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Pattern Recognition

33rd DAGM Symposium
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Proceedings

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Preface

Welcome to the proceedings of DAGM 2011, which was held in Frankfurt am Main, an international financial hub within Germany with a vibrant cultural and historical tradition. The Johann Wolfgang Goethe University was founded by the wealthy citizenship of Frankfurt in the early twentieth century. The university, which currently has about 39,000 students, is today best known for its law school, the department of economics, its medical school, but also for a rich spectrum of life sciences and nature sciences. Research activity in visual pattern recognition received a significant boost in Frankfurt through the formation of a Bernstein Focus Neurotechnology (BFNT) research cluster emphasizing “vision in man and machine” through BMBF funding within the Bernstein network for computational neuroscience. The research program brings together an interdisciplinary team of computer scientists, neuroscientists, psychologists, machine learning and systems engineering experts to build an integrative framework for computer vision systems.

This year, for the first time, the annual symposia of the German Pattern Recognition Association (DAGM) and the German Classification Society (GfKI) were held in conjunction. This offered a forum for scientific exchange and contact between researchers in the two fields. We hope this provided a stimulating experience for each participant in the joint conference.

The technical program of DAGM 2011 was a joint endeavor between the VSI group of Goethe University and the Computer Vision Laboratory at Linköpings Universitet and was supported through a grant from the Swedish ELLIIT excellence initiative. The technical program covered all aspects of pattern recognition such as early vision to machine learning and robot vision. The present proceedings are the result of a multi-step process of paper solicitation, double-blind review, and careful selection. The DAGM 2011 call for papers resulted in 98 submissions from authors in more than 24 countries. Each paper was subjected to a rigorous double-blind review process and assessed by at least three Program Committee members. Subsequently, a moderated per-paper discussion among the reviewers led to a rating profile and a recommendation that summarized the views of the reviewers. During a Program Committee meeting held in Frankfurt in May 2011, the rating profiles, reviews, the discussion results and, where necessary, additional review reports were evaluated. On this basis, the Program Committee selected a total of 42 papers, corresponding to an acceptance rate of below 43%. The Program Chairs assigned 20 papers for oral and 22 papers for poster presentation, and grouped the papers into sessions. All accepted papers are compiled in the present proceedings. We express our appreciation and thanks to all the members of the Program Committee as well as the external reviewers for their valuable service to the community. We would also like to express

our thanks to all authors who submitted papers, for it is the vivid response of authors to a conference call that makes a strong program possible.

We were proud to be able to present two invited talks from internationally renowned scientists:

- Donald Geman: “Image Interpretation by Entropy Pursuit”
- Yann LeCun: “Learning Visual Feature Hierarchies”

These talks were complemented by a number of keynote talks invited by the GfKI. Furthermore, four tutorials held by recognized experts were arranged:

- Tensors in Computer Vision and Image Processing, by Klas Nordberg
- Random Field Models for Natural Image and Scene Statistics, by Stefan Roth
- Higher-Order Feature Learning: Building a Computer Vision “Swiss Army Knife,” by Roland Memisevic
- Convex Optimization for Computer Vision, by Thomas Pock and Daniel Cremers

Meanwhile, it is almost a tradition to have a Young Researchers’ Forum at DAGM, where a carefully jury-selected ensemble of young researchers presented their Master thesis work during the conference. This appreciation of theirs hopefully acts as an incentive for further noticeable scientific contributions.

For the first time, an “Adverse Vision Conditions Challenge” was initiated as a satellite event to a DAGM conference, addressing the important area of implementing computer vision on real-life video material which suffers from different strong degradations of image quality. The submitted contributions had to comply with the same selection procedure as for the rest of the DAGM papers, and four papers were selected for a particular AVCC poster session.

The technical program was complemented by a workshop on New Challenges in Neural Computation (NC²), which was organized by Barbara Hammer and Thomas Villmann on behalf of the GI-Arbeitskreis Neuronale Netze and the German Neural Networks Society.

We would like to express our gratitude to all the kind people who contributed to making DAGM 2011 in Frankfurt a success. This refers in particular to the members of the Visual Sensorics and Information Processing Lab at Goethe University, and to the members of the Computer Vision Laboratory of Linköpings Universitet, Sweden. We are indebted to Holger Friedrich, Christian Conrad and David Dederscheck for their help with all local organizational matters, for Web support and technical assistance, to the indefatigable Liam Ellis at Linköpings Universitet for operating the Conference Management Tool (CMT) and author communication during the review phase and while assembling the proceedings, to Florian Meyer (Marburg University) for setting up the registration system, to Kerstin Werschnik, Nicole Stender (Frankfurt) and Birgit Strassheim (Marburg)

for back-office work concerning communication, social events, and accommodation issues, and finally our students and PhD students for a virtually uncountable set of small and larger jobs along the way. Finally, we thank our sponsors, and appreciate the initiative of Microsoft to provide the CMT conference management system to the scientific community for free.

It was an honor for us to host the 33rd Annual Symposium of DAGM in Frankfurt am Main in 2011, and we look forward to DAGM 2012 in Graz.

August 2011

Rudolf Mester
Michael Felsberg

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Awards 2010

Olympus Award

The Olympus Award 2010 was given to:

Stefan Roth

for his outstanding work in statistical approaches to image modeling, motion estimation, human tracking, and object recognition.

DAGM Prizes

The main prize for DAGM 2010 was awarded to:

Sven Grewenig, Joachim Weickert, and Andrés Bruhn:
“From Box Filtering to Fast Explicit Diffusion”

Further DAGM prizes for 2010 were awarded to:

Alexander Barth, Jan Siegemund, Annemarie Meißner, Uwe Franke, and Wolfgang Förstner:
“Probabilistic Multi-class Scene Flow Segmentation for Traffic Scenes”

Fuxin Li, Catalin Ionescu, and Cristian Sminchisescu:
“Random Fourier Approximations for Skewed Multiplicative Histogram Kernels”

Julia E. Vogt and Volker Roth:
“The Group-Lasso: $l_{1,\infty}$ Regularization versus $l_{1,2}$ Regularization”

Table of Contents

Poster Session 1

A Bayesian Approach for Scene Interpretation with Integrated Hierarchical Structure	1
<i>Martin Drauschke and Wolfgang Förstner</i>	
Multi-view Active Appearance Models for the X-Ray Based Analysis of Avian Bipedal Locomotion	11
<i>Daniel Haase, John A. Nyakatura, and Joachim Denzler</i>	
A Fully Implicit Framework for Sobolev Active Contours and Surfaces	21
<i>Maximilian Baust and Nassir Navab</i>	
Implicit Scene Context for Object Segmentation and Classification	31
<i>Jan D. Wegner, Bodo Rosenhahn, and Uwe Soergel</i>	
An Estimation Theoretical Approach to Ambrosio-Tortorelli Image Segmentation	41
<i>Kai Krajsek, Ines Dedovic, and Hanno Scharf</i>	
Combined Head Localization and Head Pose Estimation for Video-Based Advanced Driver Assistance Systems	51
<i>Andreas Schulz, Naser Damer, Mika Fischer, and Rainer Stiefelhagen</i>	
Towards Cross-Modal Comparison of Human Motion Data	61
<i>Thomas Helten, Meinard Müller, Jochen Tautges, Andreas Weber, and Hans-Peter Seidel</i>	
Indoor Calibration Using Segment Chains	71
<i>Jamil Draréni, Renaud Keriven, and Renaud Marlet</i>	
Multilinear Model Estimation with L^2 -Regularization	81
<i>Frank R. Schmidt, Hanno Ackermann, and Bodo Rosenhahn</i>	
Optimization of Quadrature Filters Based on the Numerical Integration of Improper Integrals	91
<i>Andreas Krebs, Johan Wiklund, and Michael Felsberg</i>	
Real Time Head Pose Estimation from Consumer Depth Cameras	101
<i>Gabriele Fanelli, Thibaut Weise, Juergen Gall, and Luc Van Gool</i>	

Putting MAP Back on the Map	111
<i>Patrick Pletscher, Sebastian Nowozin, Pushmeet Kohli, and Carsten Rother</i>	

Pose-Consistent 3D Shape Segmentation Based on a Quantum Mechanical Feature Descriptor	122
<i>Mathieu Aubry, Ulrich Schlickewei, and Daniel Cremers</i>	

Object Recognition

Multiple Instance Boosting for Face Recognition in Videos	132
<i>Paul Wohlhart, Martin Köstinger, Peter M. Roth, and Horst Bischof</i>	

SHOG - Spherical HOG Descriptors for Rotation Invariant 3D Object Detection	142
<i>Henrik Skibbe, Marco Reisert, and Hans Burkhardt</i>	

Pick Your Neighborhood – Improving Labels and Neighborhood Structure for Label Propagation	152
<i>Sandra Ebert, Mario Fritz, and Bernt Schiele</i>	

Poster Session 2

People Tracking Algorithm for Human Height Mounted Cameras	163
<i>Vladimir Kononov, Vadim Konushin, and Anton Konushin</i>	

Multi-person Localization and Track Assignment in Overlapping Camera Views	173
<i>Martijn Liem and Darius M. Gavrilă</i>	

Relaxed Exponential Kernels for Unsupervised Learning	184
<i>Karim Abou-Moustafa, Mohak Shah, Fernando De La Torre, and Frank Ferrie</i>	

Using Landmarks as a Deformation Prior for Hybrid Image Registration	196
<i>Marcel Lüthi, Christoph Jud, and Thomas Vetter</i>	

Improving Denoising Algorithms via a Multi-scale Meta-procedure	206
<i>Harold Christopher Burger and Stefan Harmeling</i>	

Adverse Vision Conditions Challenge

Assessment of Visibility Quality in Adverse Weather and Illumination Conditions	216
<i>Andrzej Śluzek and Mariusz Paradowski</i>	

Robust Point Matching in HDRI through Estimation of Illumination Distribution	226
<i>Yan Cui, Alain Pagani, and Didier Stricker</i>	
Illumination-Robust Dense Optical Flow Using Census Signatures	236
<i>Thomas Müller, Clemens Rabe, Jens Rannacher, Uwe Franke, and Rudolf Mester</i>	
Efficient Stereo and Optical Flow with Robust Similarity Measures	246
<i>Christian Unger, Eric Wahl, and Slobodan Ilic</i>	

Shape and Matching

Shape- and Pose-Invariant Correspondences Using Probabilistic Geodesic Surface Embedding	256
<i>Aggeliki Tsoli and Michael J. Black</i>	
Dense 3D Reconstruction of Symmetric Scenes from a Single Image	266
<i>Kevin Köser, Christopher Zach, and Marc Pollefeys</i>	
Fingerprints for Machines – Characterization and Optical Identification of Grinding Imprints	276
<i>Ralf Dragon, Tobias Mörke, Bodo Rosenhahn, and Jörn Ostermann</i>	
Efficient and Robust Alignment of Unsynchronized Video Sequences	286
<i>Georgios D. Evangelidis and Christian Bauckhage</i>	

Segmentation and Early Vision

Time-Consistent Foreground Segmentation of Dynamic Content from Color and Depth Video	296
<i>Anatol Frick, Markus Franke, and Reinhard Koch</i>	
Channel Coding for Joint Colour and Depth Segmentation	306
<i>Marcus Wallenberg, Michael Felsberg, Per-Erik Forssén, and Babette Dellen</i>	
Simultaneous Interpolation and Deconvolution Model for the 3-D Reconstruction of Cell Images	316
<i>Ahmed Elhayek, Martin Welk, and Joachim Weickert</i>	
Steerable Deconvolution: Feature Detection as an Inverse Problem	326
<i>Marco Reisert and Henrik Skibbe</i>	

Robot Vision

Probabilistic Object Models for Pose Estimation in 2D Images	336
<i>Damien Teney and Justus Piater</i>	

Fusion of Audio- and Visual Cues for Real-Life Emotional Human Robot Interaction	346
<i>Ahmad Rabie and Uwe Handmann</i>	

Machine Learning

Training of Sparsely Connected MLPs	356
<i>Markus Thom, Roland Schweiger, and Günther Palm</i>	
Minimizing Calibration Time for Brain Reading	366
<i>Jan Hendrik Metzen, Su Kyoung Kim, and Elsa Andrea Kirchner</i>	
Agnostic Domain Adaptation	376
<i>Alexander Vezhnevets and Joachim M. Buhmann</i>	

Motion

Will the Pedestrian Cross? Probabilistic Path Prediction Based on Learned Motion Features	386
<i>Christoph G. Keller, Christoph Hermes, and Darius M. Gavrilă</i>	
Simultaneous Reconstruction and Tracking of Non-planar Templates . . .	396
<i>Sebastian Lieberknecht, Selim Benhimane, and Slobodan Ilic</i>	
Multi-target Tracking in Crowded Scenes	406
<i>Jie Yu, Dirk Farin, and Bernt Schiele</i>	
Efficient and Robust Shape Matching for Model Based Human Motion Capture	416
<i>Gerard Pons-Moll, Laura Leal-Taixé, Tri Truong, and Bodo Rosenhahn</i>	

Young Researcher's Forum

Image Comparison on the Base of a Combinatorial Matching Algorithm	426
<i>Benjamin Drayer</i>	
Large Displacement Optical Flow for Volumetric Image Sequences	432
<i>Benjamin Ummenhofer</i>	
Visual Motion Capturing for Kinematic Model Estimation of a Humanoid Robot	438
<i>Andre Gaschler</i>	
Object Recognition System Guided by Gaze of the User with a Wearable Eye Tracker	444
<i>Takumi Toyama</i>	

Spectral Clustering of ROIs for Object Discovery	450
<i>Paul Bodesheim</i>	
Robust Classification and Semi-supervised Object Localization with Gaussian Processes	456
<i>Alexander Lütz</i>	
Color Image Segmentation Based on an Iterative Graph Cut Algorithm Using Time-of-Flight Cameras	462
<i>Markus Franke</i>	
Application of Multi-modal Features for Terrain Classification on a Mobile System	468
<i>Marc Arends</i>	
Author Index	475