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### Contents

	Contents
1. Preface	5
2. People	8
2.1. Organizing Committee	8
2.2. Program Committee	8
2.3. Local Arrangements	9
3. Local Arrangements	10
3.1. Venue	10
3.2. Registration	11
3.3. Internet Access	11
3.4. Public Transport	11
3.5. Welcome Reception	11
3.6. Conference Dinner	11
3.7. Restaurants in Graz	12
4. Floorplans	14
4.1. Workshops and Tutorials	14
4.2. Main Conference	15
5. Program	16
5.1. Tuesday, August 28 <sup>th</sup>	16
4.1. Wednesday, August 29 <sup>th</sup>	20
4.2. Thursday, August 30 <sup>th</sup>	26
4.3. Friday, August 31 <sup>st</sup>	30
5. GCPR 2013	33
6. OAGM 2013	34

3

# 1. Preface

On behalf of the Organizing Committee, we would like to welcome you to Graz for the joint conference of the DAGM and OAGM. It is the 34th symposium of the German Association for Pattern Recognition and the 36th OAGM workshop. This is, after 1984, 1994 and 2005, already the fourth joint meeting between these two societies, showing their close relations.

The technical program covers all aspects of Computer Vision and Pattern Recognition. Our call for papers resulted in 98 submissions from institutions in 19 countries. Each paper underwent a rigorous reviewing process and was assigned to at least three Program Committee members for review. The reviewing phase was followed by a discussion phase among the respective Program Committee members in order to suggest papers for acceptance. The final decision was taken during a Program Committee meeting held in Graz based on all reviews, the discussion results and, if necessary, additional reviewing. This year we introduced a "handling reviewer" for each paper, who summarized the discussion in a consolidation report that was also submitted to the authors. On the basis of this rigorous process we selected a total of 50 papers, corresponding to an acceptance rate of 51%. Out of all accepted papers, 27 were chosen for oral and 23 for poster presentation. Out of the 50 accepted papers, 32 are from Germany, 7 from Austria, 9 from the rest of Europe and 2 from overseas. We would like to thank all members of the Program Committee as well as the external reviewers for their valuable and highly appreciated contribution to the community. We would

also like to extend our thanks to all authors of submitted papers; without their contribution we would not have been able to assemble such a strong program.

The technical program is complemented by two workshops: one on "Computer Vision in Applications" and the other on "New Challenges in Neural Computation". The program contains two tutorials: one on "Random Forests in Computer Vision" held by Christian Leistner, the other on "Submodularity in Machine Learning and Computer Vision", held by Andreas Krause and Stefanie Jegelka.

In addition to the presentations from the technical program, we are also proud to have three internationally renowned invited speakers at the conference:

- Francis Bach (INRIA): Large-Scale Convex Optimization for Machine Learning
- Jiri Matas (CTU Prague): Tracking: An Old Dog with Many New Tricks
- Antonio Torralba (MIT): Understanding Visual Scenes

We again organize the Young Researcher's Forum to promote scientific interaction between excellent your researchers and our community. This year the contributions of three students were accepted, who present their bachelor or master thesis work during the conference and interact with our community. Their participation is kindly supported by Daimler.

We would like to extend our sincere thanks to everyone who helped in making DAGM-OAGM 2012 possible. We are indebted to Renate Hönel and Karin Maier for their help with all organizational matters, and Christian Reinbacher for coordinating the local arrangements.

We would also like to thank all our sponsors for their financial support, which helped to keep the registration fees as low as possible, especially those of the student attendees. We appreciate their donations to our community, which values and recognizes the importance of these contributions to our field.

It is a honor for us to host the joint DAGM-OAGM meeting this year, and we look forward to next year's DAGM conference in Saarbrücken.

August 2012

Horst Bischof Axel Pinz Thomas Pock Franz Leberl

# 2. People

# 2.1. Organizing Committee

General Chair: Horst Bischof Program Chairs: Axel Pinz, Thomas Pock Honorary Chair: Franz Leberl



### 2.2. Program Committee

Csaba Beleznai Thomas Brox Andres Bruhn Joachim Buhmann Wilhelm Burger **Daniel Cremers** Andreas Dengel Joachim Denzler Michael Felsberg Gernot A. Fink Boris Flach Uwe Franke Peter Gehler Margrit Gelautz Michael Goesele Fred Hamprecht Matthias Hein Olaf Hellwich Vaclav Hlavac Joachim Hornegger Bernt Jähne

AIT U Freiburg U Stuttgart ETH Zurich FH Hagenberg TU Munich TU Kaiserslautern U Jena U Linköping TU Dortmund TU Praque Daimler MPG TU Vienna TU Darmstadt U Heidelberg U Saarland TU Berlin TU Prague U Erlangen U Heidelberg

#### People

Xiaovi Jiang Reinhard Koch Arjan Kuijper Christoph Lampert **Bastian Leibe** Helmut Mayer **Roland Memisevic Rudolf Mester** Sebastian Nowozin Justus Piater Gerhard Rigoll **Bernhard Rinner** Bodo Rosenhahn Stefan Roth Volker Roth Carsten Rother Nicu Sebe Sinisa Segvic **Bernt Schiele** Konrad Schindler Christoph Schnörr Thomas Vetter Joachim Weickert Martin Welk Christopher Zach

U Münster U Kiel Frauenhofer IGD IST Austria RWTH Aachen U BW Munich U Frankfurt U Frankfurt MS Research **U** Innsbruck TU Munich U Klagenfurt **U** Hannover TU Darmstadt ETH Zurich MS Research U Trento U Zagreb MPG ETH Zurich U Heidelberg U Basel U Saarland UMIT Hall Microsoft Research

### 2.3. Local Arrangements

Renate Hönel	TU Graz
Karin Maier	TU Graz
Christian Reinbacher	TU Graz

9

# 3. Local Arrangements

### 3.1. Venue

Workshops and tutorials on Tuesday, August 28<sup>th</sup>, will be held at the Campus of TU Graz, Inffeldgasse 16. The main conference will be held from Wednesday, August 29<sup>th</sup> to Friday, August 31<sup>st</sup> at Messecongress Graz, Messeplatz 1.



# 3.2. Registration

The registration desk on Tuesday will be in front of HS i2 on the Inffeldgasse Campus, from Wednesday to Thursday in the first floor of the Messecongress. If you have any questions, do not hesitate to contact the registration desk.

# 3.3. Internet Access

In your bag you will find a code for internet access at the Campus Inffeldgasse on Tuesday. After connecting to the open WiFi network **tug**, the code will give you full internet access for 24 hours.

From Wednesday to Friday, internet access will be provided by simply connecting to the provided WiFi network.

# 3.4. Public Transport

At the registration you can obtain a 3-day ticket for the public transport system in Graz. On your first ride you have to punch the ticket at the ticket machine.

# 3.5. Welcome Reception

The Welcome Reception will take place on Tuesday evening at Alte Universität, Hofgasse 14. The Welcome Reception is open to all attendees.

# 3.6. Conference Dinner

The Conference Dinner will be on Thursday at the Schlossbergrestaurant, located on the Grazer Schlossberg. The Conference Dinner is open to all attendees with full conference registration, holders of additional dinner tickets and students invited to the Young Researcher's Forum.You can get there either by walking (178 stairs), Schlossberglift or Schlossbergbahn. The fees for latter two are included in your public transport ticket.

# 3.7. Restaurants in Graz

### Gasthof Ganster (Spechtl) Moserhofgasse 1

Only 5 walking minutes away from Campus Inffeldgasse. Features good local cuisine and has several lunch menus to choose from.

### Pizzeria Da Pina Jakominiplatz 19

Cheap Italian restaurant in the heart of Graz. Lunch menu available every day (pizza dish and pasta dish).

### Pronto Hauptplatz 5

Another Italian restaurant, yet more expensive and with high-quality food.

### Don Camillo Franziskanerplatz 11

This restaurant is a genuine Italian pizzeria on one of the most beautiful squares in Graz, Franziskanerplatz. The chef creates many different kinds of original Italian pizza.

### Der Steirer Belgiergasse 1

Original and high-quality Styrian and Austrian cuisine, a lunch menu is available every day.

#### Eckstein Mehlplatz 3

Good food from Styrian beef to fish from Austria, prices are high. As the restaurant is quite popular, making a reservation for the evening is a good idea. Smoking is allowed inside.

### Die Scherbe Stockergasse 2

Decent and cheap food – soup, quiche and hotpot recipes change every day. In the evening the bar is buzzing with young, creative people from Graz.

#### Ginko Grazbachgasse 33

Vegetarian and vegan food with local ingredients, self-service. Curries, Hot Pots, vegetable dishes and vegan desserts are served. The menu changes every day.

### Brot und Spiele Mariahilferstraße 17

Although the restaurant near to Kunsthaus does not look very appealing inside, the cheap steaks and the fast food is very good. The Farmer Burger is a must!

### Alte Münze Sackstraße 22

Traditional Austrian cuisine from local ingredients in the middle of Graz right next to Hauptplatz. If you sit outside, you can enjoy your food with a view on the Schlossbergstiege and the Uhrturm.

### Frankowitsch Stempfergasse 2-4

Famous sandwiches ("Belegte Brötchen") and French patisserie cakes. One of the most popular places in Graz.

### Rox Bar & Grill Joanneumring 5

Having not only the longest bar in Graz, but also an unique mix of rock music and excellent food, Rox invites its guests to enjoy American-style grilled specialities. Nothing for vegetarians though.

# 4. Floorplans

# 4.1. Workshops and Tutorials

Inffeldgasse 12 and 16. Public transportation stop "St. Peter Schulzentrum" of line 6.



# 4.2. Main Conference

Messecongress, Messeplatz 1. Public transportation stop "Messe Graz" of lines 4 and 5.



# 5. Program

### 5.1. Tuesday, August 28th

### **Tutorial 1**

9:00-13:00 Location: HS i2

### Random Forests in Computer Vision Organizer: Christian Leistner, Microsoft Vexcel Imaging, Graz

Random Forests are ensembles of randomized decision trees. They can be used for classification, regression, density estimation, etc. Besides these versatile characteristics, their main benefits are simplicity, speed, robustness to noise and the ability to handle high dimensional input data. In this tutorial, we will give a detailed introduction to Random Forests, explain the critical parameters and discuss their application to many computer vision tasks, such as, object classification, detection, tracking, segmentation and pose estimation.

Lunch Break	13:00-14:00
Tutorial 2	14:00-18:00
	Location: HS i2
Submodularity in Machine Computer Vision Organizers: Andreas Krause Stefanie Jegelka, UC Berkel	Learning and , ETH Zurich ey

### Program

Many problems in machine learning and computer vision are inherently discrete, and the resulting optimization problems can become computationally very challenging. While convexity is an important property when solving continuous optimization problems, submodularity is closely tied to the tractability of many discrete problems. Even more, the characterizing property of submodular functions, diminishing marginal returns, emerges naturally in various settings and is a rich abstraction for a myriad of problems. Long recognized for its importance in combinatorial optimization and game theory, submodularity is now emerging in an increasing number of applications in machine learning and computer vision.

This tutorial introduces researchers to the concept of submodular functions, their optimization, applications and relevant results in recent research directions. Illustrative examples and animations will help develop an intuition for the concept and algorithms. The tutorial aims at providing an overview of existing results that are important to machine learners, and will provide pointers to further, detailed resources. Slides from previous tutorials can be found at submodularity.org.

The tutorial will be divided into four sections:

- 1. What is submodularity and what is special about it? Is my problem submodular?
- 2. What are example applications of submodular maximization and minimization?
- 3. What algorithms exist for optimizing submodular functions?
- 4. What are new directions?

#### Workshop 1

9:00-18:00 Location: HS i11

### Computer Vision in Applications Workshop (CVAW 2012)

Organizers: Csaba Beleznai, Roman Pflugfelder and Branislav Micusik (AIT Austrian Institute of Technology GmbH, Video- and Security Technology)

Applications of computer vision slowly make the step towards practical use under demanding real-world conditions. This workshop attempts to bring together scientists, engineers and technical experts working at institutions of academia, government and industry and pursuing task-oriented research in Computer Vision. The goal of this workshop is to bring together international academic, industrial, and government researchers, along with local companies and to combine and exchange personal views and experience on how Computer Vision can be deployed as an operational solution, how the typical multitude of challenging requirements (accuracy, robustness, run-time) can be met and which are the primary requirements of the end-user to consider.

#### Workshop 2

9:00-18:00 Location: HS i12

#### New Challenges in Neural Computation (NC<sup>2</sup>)

Organizers: Barbara Hammer, University of Bielefeld and Thomas Villmann, University of Applied Science Mittweida

Neural computation and biologically inspired data processing systems constitute essential topics in artificial intelligence accompanied by a well established theoretical foundation and numerous successful applications in science and industry. Caused by an increasing complexity of the involved data and underlying tasks, modern information processing continues to pose challenging tasks to the field which are far from being solved. The goal of the workshop is to figure out paradigms, concepts, and models to extend neural systems to these situations and to identify good benchmark scenarios in which to test advanced capacities of model systems.

Welcome Reception19:30-21:30Location: Aula, Alte Universität

For details see page 11.

### 4.1. Wednesday, August 29th

### Opening

8:45-9:15 Location: Saal 12

### Deutscher Mustererkennungspreis 9:15-10:15 Location: Saal 12

The Deutsche Mustererkennungspreis 2012 for outstanding contributions in the field of computer vision and pattern recognition by a young scientist will be awarded at DAGM-OAGM 2012. The Deutsche Mustererkennungspreis is sponsored by Daimler AG and carries a cash award of 5.000 Euros.

Coffee Break	10:15-10:45	
Oral Session Segmentation	10:45-12:15	
Chair: Stefan Roth	Location: Saal 12	
Segmentation with Iterative Context Forests Björn Fröhlich, Erik Rodner, and Joachim Denzler		
Hierarchies		
Georg Zankl, Yll Haxhimusa, and Adrian Ion		
Hierarchy of Localized Random Forests for		
Video Annotation		
Naveen Shankar Nagaraja, F	Peter Ochs, Kun	
Liu, and Thomas Brox		

#### Lunch Break

12:15-14:00

Invited Talk 114:00-15:00Chair: Horst BischofLocation: Saal 12

Tracking: An Old Dog with Many New Tricks Jiri Matas, Czech Technical University, Prague

Tracking is a very broad area covering methods ranging from ultra-fast rigid patch matchers to complex articulated or non-rigid body pose estimators. In recent years, fueled by both progress in fast detection, learning, segmentation and optic flow methods as well as application-driven demand, a wide range of new tracking methods has emerged.

In the talk, I will briefly discuss the major axes of the "tracker space" and then present three recently developed trackers operating at very different points in the speed-robustness-flexibility space that are close to the "convex hull" of published methods: the TLD tracker (10 Hz), the Flock-of-Trackers (100 Hz) and the Zero-Shift-Point tracker (10 000 Hz). I will focus on one specific aspect shared by the trackers: mechanisms for prediction and handling of tracking errors. Such mechanisms contribute to tracker robustness, which will be demonstrated live.

Poster	Session	1
1 00101	00001011	

15:00-16:30 Location: Foyer

 1) Combination of Sinusoidal and Single Binary Pattern Projection for Fast 3D Surface Reconstruction

Christian Bräuer-Burchardt, Peter Kühmstedt, and Gunther Notni

 2) Consensus Multi-View Photometric Stereo

Mate Beljan, Jens Ackermann, and Michael Goesele

- 3) Automatic Scale Selection of Superimposed Signals
   Oliver Fleischmann and Gerald Sommer
- 4) Sensitivity/Robustness Flexible Ellipticity Measures Mehmet Ali Aktas and Jovisa Zunic
- 5) Sparse Point Estimation for Bayesian Regression via Simulated Annealing Sudhir Raman and Volker Roth
- 6) Active Metric Learning for Object Recognition

Sandra Ebert, Mario Fritz, and and Bernt Schiele

 7) Accuracy-Efficiency Evaluation of Adaptive Support Weight Techniques for Local Stereo Matching

Asmaa Hosni, Margrit Gelautz, and Michael Bleyer

 8) Groupwise Shape Registration Based on Entropy Minimization

Youngwook Kee, Daniel Cremers, and Junmo Kim

9) Adaptive Multi-cue 3D Tracking of Arbitrary Objects
German Martin Garcia Dominik A Klein
Jörg Stückler, Simone Frintron, and Armin B
Cremers
10) Training of Classifiers for Quality Control
of On-line Laser Brazing Processes with
Highly Imbalanced Datasets
Daniel Fecker, Volker Märgner, and Tim
Fingscheidt
11) PCA-enhanced stochastic optimization
methods
Alina Kuznetsova, Gerard Pons-Moll, and Bodo
Rosenhahn
12) A Real-time MRF Based Approach for Discuss Commentation
Binary Segmentation
12) Pottics - The Potts Topic Model for
Somantic Image Segmentation
Semantic Image Segmentation Christoph Dann, Peter Gebler, Stefan Roth, and
Semantic Image Segmentation Christoph Dann, Peter Gehler, Stefan Roth, and Sebastian Nowozin
<ul> <li>Semantic Image Segmentation</li> <li>Christoph Dann, Peter Gehler, Stefan Roth, and</li> <li>Sebastian Nowozin</li> <li>14) Decision tree ensembles in biomedical</li> </ul>
<ul> <li>Semantic Image Segmentation</li> <li>Christoph Dann, Peter Gehler, Stefan Roth, and</li> <li>Sebastian Nowozin</li> <li>14) Decision tree ensembles in biomedical</li> <li>time-series classification</li> </ul>
<ul> <li>Semantic Image Segmentation Christoph Dann, Peter Gehler, Stefan Roth, and Sebastian Nowozin</li> <li>14) Decision tree ensembles in biomedical time-series classification Alan Jovic, Karla Brkic, and Nikola Bogunovic</li> </ul>
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<ul> <li>Semantic Image Segmentation Christoph Dann, Peter Gehler, Stefan Roth, and Sebastian Nowozin</li> <li>14) Decision tree ensembles in biomedical time-series classification Alan Jovic, Karla Brkic, and Nikola Bogunovic</li> <li>15) Spatio-temporally Coherent Interactive Video Object Segmentation via Efficient</li> </ul>
<ul> <li>Semantic Image Segmentation Christoph Dann, Peter Gehler, Stefan Roth, and Sebastian Nowozin</li> <li>14) Decision tree ensembles in biomedical time-series classification Alan Jovic, Karla Brkic, and Nikola Bogunovic</li> <li>15) Spatio-temporally Coherent Interactive Video Object Segmentation via Efficient Filtering</li> </ul>
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<ul> <li>Semantic Image Segmentation Christoph Dann, Peter Gehler, Stefan Roth, and Sebastian Nowozin</li> <li>14) Decision tree ensembles in biomedical time-series classification Alan Jovic, Karla Brkic, and Nikola Bogunovic</li> <li>15) Spatio-temporally Coherent Interactive Video Object Segmentation via Efficient Filtering Nicole Brosch, Asmaa Hosni, Christoph Rhemann, and Margrit Gelautz</li> <li>16) Discrepancy Norm as Fitness Function for Defect Detection on Regularly Textured Ourfaced</li> </ul>
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17) Video Compression with 3-D Pose	
Tracking, PDE-based Image Coding, and	
Electrostatic Halftoning	
Christian Schmaltz and Joachim Weickert	
18) Image Completion Optimised	
for Realistic Simulations of Wound	
Development	
Michael Schneeberger, Martina Uray, and Heinz	2
Mayer	
<b>19)</b> Automatic Model Selection in Archetype	
Analysis	
Sandhya Prabhakaran, Sudhir Raman, Julia E.	
Vogt, and Volker Roth	
20) Stereo Fusion from Multiple Viewpoints	
Christian Unger, Eric Wahl, Peter Sturm, and	
Slobodan Ilic	
21) Confidence Measurements for Adaptive	
Bayes Decision Classifier Cascades	
and their Application to US Speed Limit	
Detection	
Armin Staudenmaier, Ulrich Klauck, Ulrich	
Kreßel, Frank Lindner, and Christian Wöhler	
22) A Bottom-up Approach for Learning	
Visual Object Detection Models from	
Unreliable Sources	
Fabian Nasse and Gernot A. Fink	
23) Active Learning of Ensemble Classifiers	
for Gesture Recognition	
J. Schumacher, D. Sakic, A. Grumpe, G. A.	
Fink. and C. Wöhler	

DAGM Young Researchers Forum15:00-16:30Chair: Uwe FrankeLocation: Foyer

YRF1) Automatic level set based cerebral vessel segmentation and bone removal in CT angiography data sets

Stephanie Behrens, University of Magdeburg

- YRF2) Three-Dimensional Data Compression with Anisotropic Diffusion Pascal Peter. Saarland University
- YRF3) Stixel-Based Target Existence Estimation under Adverse Conditions Timo Scharwächter, Daimler AG

Oral Session Low-Level Vision16:30-18:15Chair: Andres BruhnLocation: Saal 12

A TV-L1 Optical Flow Method with Occlusion Detection

Coloma Ballester, Lluis Garrido, Vanel Lazcano, and Vicent Caselles

- Curvature Prior for MRF-based Segmentation and Shape Inpainting Alexander Shekhovtsov, Pushmeet Kohli, and Carsten Rother
- Mean Field for Continuous High-Order MRFs Kevin Schelten and Stefan Roth
- How well do filter-based MRFs model natural images?

Qi Gao and Stefan Roth

DAGM/OAGM Meetings 18:30-20:00 Locations: Saal 12 and Saal 14

### 4.2. Thursday, August 30<sup>th</sup>

Invited Talk 2	9:00-10:00	
Chair: Axel Pinz	Location: Saal 12	
Understanding Visual Scenes		
Antonio Torralba, Massa	chusetts Institute of	

Technology

Human visual scene understanding is remarkable: with only a brief glance at an image, an abundance of information is available - spatial structure, scene category and the identity of main objects in the scene. As the field of computer vision moves into integrated systems that try to recognize many object classes and learn about contextual relationships between objects, the lack of large annotated datasets hinders the fast development of robust solutions. In the early days, the first challenge a computer vision researcher would encounter would be the difficult task of digitizing a photograph. Even once a picture was in digital form, storing a large number of pictures (say six) consumed most of the available computational resources. In addition to the algorithmic advances required to solve object recognition, a key component to progress is access to data in order to train computational models for the different object classes. This situation has dramatically changed in the last decade, especially via the internet, which has given computer vision researchers access to billions of images and videos. In this talk I will describe our recent work on visual scene understanding that try to build integrated models for scene and object recognition, emphasizing the power of large database of annotated images in computer vision.

### **Coffee Break**

10:00-10:30

Oral Session 3D Reconstruction10:30-12:15Chair: Reinhard KochLocation: Saal 12

 Anisotropic Range Image Integration Christopher Schroers, Henning Zimmer, Levi Valgaerts, Andres Bruhn, Oliver Demetz, and Joachim Weickert
 Modeling of Sparsely Sampled Tubular Surfaces Using Coupled Curves Thorsten Schmidt, Margret Keuper, Taras

Pasternak, Klaus Palme, and Olaf Ronneberger

Shape (Self-)Similarity and Dissimilarity Rating for Segmentation and Matching Simon Winkelbach, Jens Spehr, Dirk Buchholz, Markus Rilk, and Friedrich M. Wahl

Dense 3D Reconstruction with a Hand-held Camera

Benjamin Ummenhofer and Thomas Brox

#### Lunch Break

12:15-14:00

Oral Session Recognition14:00-15:45Chair: Joachim BuhmannLocation: Saal 12

OUR-CVFH – Oriented, Unique and Repeatable Clustered Viewpoint Feature Histogram for Object Recognition and 6DOF Pose Estimation

Aitor Aldoma, Federico Tombari, Radu Bogdan Rusu, and Markus Vincze

3D Object Recognition and Pose Estimation for Multiple Objects using Multi-Prioritized RANSAC and Model Updating

Michele Fenzi, Ralf Dragon, Laura Leal-Taixe, Bodo Rosenhahn, and Jörn Ostermann

Classification with Global, Local and Shared Features

Hakan Bilen, Vinay P. Namboodir, and Luc J. Van Gool

Object Detection in Multi-View X-Ray Images Thorsten Franzel, Uwe Schmidt, and Stefan Roth

**Poster Session 2** 

15:45-17:00 Location: Foyer

In this session the same posters as in **Poster Session 1** will be presented. For details see page 22.

Oral Soccion Applications	17.00 18.15
	17.00-10.40
Chair: Rudolf Mester	Location: Saal 12
Eve Localization Using The Discriminative	
Generalized Hough Transform	
Ferdinand Hahmann, Heike Runnertshofen	
Gordon Boer, Raif Stannarius, and Hauke	
Schramm	
Simultaneous Estimation of Material	
Properties and Pose for Deformable Objects	
from Depth and Color Images	
Andreas Rune Fugl Andreas Jordt Henrik	
Gordon Petersen, Morten Willatzen, and	
Beinbard Kech	
Surface Quality Inspection	of Deformable
Parts with Variable B-Splin	e Surfaces
Sebastian von Enzberg and Bernd Michaelis	
Automated Image Forgery Detection through	
Classification of JPEG Ghosts	
Fahian Zach, Christian Riess, and Elli	
	, and
Angelopoulou	

# Conference Dinner

ner 19:30-22:00 Location: Schlossbergrestaurant

For details see page 11.

### 4.3. Friday, August 31<sup>st</sup>

Invited Talk 3 Chair: Thomas Pock 9:00-10:00 Location: Saal 12

Large-scale Convex Optimization for Machine Learning Francis Bach, INRIA

Many machine learning and signal processing problems are traditionally cast as convex optimization problems. A common difficulty in solving these problems is the size of the data, where there are many observations ("large n") and each of these is large ("large p"). In this setting, online algorithms which pass over the data only once, are usually preferred over batch algorithms, which require multiple passes over the data. In this talk, I will present several recent results, showing that in the ideal infinite-data setting, online learning algorithms based on stochastic approximation should be preferred, but that in the practical finite-data setting, an appropriate combination of batch and online algorithms leads to unexpected behaviors, such as a linear convergence rate with an iteration cost similar to stochastic gradient descent. (joint work with Nicolas Le Roux, Eric Moulines and Mark Schmidt)

**Coffee Break** 

10:00-10:30

Oral Session Learning	10:30-12:15
Chair: Volker Roth	Location: Saal 12
<ul> <li>Oral Session Learning Chair: Volker Roth</li> <li>Synergy-based Learning of Martin Köstinger, Peter M. F Bischof</li> <li>Information Theoretic Clue Minimum Spanning Trees Andreas C. Müller, Sebastia Christoph H. Lampert</li> <li>Dynamical SVM for Time S Classification Ramon Huerta, Shankar Ve Muezzinoglu, and Alexande</li> <li>Trust-Region Algorithm for</li> </ul>	<i>Location: Saal 12</i> <b>of Facial Identity</b> <i>Roth, and Horst</i> <b>stering using</b> <i>an Nowozin, and</i> <b>Series</b> <i>mbu, Mehmet K.</i> <i>r Vergara</i> <b>r Nonnegative</b>
Matrix Factorization with	Alpha- and
Beta-divergences	
Rafal Zdunek	

Lunch	Break
-------	-------

12:15-14:00

Oral Session Features	14:00-15:45	
Chair: Sinisa Segvic	Location: Saal 12	
Line Matching Using Appearance		
Similarities and Geometric Constraints		
Lilian Zhang and Reinhard Koch		
Salient Pattern Detection using W2 on		
Multivariate Normal Distributions		
Dominik Alexander Klein and Simone Frintrop		
A Simple Extension of Stability Feature		
Selection		

A. Beinrucker, U. Dogan, and G. Blanchard

### Feature-Based Multi-Video Synchronization with Subframe Accuracy

A. Elhayek, C. Stoll, K. I. Kim, H.-P. Seidel, and C. Theobalt

Break

15:45-16:30

#### Awards and Closing

16:30-17:00 Location: Saal 12

The German Association for Pattern Recognition (DAGM) and the Austrian Association for Pattern Recognition (OAGM) award prizes each year for the best scientific contributions to the DAGM and OAGM symposia. The criteria include both the originality and scientific quality of the submitted work, as well the quality of the presentation (talk or poster) during the symposium. The prize-winning contributions will be awarded a certificate, a cash prize, and will be mentioned in the proceedings of the following symposium as well as on the web site of the DAGM and the OAGM.

32

### GCPR 2013



# September 10<sup>th</sup> to 13<sup>th</sup> 2013

# Saarbrücken, Germany

#### http://www.gcpr2013.uni-saarland.de

Workshops and Tutorials on September  $10^{th}$  Main conference from September  $11^{th}$  to  $13^{th}$ 





The OAGM/AAPR Workshop 2013 will take place in Innsbruck, the Austrian Capital of the Alps, under the motto:

#### Pattern Recognition and Computer Vision in Action

Pattern recognition and computer vision have attained a high level of maturity, and are active in everyday tasks. Research

continues to be driven by applications ranging from media handling (restoration, enhancement, retrieval) via science and emergency response (perceptual systems for autonomous robots, site reconstruction, video event detection) to medical (detection of pathologies, anatomi-



cal reconstruction, image-guided surgery) and social demands (gesture, face, facial-expression, and place recognition).



Full-paper submissions are solicited in all areas of pattern recognition and computer vision, including pattern recognition on non-visual data such as music, speech, text, biomedical or scientific data.

Tentative Timeline: Submission of full papers: Notifications of acceptance: Camera-ready papers due:

February 28, 2013 April 1, 2013 April 26, 2013

Chair: Justus Piater, University of Innsbruck

### Notes





