
<i>Cong Phuoc Huynh, Antonio Robles-Kelly</i>	
COMPONENT ANALYSIS APPROACH TO ESTIMATION OF TISSUE INTENSITY DISTRIBUTIONS OF 3D IMAGES	1801
<i>Arridhana Ciptadi, Cheng Chen, Vitali Zagorodnov</i>	

SIMULTANEOUS COLOR CONSISTENCY AND DEPTH MAP ESTIMATION FOR RADIOMETRICALLY VARYING STEREO IMAGES.....	1807
<i>Yong Seok Heo, Kyoung Mu Lee, Sang Uk Lee</i>	
DENSE 3D RECONSTRUCTION METHOD USING A SINGLE PATTERN FOR FAST MOVING OBJECT	1815
<i>Ryusuke Sagawa, Yuichi Ota, Yasushi Yagi, Ryo Furukawa, Naoki Asada, Hiroshi Kawasaki</i>	
HIGH-RESOLUTION SHAPE RECONSTRUCTION FROM MULTIPLE RANGE IMAGES BASED ON SIMULTANEOUS ESTIMATION OF SURFACE AND MOTION.....	1823
<i>Yoshihiro Watanabe, Takashi Komuro, Masatoshi Ishikawa</i>	
SINGLE VIEW RECONSTRUCTION USING SHAPE GRAMMARS FOR URBAN ENVIRONMENTS	1831
<i>Panagiotis Koutsourakis, Loïc Simon, Olivier Teboul, Georgios Tziritas, Nikos Paragios</i>	
3D RECONSTRUCTION FROM IMAGE COLLECTIONS WITH A SINGLE KNOWN FOCAL LENGTH	1839
<i>Martin Bujnak, Zuzana Kukelova, Tomas Pajdla</i>	
TEMPLATE-FREE MONOCULAR RECONSTRUCTION OF DEFORMABLE SURFACES.....	1847
<i>Aydin Varol, Mathieu Salzmann, Engin Tola, Pascal Fua</i>	
SEEING 3D OBJECTS IN A SINGLE 2D IMAGE	1855
<i>Diego Rother, Guillermo Sapiro</i>	
MULTIPERSPECTIVE STEREO MATCHING AND VOLUMETRIC RECONSTRUCTION	1863
<i>Yuanyuan Ding, Jingyi Yu, Peter Sturm</i>	
STRUCTURE AND KINEMATICS TRIANGULATION WITH A ROLLING SHUTTER STEREO RIG	1871
<i>Omar Ait-Aider, François Berry</i>	
THE SELF-AWARE MATCHING MEASURE FOR STEREO.....	1877
<i>Philippos Mordohai</i>	
RECOVERING THE SPATIAL LAYOUT OF CLUTTERED ROOMS	1885
<i>Varsha Hedau, Derek Hoiem, David Forsyth</i>	
3D OPEN-SURFACE SHAPE CORRESPONDENCE FOR STATISTICAL SHAPE MODELING: IDENTIFYING TOPOLOGICALLY CONSISTENT LANDMARKS	1893
<i>Pahal Dalal, Lili Ju, Michael McLaughlin, Xiangrong Zhou, Hiroshi Fujita, Song Wang</i>	
DIAGRAM TECHNIQUES FOR MULTIPLE VIEW GEOMETRY	1901
<i>Alberto Ruiz, Pedro E. Lopez-De-Teruel</i>	
MODELING 3D HUMAN POSES FROM UNCALIBRATED MONOCULAR IMAGES	1909
<i>Xiaolin K. Wei, Jinxiang Chai</i>	
PIECEWISE PLANAR STEREO FOR IMAGE-BASED RENDERING	1917
<i>Sudipta N. Sinha, Drew Steedly, Richard Szeliski</i>	
RADIOMETRIC COMPENSATION USING STRATIFIED INVERSES	1925
<i>Tian-Tsong Ng, Ramanpreet S. Pahwa, Jiamin Bai, Tony Q. S. Quek, Kar-Han Tan</i>	
 <u>POSTER SESSION 4: LEARNING AND RECOGNITION – 3</u>	
COMPUTATION COMPLEXITY OF BRANCH-AND-BOUND MODEL SELECTION	1933
<i>Ninad Thakoor, Venkat Devarajan, Jean Gao</i>	
A NOVEL APPROACH TO EXPRESSION RECOGNITION FROM NON-FRONTAL FACE IMAGES.....	1939
<i>Wenming Zheng, Hao Tang, Zhouchen Lin, Thomas S. Huang</i>	
MODE-DETECTION VIA MEDIAN-SHIFT.....	1947
<i>Lior Shapira, Shai Avidan, Ariel Shamir</i>	
THE DIMENSIONALITY OF SCENE APPEARANCE	1955
<i>Rahul Garg, Hao Du, Steven M. Seitz, Noah Snavely</i>	
WEAKLY SUPERVISED DISCRIMINATIVE LOCALIZATION AND CLASSIFICATION: A JOINT LEARNING PROCESS	1963
<i>Minh Hoai Nguyen, Lorenzo Torresani, Fernando De La Torre, Carsten Rother</i>	
SELECTION AND CONTEXT FOR ACTION RECOGNITION.....	1971
<i>Dong Han, Liefeng Bo, Cristian Sminchisescu</i>	
TIME SERIES PREDICTION BY CHAOTIC MODELING OF NONLINEAR DYNAMICAL SYSTEMS	1979
<i>Arslan Basharat, Mubarak Shah</i>	
LEAST-SQUARES CONGEALING FOR LARGE NUMBERS OF IMAGES	1987
<i>Mark Cox, Sridha Sridharan, Simon Lucey, Jeffrey F. Cohn</i>	

LANDMARK CLASSIFICATION IN LARGE-SCALE IMAGE COLLECTIONS	1995
<i>Yunpeng Li, David J. Crandall, Daniel P. Huttenlocher</i>	
DETECTION OF HUMAN ACTIONS FROM A SINGLE EXAMPLE	2003
<i>Hae Jong Seo, Peyman Milanfar</i>	
HIERARCHICAL GAUSSIANIZATION FOR IMAGE CLASSIFICATION	2009
<i>Xi Zhou, Na Cui, Zhen Li, Feng Liang, Thomas S. Huang</i>	
CONTEXT BY REGION ANCESTRY	2016
<i>Joseph J. Lim, Pablo Arbeláez, Chunhui Gu, Jitendra Malik</i>	
A STUDY ON AUTOMATIC AGE ESTIMATION USING A LARGE DATABASE	2024
<i>Guodong Guo, Guowang Mu, Yun Fu, Charles Dyer, Thomas S. Huang</i>	
A MULTI-SAMPLE, MULTI-TREE APPROACH TO BAG-OF-WORDS IMAGE REPRESENTATION FOR IMAGE RETRIEVAL	2030
<i>Zhong Wu, Qifa Ke, Jian Sun, Heung-Yeung Shum</i>	
DISCRIMINATIVE GENERALIZED HOUGH TRANSFORM FOR OBJECT DETECTION	2038
<i>Ryuzo Okada</i>	
UNTANGLING FIBERS BY QUOTIENT APPEARANCE MANIFOLD MAPPING FOR GRAYSCALE SHAPE CLASSIFICATION	2044
<i>Yoshihisa Shinagawa, Yuping Lin</i>	
BUILDING RECOGNITION USING SKETCH-BASED REPRESENTATIONS AND SPECTRAL GRAPH MATCHING	2052
<i>Yu-Chia Chung, Tony X. Han, Zhihai He</i>	
HIERARCHICAL LEARNING FOR TUBULAR STRUCTURE PARSING IN MEDICAL IMAGING: A STUDY ON CORONARY ARTERIES USING 3D CT ANGIOGRAPHY	2059
<i>Le Lu, Jinbo Bi, Shipeng Yu, Zhigang Peng, Arun Krishnan, Xiang Zhou</i>	
IMAGE ANNOTATION USING MULTI-LABEL CORRELATED GREEN'S FUNCTION	2067
<i>Hua Wang, Heng Huang, Chris Ding</i>	
INCREMENTAL DISCRIMINATIVE-ANALYSIS OF CANONICAL CORRELATIONS FOR ACTION RECOGNITION	2073
<i>Xinxiao Wu, Wei Liang, Yunde Jia</i>	
MINIMIZING ENERGY FUNCTIONS ON 4-CONNECTED LATTICES USING ELIMINATION	2080
<i>Peter Carr, Richard Hartley</i>	
A RIEMANNIAN ANALYSIS OF 3D NOSE SHAPES FOR PARTIAL HUMAN BIOMETRICS	2088
<i>Hassen Drira, Boulbaba Ben Amor, Anuj Srivastava, Mohamed Daoudi</i>	
A HYBRID GENERATIVE/DISCRIMINATIVE CLASSIFICATION FRAMEWORK BASED ON FREE-ENERGY TERMS	2096
<i>Alessandro Perina, Marco Cristani, Umberto Castellani, Vittorio Murino, Nebojsa Jojic</i>	
REALTIME BACKGROUND SUBTRACTION FROM DYNAMIC SCENES	2104
<i>Li Cheng, Minglun Gong</i>	
EXPLOITING UNCERTAINTY IN RANDOM SAMPLE CONSENSUS	2112
<i>Rahul Raguram, Jan-Michael Frahm, Marc Pollefeys</i>	
A ROBUST ELASTIC AND PARTIAL MATCHING METRIC FOR FACE RECOGNITION	2120
<i>Gang Hua, Amir Akbarzadeh</i>	
SCRAMSAC: IMPROVING RANSAC'S EFFICIENCY WITH A SPATIAL CONSISTENCY FILTER	2128
<i>Torsten Sattler, Bastian Leibe, Leif Kobbelt</i>	
EFFICIENT MULTI-LABEL RANKING FOR MULTI-CLASS LEARNING: APPLICATION TO OBJECT RECOGNITION	2136
<i>Serhat S. Bucak, Pavan Kumar Mallapragada, Rong Jin, Anil K. Jain</i>	
LEARNING TO PREDICT WHERE HUMANS LOOK	2144
<i>Tilke Judd, Krista Ehinger, Frédo Durand, Antonio Torralba</i>	
TENSOR COMPLETION FOR ESTIMATING MISSING VALUES IN VISUAL DATA	2152
<i>Ji Liu, Przemyslaw Musialski, Peter Wonka, Jieping Ye</i>	
UNSUPERVISED LEARNING OF HIGH-ORDER STRUCTURAL SEMANTICS FROM IMAGES	2160
<i>Jizhou Gao, Yin Hu, Jinze Liu, Ruigang Yang</i>	
KERNELIZED LOCALITY-SENSITIVE HASHING FOR SCALABLE IMAGE SEARCH	2168
<i>Brian Kulis, Kristen Grauman</i>	
ACTIONABLE INFORMATION IN VISION	2176
<i>Stefano Soatto</i>	
WHAT IS THE BEST MULTI-STAGE ARCHITECTURE FOR OBJECT RECOGNITION?	2184
<i>Kevin Jarrett, Koray Kavukcuoglu, Marc' Aurelio Ranzato, Yann Lecun</i>	
SHAPE-BASED RECOGNITION OF 3D POINT CLOUDS IN URBAN ENVIRONMENTS	2192
<i>Aleksey Golovinskiy, Vladimir G. Kim, Thomas Funkhouser</i>	

LOW LEVEL VISION AND OTHERS

MULTISCALE SYMMETRIC PART DETECTION AND GROUPING.....	2200
<i>Alex Levinshstein, Cristian Sminchisescu, Sven Dickinson</i>	
RECOVERING PLANAR HOMOGRAPHIES BETWEEN 2D SHAPES.....	2208
<i>Jozsef Nemeth, Csaba Domokos, Zoltan Kato</i>	
MULTIMODAL PARTIAL ESTIMATES FUSION.....	2215
<i>Jiang Xu, Junsong Yuan, Ying Wu</i>	
IMAGE SALIENCY BY ISOCENTRIC CURVEDNESS AND COLOR	2223
<i>Roberto Valenti, Nicu Sebe, Theo Gevers</i>	
GROUPSAC: EFFICIENT CONSENSUS IN THE PRESENCE OF GROUPINGS	2231
<i>Kai Ni, Hailin Jin, Frank Dellaert</i>	
FAST VISIBILITY RESTORATION FROM A SINGLE COLOR OR GRAY LEVEL IMAGE.....	2239
<i>Jean-Philippe Tarel, Nicolas Hautière</i>	
SCALE INVARIANCE AND NOISE IN NATURAL IMAGES	2247
<i>Daniel Zoran, Yair Weiss</i>	
IMAGE RESTORATION USING ONLINE PHOTO COLLECTIONS.....	2255
<i>Kevin Dale, Micah K. Johnson, Kalyan Sunkavalli, Wojciech Matusik, Hanspeter Pfister</i>	
FINDING GOOD COMPOSITION IN PANORAMIC SCENES.....	2263
<i>Yuan-Yang Chang, Hwann-Tzong Chen</i>	
A FRAMEWORK FOR VISUAL SALIENCY DETECTION WITH APPLICATIONS TO IMAGE THUMBNAILING.....	2270
<i>Luca Marchesotti, Claudio Cifarelli, Gabriela Csurka</i>	
OPTIMIZING PARAMETRIC TOTAL VARIATION MODELS.....	2278
<i>Petter Strandmark, Fredrik Kahl, Niels C. Overgaard</i>	
DEFORMABLE MODEL FITTING WITH A MIXTURE OF LOCAL EXPERTS	2286
<i>Jason M. Saragih, Simon Lucey, Jeffrey F. Cohn</i>	
DETECTING INTERPRETABLE AND ACCURATE SCALE-INVARIANT KEYPOINTS	2294
<i>Wolfgang Förstner, Timo Dickscheid, Falko Schindler</i>	
THE SWAP AND EXPANSION MOVES REVISITED AND FUSED.....	2302
<i>Ido Leichter</i>	
NON-LOCAL SPARSE MODELS FOR IMAGE RESTORATION	2310
<i>Julien Mairal, Francis Bach, Jean Ponce, Guillermo Sapiro, Andrew Zisserman</i>	
WEIGHTED GRAPH CHARACTERISTICS FROM ORIENTED LINE GRAPH POLYNOMIALS	2318
<i>Peng Ren, Richard C. Wilson, Edwin R. Hancock</i>	
SHAPE GUIDED CONTOUR GROUPING WITH PARTICLE FILTERS.....	2326
<i>Chengen Lu, Longin J. Latecki, Nagesh Adluru, Xingwei Yang, Haibin Ling</i>	
AN ALGEBRAIC MODEL FOR FAST CORNER DETECTION	2334
<i>Andrew Willis, Yunfeng Sui</i>	
SEEING THROUGH WATER: IMAGE RESTORATION USING MODEL-BASED TRACKING.....	2341
<i>Yuandong Tian, Srinivasa G. Narasimhan</i>	
PIECEWISE-CONSISTENT COLOR MAPPINGS OF IMAGES ACQUIRED UNDER VARIOUS CONDITIONS	2349
<i>Sefy Kagarlitsky, Yael Moses, Yacov Hel-Or</i>	
A GLOBAL PERSPECTIVE ON MAP INFERENCE FOR LOW-LEVEL VISION.....	2357
<i>Oliver J. Woodford, Carsten Rother, Vladimir Kolmogorov</i>	
RIEMANNIAN BAYESIAN ESTIMATION OF DIFFUSION TENSOR IMAGES.....	2365
<i>Kai Krajsek, Marion I. Menzel, Hanno Scharf</i>	
GROUND TRUTH DATASET AND BASELINE EVALUATIONS FOR INTRINSIC IMAGE ALGORITHMS	2373
<i>Roger Grosse, Micah K. Johnson, Edward H. Adelson, William T. Freeman</i>	
IMAGE COMPRESSION WITH ANISOTROPIC TRIANGULATIONS	2381
<i>Sébastien Bogleux, Gabriel Peyré, Laurent D. Cohen</i>	
SHAPE ANALYSIS WITH MULTIVARIATE TENSOR-BASED MORPHOMETRY AND HOLOMORPHIC DIFFERENTIALS	2387
<i>Yalin Wang, Tony F. Chan, Arthur W. Toga, Paul M. Thompson</i>	
PACKING BAG-OF-FEATURES	2395
<i>Hervé Jégou, Matthijs Douze, Cordelia Schmid</i>	
STUDYING BRAIN MORPHOMETRY USING CONFORMAL EQUIVALENCE CLASS.....	2403
<i>Yalin Wang, Wei Dai, Yi-Yu Chou, Xianfeng Gu, Tony F. Chan, Arthur W. Toga, Paul M. Thompson</i>	

LARGE-SCALE PRIVACY PROTECTION IN GOOGLE STREET VIEW	2411
<i>Andrea Frome, German Cheung, Ahmad Abdulkader, Marco Zennaro, Bo Wu, Alessandro Bissacco, Hartwig Adam, Hartmut Neven, Luc Vincent</i>	
EFFICIENT, HIGH-QUALITY IMAGE CONTOUR DETECTION	2419
<i>Bryan Catanzaro, Bor-Yiing Su, Narayanan Sundaram, Yunsup Lee, Mark Murphy, Kurt Keutzer</i>	
ESTIMATING CONTACT DYNAMICS.....	2427
<i>Marcus A. Brubaker, Leonid Sigal, David J. Fleet</i>	
Author Index	