

2013 IEEE Workshop on Applications of Computer Vision (WACV 2013)

**Clearwater Beach, Florida, USA
15 – 17 January 2013**



**IEEE Catalog Number: CFP13082-PRT
ISBN: 978-1-4673-5053-2**

WACV Table of Contents

3D Free Form Object Recognition using Rotational Projection Statistics

Yulan Guo, Mohammed Bennamoun, Ferdous Sohel, Jianwei Wan, Min Lu

Are You Using the Right Approximate Nearest Neighbor Algorithm?

Stephen O'Hara, Bruce Draper

Large-scale Web Video Event Classification by use of Fisher Vectors

Chen Sun, Ram Nevatia

Nonuniform Image Patch Exemplars for Low Level Vision

Vincent De Smet, Vinay Namboodiri, Luc Van Gool

Towards a Practical PTZ Face Detection and Tracking System

Yinghao Cai, Gérard Medioni, Thang Dinh

Image segmentation for large-scale subcategory flower recognition

Anelia Angelova, Shenghuo Zhu, Yuanqing Lin

Heteroscedastic Probabilistic Linear Discriminant Analysis for Manifold Learning in Video-Based Face Recognition

Moh Edi Wibowo, Dian Tjondronegoro, Ligang Zhang, Ivan Himawan

Berkeley MHAD: A Comprehensive Multimodal Human Action Database

Ferda Ofli, Rizwan Chaudhry, Gregorij Kurillo, René Vidal, Ruzena Bajcsy

Human Behavior Segmentation and Recognition using Continuous Linear Dynamic System

Jinjun Wang, Jing Xiao

Statistical Angular Error-Based Triangulation for Efficient and Accurate Multi-View Scene Reconstruction

Shawn Recker, Mauricio Hess-Flores, Kenneth Joy

Automatic Region-of-Interest Detection and Prioritisation for Visually Optimised Coding of Low Bit Rate Videos

Ivan Himawan, Wei Song, Dian Tjondronegoro

Clustering of video-patches on Grassmannian manifold for facial expression recognition from 3D videos

Munawar Hayat, Mohammed Bennamoun, Amar El-Sallam

Automatic Identification of Exudates in Retinal Images

Flávio Araújo, André Santana, Rodrigo Veras, Romuere Silva, Kelson Aires

Classification of Human Epithelial Type 2 Cell Indirect Immunofluorescence Images via Codebook Based Descriptors

Arnold Wiliem, Yongkang Wong, Conrad Sanderson, Peter Hobson, Shaokang Chen, Brian Lovell

Spatio-Temporal Covariance Descriptors for Action and Gesture Recognition

Andres Sanin, Conrad Sanderson, Mehrtash Harandi, Brian Lovell

Relational Divergence Based Classification on Riemannian Manifolds

Azadeh Alavi, Mehrtash Harandi, Conrad Sanderson

Relative Ranking of Facial Attractiveness

Hani Altwaijry, Serge Belongie

Robust classification system with reliability prediction for semi-automatic traffic-sign inventory systems

Lykele Hazelhoff, Ivo Creusen, Peter de With

A Relational Kernel-based Approach to Scene Classification

Laura Antanas, McElory Hoffmann, Paolo Frasconi, Tinne Tuytelaars

Scene Image Categorization and Video Event Detection using Naive Bayes Nearest Neighbor

Shiv Vitaladevuni,, Pradeep Natarajan, Shuang Wu, Xiaodan Zhuang, Rohit Prasad, Premkumar Natarajan

Accurate Motion Deblurring using Camera Motion Tracking and Scene Depth

Hyeoungho Bae, Charless Fowlkes, Pai Chou

DIRSAC: A Directed Sampling And Consensus Approach to Quasi-Degenerate Data Fitting

Chris Baker, William Hoff

Automatic Scallop Detection in Benthic Environments

Matthew Dawkins, Charles Stewart, Scott Gallager, Amber York

What is the Space of Spectral Sensitivity Functions for Digital Color Cameras?

Jun Jiang, Dengyu Liu, Jinwei Gu, Sabine Süsstrunk

Robust Rank-4 Affine Factorization for Structure from Motion

Guanghui Wang, John Zelek, Q. M. Jonathan Wu, Ruzena Bajcsy

Using Kinect for Face Recognition Under Varying Poses, Expressions, Illumination and Disguise

Billy Li, Ajmal Mian, Wanquan Liu, Aneesh Krishna

Expanding gait identification methods from straight to curved trajectories

Yumi Iwashita, Ryo Kurazume, Koichi Ogawara

Wildfire Smoke Detection Using SpatioTemporal Bag-of-Features of Smoke

JunOh Park, ByoungChul Ko, Jae-Yeal Nam, SooYeong Kwak

Animal Recognition in the Mojave Desert: Vision Tools for Field Biologists

Michael Wilber, Walter Scheirer, Phil Leitner, Brian Heflin, James Zott, Daniel Reinke, David Delaney, Terrance Boulton

Webcam2Satellite: Estimating Cloud Maps from Webcam Imagery

Calvin Murdock, Nathan Jacobs, Robert Pless

A low cost 3D markerless system for the reconstruction of athletic techniques

A. El-Sallam, M. Bennamoun, F. Sohel, J. Alderson, A. Lyttle, M. Rossi

HotSpotter - Patterned Species Instance Recognition

Jonathan Crall, Charles Stewart, Tanya Berger-Wolf, Daniel Rubenstein, Siva Sundaresan

Reconstructing a Fragmented Face from a Cryptographic Identification Protocol

Andy Luong, Michael Gerbush, Brent Waters, Kristen Grauman

Periocular Biometric Recognition using Image Sets

Muhammad Uzair, Arif Mahmood, Ajmal Mian, Chris McDonald

An Experimental Study of Pupil Constriction for Liveness Detection

Xinyu Huang, Changpeng Ti, Qi-zhen Hou, Alade Tokuta, Ruigang Wang

Automatic Content-Based Temporal Alignment of Image Sequences with Varying Spatio-Temporal Resolution

Samuel Ogden, Bryan Morse

Ridge Regression based Classifiers for Large Scale Class Imbalanced Datasets

Devansh Arpit, Shuang Wu, Pradeep Natarajan, Rohit Prasad, Premkumar Natarajan

A Lip Extraction Algorithm Using Region-based ACM With Automatic Contour Initialization

Chao Sui, Mohammed Bennamoun, Roberto Togneri, Serajul Haque

Person Re-identification using Semantic Color Names and RankBoost

Cheng-Hao Kuo, Sameh Khamis, Vinay Shet

OpenVL: A Task-Based Abstraction for Developer-Friendly Computer Vision

Gregor Miller, Sidney Fels

Image Quality Quantification for Fingerprints Using Quality-Impairment Assessment

Anurag Awasthi, Krithika Venkataramani, Avani Nandini

Shape and Image Retrieval by Organizing Instances Using Population Cues

Andrew Temlyakov, Pahal Dalal, Jarrell Waggoner, Dhaval Salvi, Song Wang

"RegionCut" - Interactive Multi-Label Segmentation Utilizing Cellular Automaton

Oliver Arndt, Björn Scheuermann, Bodo Rosenhahn

A High Resolution 3D Tire and Footprint Impression Acquisition for Forensics Applications

Ruwan Gamage, Abhishek Joshi, Jiang Zheng, Mihran Tuceryan

Domain Adaptive Object Detection

Fatemeh Mirrashed, Vlad Morariu, Behjat Siddiquie, Rogerio Feris, Larry Davis

A Weakly Supervised Approach for Object Detection Based on Soft-Label Boosting

Weihong Wang, Yang Wang, Fang Cheng, Arcot Sowmya

Video Event Recognition Using Concept Attributes

Jingen Liu, Qian Yu, Omar Javed, Saad Ali, Amir Tamrakar, Ajay Divakaran, Hui Cheng, Harpreet Sawhney

Single View Pose Estimation of Mobile Devices in Urban Environments

Aaron Hallquist, Avidah Zakhor

A Full-Spherical Device for Simultaneous Geometry and Reflectance Acquisition

Johannes Köhler, Tobias Nöll, Gerd Reis, Didier Stricker

- Depth SEEDS: Recovering Incomplete Depth Data using Superpixels** 369
Michael Van den Bergh, Daniel Carton, Luc Van Gool
- Unwrapping the Eye for Visible-Spectrum Gaze Tracking on Wearable Devices** 369
Bernardo Pires, Michäel Devyver, Akihiro Tsukada, Takeo Kanade
- Semantic Tie Points** 377
Javier Montoya-Zegarra, Christian Leistner, Konrad Schindler
- Multi-Pose Multi-Target Tracking for Activity Understanding** 385
Hamid Izadinia, Varun Ramakrishna, Kris Kitani, Daniel Huber
- Estimation of Camera Pose with Respect to Terrestrial LiDAR Data** 391
Wei Guan, Suya You, Guan Pang
- Fusing appearance and geometric constraints for estimating the epipolar geometry** 399
Miguel Lourenço, Nuno Gonçalves
- Illumination Invariant Mean-Shift Tracking** 407
Gargi Phadke, Rajbabu Velmurgan
- Image to LIDAR Matching for Geotagging in Urban Environments** 413
Bogdan Matei, Nick Vander Valk, Zhiwei Zhu, Hui Cheng
- Improving Pollen Classification with Less Training Effort** 421
Nhat Nguyen, Matina Donalson-Matasci, Min Shin
- Boosting Object Detection Performance in Crowded Surveillance Videos** 427
Rogerio Feris, Ankur Datta, Sharath Pankanti, Ming-Ting Sun
- Robust Autocalibration for a Surveillance Camera Network** 433
Jingchen Liu, Robert Collins, Yanxi Liu
- Real-time Tracking of Low-resolution Vehicles for Wide-Area Persistent Surveillance** 441
Mark Keck, Luis Galup, Chris Stauffer
- Laparoscopic Instrument Localization Using a 3-D Time-of-Flight/RGB Endoscope** 449
Sven Haase, Jakob Wasza, Thomas Kilgus, Joachim Hornegger
- Automatic curve selection for lens distortion correction using Hough transform energy** 455
Jinhai Cai, Stan Miklavcic
- Gender Classification Using 2-D Ear Images and Sparse Representation** 461
Rahman Khorsandi, Mohamed Abdel-Mottaleb
- Geometric Calibration for a Multi-Camera-Projector System** 467
Ricardo Garcia, Avideh Zakhor
- SAGE: An Approach and Implementation Empowering Quick and Reliable Quantitative Analysis of Segmentation Quality** 475
Danna Gurari, Suele Kim, Eugene Yang, Brett Isenberg, Tuan Pham, Alberto Purwada, Patricia Solski, Matthew Walker, Joyce Wong, Margrit Betke
- A Bayesian Non-parametric Viewpoint to Visual Tracking** 482

Yi Wang, Zhidong Li, Yang Wang, Fang Chen

A Graph-Based Algorithm for Multi-Target Tracking with Occlusion 489

Dhaval Salvi, Jarrell Waggoner, Andrew Temlyakov, Song Wang

The Gixel Array Descriptor (GAD) for Multi-Modal Image Matching 497

Guan Pang, Ulrich Neumann

Handwritten Text Segmentation using Average Longest Path Algorithm 505

Dhaval Salvi, Jun Zhou, Jarrell Waggoner, Song Wang

Spatial-Temporal Structural and Dynamics Features for Video Fire Detection 513

Hongcheng Wang, Alan Finn, Ozgur Erdinc, Antonio Vincitore

Whale Blow Detection in Infrared Video using Fractal Analysis as Tool for Representing Dynamic Shape Variation 520

Varun Santhaseelan, Vijayan Asari

Mass Anomaly Depth Estimation From Full Tensor Gradient Gravity Data 526

Daniel Wedge

Tracking Multiple Ants in a Colony 534

Thomas Fasciano, Hoan Nguyen, Anna Dornhaus, Min Shin