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# Computer Vision – ECCV 2012

Workshops and Demonstrations

Florence, Italy, October 7-13, 2012  
Proceedings, Part I



Springer

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# Foreword

The European Conference on Computer Vision is one of the top conferences for researchers in this field and is held biennially in alternation with the International Conference on Computer Vision. It was first held in 1990 in Antibes (France) with subsequent conferences in Santa Margherita Ligure (Italy) in 1992, Stockholm (Sweden) in 1994, Cambridge (UK) in 1996, Freiburg (Germany) in 1998, Dublin (Ireland) in 2000, Copenhagen (Denmark) in 2002, Prague (Czech Republic) in 2004, Graz (Austria) in 2006, Marseille (France) in 2008, and Heraklion (Greece) in 2010. To our great delight, the 12th conference was held in Florence, Italy.

ECCV has an established tradition of very high scientific quality and an overall duration of one week. ECCV 2012 began with a keynote lecture from the honorary chair, Tomaso Poggio. The main conference followed over four days with 40 orals, 368 posters, 22 demos, and 12 industrial exhibits. There were also 9 tutorials and 21 workshops held before and after the main event. For this event we introduced some novelties. These included innovations in the review policy, the publication of a conference booklet with all paper abstracts and the full video recording of oral presentations.

This conference is the result of a great deal of hard work by many people, who have been working enthusiastically since our first meetings in 2008. We are particularly grateful to the Program Chairs, who handled the review of about 1500 submissions and co-ordinated the efforts of over 50 area chairs and about 1000 reviewers (see details of the process in their preface to the proceedings). We are also indebted to all the other chairs who, with the support of our research teams (names listed below), diligently helped us manage all aspects of the main conference, tutorials, workshops, exhibits, demos, proceedings, and web presence. Finally we thank our generous sponsors and Consulta Umbria for handling the registration of delegates and all financial aspects associated with the conference.

We hope you enjoyed ECCV 2012. Benvenuti a Firenze!

October 2012

Roberto Cipolla  
Carlo Colombo  
Alberto Del Bimbo

# Preface

Welcome to the Workshops and Demonstrations proceedings of the 12th European Conference on Computer Vision, held during October 7–13, 2012 in Florence, Italy. We are delighted that the main ECCV 2012 was accompanied by 21 workshops and 22 demonstrations.

We received 38 workshop proposals on diverse computer vision topics. The evaluation process was not easy because of the high quality of the submissions, and the final 21 selected workshops complemented the main conference program. They were mostly one-day workshops, with a few limited to half day, and one workshop lasting one day and a half. In the end, the addressed workshop topics constituted a good mix between novel current trends and traditional issues, without forgetting to address the fundamentals of the computational vision area.

On Sunday, October 7, three workshops took place: the 5th Workshop on Non-Rigid Shape Analysis and Deformable Image Alignment (NORDIA), the First Workshop on Visual Analysis and Geo-Localization of Large-Scale Imagery, and the Workshop on Web-scale Vision and Social Media.

The majority of the workshops were held on Friday 12 and Saturday 13. On October 12 we had nine workshops: WebVision, the Workshop on Computer Vision for the Web, with only invited speakers, the traditional PASCAL Visual Object Classes Challenge 2012 (VOC2012) Workshop, the 4th International Workshop on Video Event Categorization, Tagging and Retrieval (VECTaR 2012), the First International Workshop on Re-Identification (Re-Id 2012), the Workshop on Biological and Computer Vision Interfaces, also with only invited speakers, VISART, “Where Computer Vision Meets Art” Workshop, the Second Workshop on Consumer Depth Cameras for Computer Vision (CDC4CV), the Workshop on Unsolved Problems in Optical Flow and Stereo Estimation, and the “What’s in a Face?” Workshop.

On October 13, ten workshops were held: The remaining half day of the Web-Vision Workshop, the 4th Color and Photometry in Computer Vision Workshop, the Third Workshop on Computer Vision in Vehicle Technology: From Earth to Mars, the Second Workshop on Parts and Attributes, the Third IEEE International Workshop on Analysis and Retrieval of Tracked Events and Motion in Imagery Streams (ARTEMIS 2012), the First Workshop on Action Recognition and Pose Estimation in Still Images, the Workshop on Higher-Order Models and Global Constraints in Computer Vision, the Workshop on Information Fusion in Computer Vision for Concept Recognition, the QU3ST Workshop “2.5D Sensing Technologies in Motion: The Quest for 3D”, and the Second International Workshop on Benchmarking Facial Image Analysis Technologies (BeFIT 2012).

We hope that participants enjoyed the workshops, together with the associated 179 papers included in these volumes.

Following the tradition of the major conferences in the field, ECCV 2012 was also proud to host live demonstrations given by companies and academic research groups. These were presented during the days of the main conference and are described in detail in the papers of the last volume.

Presenting a demo is one of the most concrete and exciting ways of demonstrating results of research and providing strong interaction between researchers, practitioners, and scholars in many topics, both theoretical and practical, of computer vision.

Among the proposed demos, submitted with a four-page summary together with slides, videos and rich supplementary material, after peer-review, we selected 22 demos on different subjects spanning topics such as biometry, content-based retrieval, classification and categorization, vision for computer graphics, 3D vision for interfaces, tracking and pose estimation, gesture analysis for human-computer interaction, text recognition, augmented reality, surveillance, and assisted driving.

Demos were presented by authors coming from different nations of Europe (Czech Republic, France, Germany, Italy, The Netherlands, Spain, Switzerland, and UK) and of the rest of the world (Australia, China, Japan, Taiwan, and USA).

The best demo was selected based on the scientific value and the technical presentation as well as the success in researcher interaction during the Demo Sessions.

We believe the scientific prototypes and the technical demonstrations presented at ECCV 2012 will contribute to strengthen the great success of computer vision technologies in industrial, entertainment, social, and everyday applications.

Finally, we would like to thank the individual chairs of each workshop (listed in the respective workshop programs) for soliciting and reviewing submissions, and the demo proposers, who made it possible to build such a rich supplementary program beside the main ECCV 2012 scientific plan.

October 2012

Andrea Fusiello  
Vittorio Murino  
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Marco Bertini	University of Florence, Italy
Cees G.M. Snoek	University of Amsterdam, The Netherlands

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Samy Bengio	Google, USA

### The PASCAL Visual Object Classes Challenge 2012 (VOC2012) Workshop

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John Winn	MSR Cambridge, UK
Luc Van Gool	ETH Zurich, Switzerland
Andrew Zisserman	University of Oxford, UK
Alex Berg	Stony Brook University, USA
Fei-Fei Li	University of Stanford, USA

### 4th International Workshop on Video Event Categorization, Tagging and Retrieval (VECTaR 2012)

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Thomas S. Huang	University of Illinois at Urbana-Champaign, USA
Ling Shao	University of Sheffield, UK
Jianguo Zhang	University of Dundee, UK
Liang Wang	Chinese Academy of Sciences, China

**First International Workshop on Re-Identification (Re-Id 2012)**

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**Workshop on Biological and Computer Vision Interfaces**

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**VISART: “Where Computer Vision Meets Art” Workshop**

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Gustavo Carneiro	University of Adelaide, Australia
Nuno Pinho da Silva	IST Lisbon, Portugal
Alessio Del Bue	Istituto Italiano di Tecnologia, Italy

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### **Third Workshop on Computer Vision in Vehicle Technology: From Earth to Mars**

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### **Second Workshop on Parts and Attributes**

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### **Third IEEE International Workshop on Analysis and Retrieval of Tracked Events and Motion in Imagery Streams (ARTEMIS 2012)**

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### **First Workshop on Action Recognition and Pose Estimation in Still Images**

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Tomas Piatrik	Queen Mary University London, UK
Bogdan Ionescu	LAPI, University Politehnica of Bucharest, Romania

**QU3ST Workshop - 2.5D Sensing Technologies in Motion: The Quest for 3D**

David Fofi

Université de Bourgogne, France

Adrien Bartoli

Université d'Auvergne, France

**Second International Workshop on Benchmarking Facial Image Analysis Technologies (BeFIT 2012)**

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# Table of Contents

## 5th Workshop on Non-Rigid Shape Analysis and Deformable Image Alignment (NORDIA)

Putting the Pieces Together: Regularized Multi-part Shape Matching ... <i>Or Litany, Alexander M. Bronstein, and Michael M. Bronstein</i>	1
Combined Motion Estimation and Reconstruction in Tomography ..... <i>Geert Van Eyndhoven, Jan Sijbers, and Joost Batenburg</i>	12
3D Object Classification Using Scale Invariant Heat Kernels with Collaborative Classification ..... <i>Mostafa Abdelrahman, Moumen El-Melegy, and Aly Farag</i>	22
3D Facial Landmark Localization Using Combinatorial Search and Shape Regression ..... <i>Federico M. Sukno, John L. Waddington, and Paul F. Whelan</i>	32
Statistical Shape Analysis for Population Studies via Level-Set Based Shape Morphing ..... <i>Tammy Riklin Raviv, Yi Gao, James J. Levitt, and Sylvain Bouix</i>	42
Group-Valued Regularization for Analysis of Articulated Motion ..... <i>Guy Rosman, Alex M. Bronstein, Michael M. Bronstein, Xue-Cheng Tai, and Ron Kimmel</i>	52
Drawing an Automatic Sketch of Deformable Objects Using Only a Few Images ..... <i>Smit Marvaniya, Sreyasee Bhattacharjee, Venkatesh Manickavasagam, and Anurag Mittal</i>	63
Superfaces: A Super-Resolution Model for 3D Faces ..... <i>Stefano Berretti, Alberto Del Bimbo, and Pietro Pala</i>	73
Stable Spectral Mesh Filtering ..... <i>Artiom Kohnatsky, Michael M. Bronstein, and Alexander M. Bronstein</i>	83
Analytical Dynamic Programming Matching ..... <i>Seiichi Uchida, Satoshi Hokahori, and Yaokai Feng</i>	92
Correspondences of Persistent Feature Points on Near-Isometric Surfaces ..... <i>Ying Yang, David Günther, Stefanie Wuhrer, Alan Brunton, Ioannis Ivrissimtzis, Hans-Peter Seidel, and Tino Weinkauff</i>	102

3D Reconstruction of Non-Rigid Surfaces in Real-Time Using Wedge Elements . . . . .	113
<i>Antonio Agudo, Begoña Calvo, and J.M.M. Montiel</i>	
Schrödinger Diffusion for Shape Analysis with Texture . . . . .	123
<i>Jose A. Iglesias and Ron Kimmel</i>	
Anchored Deformable Face Ensemble Alignment . . . . .	133
<i>Xin Cheng, Sridha Sridharan, Jason Saraghi, and Simon Lucey</i>	
Multiple Object Tracking via Prediction and Filtering with a Sobolev-Type Metric on Curves . . . . .	143
<i>Eleonora Bardelli, Maria Colombo, Andrea Mennucci, and Anthony Yezzi</i>	
Facial Model Fitting Based on Perturbation Learning and It's Evaluation on Challenging Real-World Diversities Images . . . . .	153
<i>Koichi Kinoshita, Yoshinori Konishi, Masato Kawade, and Hiroshi Murase</i>	

## **First Workshop on Visual Analysis and Geo-localization of Large-Scale Imagery**

Adaptive Rendering for Large-Scale Skyline Characterization and Matching . . . . .	163
<i>Jiejie Zhu, Mayank Bansal, Nick Vander Valk, and Hui Cheng</i>	
Ultra-wide Baseline Facade Matching for Geo-localization . . . . .	175
<i>Mayank Bansal, Kostas Daniilidis, and Harpreet Sawhney</i>	
A Memory Efficient Discriminative Approach for Location Aided Recognition . . . . .	187
<i>Varsha Hedau, Sudipta N. Sinha, C. Lawrence Zitnick, and Richard Szeliski</i>	

## **Web-Scale Vision and Social Media**

Weakly Supervised Learning of Object Segmentations from Web-Scale Video . . . . .	198
<i>Glenn Hartmann, Matthias Grundmann, Judy Hoffman, David Tsai, Vivek Kwatra, Omid Madani, Sudheendra Vijayanarasimhan, Irfan Essa, James Rehg, and Rahul Sukthankar</i>	
Classifier Ensemble Recommendation . . . . .	209
<i>Pyry Matikainen, Rahul Sukthankar, and Martial Hebert</i>	

Towards Exhaustive Pairwise Matching in Large Image Collections . . . . .	219
<i>Kumar Srijan and C.V. Jawahar</i>	
Large Vocabularies for Keypoint-Based Representation and Matching of Image Patches . . . . .	229
<i>Andrzej Śluzek</i>	
Linearized Smooth Additive Classifiers . . . . .	239
<i>Subhransu Maji</i>	
Ask'nSeek: A New Game for Object Detection and Labeling . . . . .	249
<i>Axel Carlier, Oge Marques, and Vincent Charvillat</i>	
Learning to Match Images in Large-Scale Collections . . . . .	259
<i>Song Cao and Noah Snavely</i>	
Efficient Mining of Repetitions in Large-Scale TV Streams with Product Quantization Hashing . . . . .	271
<i>Jiangbo Yuan, Guillaume Gravier, Sébastien Campion, Xiuwen Liu, and Hervé Jégou</i>	
An Efficient Parallel Strategy for Matching Visual Self-similarities in Large Image Databases . . . . .	281
<i>Katharina Schwarz, Tobias Häußler, and Hendrik P.A. Lensch</i>	

#### **4th International Workshop on Video Event Categorization, Tagging and Retrieval (VECTaR 2012)**

Atomic Action Features: A New Feature for Action Recognition . . . . .	291
<i>Qiang Zhou and Gang Wang</i>	
Spatio-temporal SIFT and Its Application to Human Action Classification . . . . .	301
<i>Manal Al Ghamdi, Lei Zhang, and Yoshihiko Gotoh</i>	
Statistics of Pairwise Co-occurring Local Spatio-temporal Features for Human Action Recognition . . . . .	311
<i>Piotr Bilinski and Francois Bremond</i>	
Visual Code-Sentences: A New Video Representation Based on Image Descriptor Sequences . . . . .	321
<i>Yusuke Mitarai and Masakazu Matsugu</i>	
Action Recognition Robust to Background Clutter by Using Stereo Vision . . . . .	332
<i>Jordi Sanchez-Riera, Jan Čech, and Radu Horaud</i>	



Recognizing Actions across Cameras by Exploring the Correlated Subspace .....	342
<i>Chun-Hao Huang, Yi-Ren Yeh, and Yu-Chiang Frank Wang</i>	
Chinese Shadow Puppetry with an Interactive Interface Using the Kinect Sensor .....	352
<i>Hui Zhang, Yuhao Song, Zhuo Chen, Ji Cai, and Ke Lu</i>	
Group Dynamics and Multimodal Interaction Modeling Using a Smart Digital Signage .....	362
<i>Tony Tung, Randy Gomez, Tatsuya Kawahara, and Takashi Matsuyama</i>	
Automated Textual Descriptions for a Wide Range of Video Events with 48 Human Actions .....	372
<i>Patrick Hanckmann, Klamer Schutte, and Gertjan J. Burghouts</i>	

## **First International Workshop on Re-identification (Re-Id 2012)**

Learning Implicit Transfer for Person Re-identification .....	381
<i>Tamar Avraham, Ilya Gurchich, Michael Lindenbaum, and Shaul Markovitch</i>	
Person Re-identification: What Features Are Important? .....	391
<i>Chunxiao Liu, Shaogang Gong, Chen Change Loy, and Xinggang Lin</i>	
Towards Person Identification and Re-identification with Attributes ....	402
<i>Ryan Layne, Timothy M. Hospedales, and Shaogang Gong</i>	
Local Descriptors Encoded by Fisher Vectors for Person Re-identification .....	413
<i>Bingpeng Ma, Yu Su, and Frédéric Jurie</i>	
Re-identification of Pedestrians in Crowds Using Dynamic Time Warping .....	423
<i>Damien Simonnet, Michal Lewandowski, Sergio A. Velastin, James Orwell, and Esin Turkbeyler</i>	
Re-identification with RGB-D Sensors .....	433
<i>Igor Barros Barbosa, Marco Cristani, Alessio Del Bue, Loris Bazzani, and Vittorio Murino</i>	
Identity Inference: Generalizing Person Re-identification Scenarios .....	443
<i>Svebor Karaman and Andrew D. Bagdanov</i>	
A General Method for Appearance-Based People Search Based on Textual Queries .....	453
<i>Riccardo Satta, Giorgio Fumera, and Fabio Roli</i>	

## Biological and Computer Vision Interfaces (BCVI)

Lessons from the Primate Visual System . . . . .	462
<i>Guy A. Orban</i>	
Neural Mechanisms for Form and Motion Detection and Integration: Biology Meets Machine Vision . . . . .	468
<i>Heiko Neumann and Florian Raudies</i>	
Neural Fields Models of Visual Areas: Principles, Successes, and Caveats . . . . .	474
<i>Olivier Faugeras</i>	
Visual Cortex as a General-Purpose Information-Processing Device . . . . .	480
<i>James A. Bednar</i>	
Reading Out the Synaptic Echoes of Low-Level Perception in V1 . . . . .	486
<i>Yves Frégnac</i>	
Learning Invariant Feature Hierarchies . . . . .	496
<i>Yann LeCun</i>	
Fun with Asynchronous Vision Sensors and Processing . . . . .	506
<i>Tobi Delbruck</i>	
Spike-Based Image Processing: Can We Reproduce Biological Vision in Hardware? . . . . .	516
<i>Simon J. Thorpe</i>	

## Where Computer Vision Meets Art (VISART)

PHOG-Derived Aesthetic Measures Applied to Color Photographs of Artworks, Natural Scenes and Objects . . . . .	522
<i>Christoph Redies, Seyed Ali Amirshahi, Michael Koch, and Joachim Denzler</i>	
Wehrli 2.0: An Algorithm for “Tidying up Art” . . . . .	532
<i>Nikolai Ufer, Mohamed Souiai, and Daniel Cremers</i>	
Feature Vector Definition for a Decision Tree Based Craquelure Identification in Old Paintings . . . . .	542
<i>Joanna Gancarczyk</i>	
Computer-Aided Reclamation of Lost Art . . . . .	551
<i>Maria Lena Demetriou, Jon Yngve Hardeberg, and Gabriel Adelman</i>	
Evaluation of Digital Inpainting Quality in the Context of Artwork Restoration . . . . .	561
<i>Alexandra Ioana Oncu, Ferdinand Deger, and Jon Yngve Hardeberg</i>	

Shaping Art with Art: Morphological Analysis for Investigating Artistic Reproductions . . . . .	571
<i>Juan Antonio Monroy Kuhn, Peter Bell, and Björn Ommer</i>	
Artificial Mosaics with Irregular Tiles Based on Gradient Vector Flow . . . . .	581
<i>Sebastiano Battiato, Alfredo Milone, and Giovanni Puglisi</i>	
Identification of Illustrators . . . . .	589
<i>Fadime Sener, Nermin Samet, and Pinar Duygulu Sahin</i>	
 <b>Second Workshop on Consumer Depth Cameras for Computer Vision (CDC4CV)</b>	
Locally Consistent ToF and Stereo Data Fusion . . . . .	598
<i>Carlo Dal Mutto, Pietro Zanuttigh, Stefano Mattoccia, and Guido Cortelazzo</i>	
<b>Author Index . . . . .</b>	<b>609</b>