

2012 IEEE Workshop on Applications of Computer Vision

(WACV 2012)

**Breckenridge, Colorado, USA
9-11 January 2012**



IEEE Catalog Number: CFP12082-PRT
ISBN: 978-1-4673-0233-3

TABLE OF CONTENTS

Street View Goes Indoors: Automatic Pose Estimation From Uncalibrated Unordered Spherical Panoramas.....	1
<i>M. Aly, J.Y. Bouguet</i>	
Implementing High Resolution Structured Light by Exploiting Projector Blur.....	9
<i>C. Taylor</i>	
A New Upsampling Method for Mobile LiDAR Data.....	17
<i>R. Wang, J. Bach, J. Macfarlane, F. Ferrie</i>	
PTZ Camera Network Calibration from Moving People in Sports Broadcasts.....	25
<i>J. Puwein, R. Ziegler, L. Ballan, M. Pollefeys</i>	
Real-time 3-D Face Tracking and Modeling From a Webcam	33
<i>J. Choi, Y. Dumortier, S.I. Choi, M. Ahmad, G. Medioni</i>	
Improving Realism of 3D Texture using Component Based Modeling	41
<i>S. Kherada, P. Pandey, A. Namboodiri</i>	
Mutual Occlusion between Real and Virtual Elements in Augmented Reality based on Fiducial Markers	48
<i>S. Sanches, D. Tokunaga, V. Silva, A. Sementille, R. Tori</i>	
Efficient Tracking of Ants in Long Video with GPU and Interaction	54
<i>C. Poff, H. Nguyen, T. Kang, M. Shin</i>	
Fast Graph Cuts using Shrink-Expand Reparameterization.....	60
<i>P. Sakurikar, P.J. Narayanan</i>	
Non-Rigid Surface Detection for Gestural Interaction with Applicable Surfaces.....	67
<i>A. Ziegler, S. Belongie</i>	
Face Typing: Vision-Based Perceptual Interface for Hands-Free Text Entry with a Scrollable Virtual Keyboard	75
<i>Y. Gizatdinova, O. Spakov, V. Surakka</i>	
Real-time Stereo and Flow-based Video Segmentation with Superpixels	82
<i>M. Bergh, L. Gool</i>	
Illumination-Free Photometric Metric for Range Image Registration.....	90
<i>D. Thomas, A. Sugimoto</i>	
Robust Tracking for Interactive Social Video.....	98
<i>S. Wilk, S. Kopf, W. Effelsberg</i>	
A Sparse Representation Approach to Face Matching across Plastic Surgery	104
<i>G. Aggarwal, S. Biswas, P. Flynn, K. Bowyer</i>	
A Complementary Local Feature Descriptor for Face Identification	111
<i>J. Choi, W. Schwartz, H. Guo, L. Davis</i>	
Predicting Human Gaze using Quaternion DCT Image Signature Saliency and Face Detection	119
<i>B. Schauerte, R. Stiefelhagen</i>	
Predicting Good, Bad and Ugly Match Pairs	127
<i>G. Aggarwal, S. Biswas, P. Flynn, K. Bowyer</i>	
A Blob Representation for Tracking Robust to Merging and Fragmentation.....	135
<i>V. Sharma</i>	
Secure Remote Matching with Privacy: Scrambled Support Vector Vaulted Verification (S^2V^3)	143
<i>M. Wilber, T. Boult</i>	
Measuring Face Familiarity and Its Application to Face Recognition	151
<i>C. Zhan, W. Li, P. Ogunbona</i>	
Image Congealing via Efficient Feature Selection.....	158
<i>Y. Xue, X. Liu</i>	
For Your Eyes Only.....	166
<i>B. Heflin, W. Scheirer, T.E. Boult</i>	
Unconstrained Periodic Biometric Acquisition and Recognition Using COTS PTZ Camera for Uncooperative and Non-Cooperative Subjects	174
<i>F. Juefei-Xu, M. Savvides</i>	
New Hope for Recognizing Twins by Using Facial Motion	182
<i>L. Zhang, N. Ye, E. Marroquin, D. Guo, T. Sim</i>	
A Nonintrusive System for Behavioral Analysis of Children using Multiple RGB+Depth Sensors	188
<i>N. Walczak, J. Fasching, W. Toczyński, R. Sivalingam, N. Bird, K. Cullen, V. Morellas, B. Murphy, G. Sapiro, N. Papanikolopoulos</i>	

Image Alignment for Multiple Camera High Dynamic Range Microscopy	194
<i>B. Eastwood, E. Childs</i>	
Automatic Identification of Frankfurt Plane and Mid-Sagittal Plane of Skull	202
<i>Y. Cheng, W. Leow, T. Lim</i>	
Multimodal Ranking for Non-Compliance Detection in Retail Surveillance	208
<i>H. Trinh, S. Pankanti, Q. Fan</i>	
Group Context Learning for Event Recognition	214
<i>Y. Zhang, W. Ge, M.C. Chang, X. Liu</i>	
A Systems Level Approach to Perimeter Protection	221
<i>P. Tu, T. Yu, D. Gao, R. Nevatia, S. Lee, H. Kim, P. Rhee, J.H. Baek</i>	
Indian Classical Dance Classification by Learning Dance Pose Bases	227
<i>S. Samanta, P. Purkait, B. Chanda</i>	
Accurate Efficient Mosaicking for Wide Area Aerial Surveillance	233
<i>J. Prokaj, G. Medioni</i>	
Simultaneous Inference of Activity, Pose and Object	241
<i>F. Khan, V. Singh, R. Nevatia</i>	
Enhanced Rail Component Detection and Consolidation for Rail Track Inspection	249
<i>H. Trinh, N. Haas, Y. Li, C. Otto, S. Pankanti</i>	
LOST: Longterm Observation of Scenes (with Tracks)	256
<i>A. Abrams, J. Tucek, J. Little, N. Jacobs, R. Pless</i>	
Estimating the Spatial Extents of Geospatial Objects Using Hierarchical Models	264
<i>Y. Yang, S. Newsam</i>	
Robust Detection, Classification and Positioning of Traffic Signs from Street-Level Panoramic Images for Inventory Purposes	272
<i>L. Hazelhoff, I. Creusen, P. With</i>	
Reconfigurable Templates for Robust Vehicle Detection and Classification	280
<i>Y. Lv, B. Yao, Y. Wang, S.C. Zhu</i>	
Classification of Plant Structures from Uncalibrated Image Sequences	288
<i>D. Dey, L. Mummert, R. Sukthankar</i>	
Measurement of Bitumen Coverage of Stones for Road Building, Based on Digital Image Analysis	296
<i>H. Kallen, A. Heyden, K. Astrom, P. Lindh</i>	
Dynamic and Invisible Messaging for Visual MIMO	304
<i>W. Yuan, K. Dana, A. Ashok, M. Gruteser, N. Mandayam</i>	
A Modular System Architecture for Online Parallel Vision Pipelines	312
<i>J. Papon, A. Abramov, E. Aksoy, F. Worgotter</i>	
Tools for Richer Crowd Source Image Annotations	320
<i>J. Little, A. Abrams, R. Pless</i>	
Point-less Calibration: Camera Parameters from Gradient-Based Alignment to Edge Images	326
<i>P. Carr, Y. Sheikh, I. Matthews</i>	
Color Balancing for Change Detection in Multitemporal Images	334
<i>J. Thomas, K. Bowyer, A. Karenm</i>	
Batch Mode Active Learning For Multi-Label Image Classification With Informative Label Correlation Mining	340
<i>B. Zhang, Y. Wang, W. Wang</i>	
Learning and Recognizing Complex Multi-Agent Activities with Applications to American Football Plays	347
<i>E. Smeers, A. Hoogs</i>	
Non-Parametric Motion-Priors for Flow Understanding	355
<i>V. Lasdas, R. Timofte, L. Gool</i>	
Online Discriminative Object Tracking with Local Sparse Representation	363
<i>Q. Wang, F. Chen, W. Xu, M.H. Yang</i>	
Kernel Analysis over Riemannian Manifolds for Visual Recognition of Actions, Pedestrians and Textures	371
<i>M. Harandi, C. Sanderson, A. Willem, B. Lovell</i>	
Improving Evolution-COnstructed Features Using Speciation for General Object Detection	378
<i>K. Lillywhite, D.J. Lee, B. Tippett</i>	
Learning Reconfigurable Scene Representation by Tangram Model	384
<i>J. Zhu, T. Wu, S.C. Zhu, X. Yang, W. Zhang</i>	
Depth-supported Real-time Video Segmentation with the Kinect	392
<i>A. Abramov, K. Pauwels, J. Papon, F. Worgotter, B. Dellen</i>	
Appearance-based Face Recognition Using A Supervised Manifold Learning Framework	400
<i>B. Raducanu, F. Dornaika</i>	

Fast Planar Object Detection and Tracking via Edgel Templates.....	406
<i>T. Lee, S. Soatto</i>	
Multiple-Instance Learning from Multiple Perspectives: Combining Models for Multiple-Instance Learning	414
<i>B. Zhang, Y. Wang, W. Wang</i>	
Apparel Silhouette Attributes Recognition.....	421
<i>W. Zhang, E. Antunez, S. Gokturk, B. Sumengen</i>	
Real Time Moving Vehicle Detection and Reconstruction for Improving Classification	429
<i>T. Wang, Z. Zhu</i>	
CompactKdt: Compact Signatures for Accurate Large Scale Object Recognition.....	435
<i>M. Aly, M. Munich, P. Perona</i>	
Author Index	