

32nd Annual Symposium of the German Association for Pattern Recognition

DAGM 2010

<http://www.dagm2010.org>

Darmstadt, Germany, September 21-24, 2010



DAIMLER



BOSCH

Invented for life



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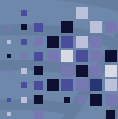
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DAGM

Deutsche Arbeitsgemeinschaft
für Mustererkennung e.V.



Fraunhofer

IGD



TECHNISCHE
UNIVERSITÄT
DARMSTADT

Welcome to DAGM 2010!

On behalf of the organizing committee, we would like to welcome you to Darmstadt and DAGM 2010, the 32nd Annual Symposium of the German Association for Pattern Recognition.

The technical program covers all aspects of pattern recognition and, to name only a few areas, ranges from 3D reconstruction, to object recognition and medical applications. Our call for papers resulted in 134 submissions from institutions in 21 countries. Each paper underwent a rigorous reviewing process based on which the program committee selected a total of 57 papers, corresponding to an acceptance rate of below 45%. Out of all accepted papers, 24 were chosen for oral and 33 for poster presentation. All accepted papers have been published in the proceedings and given the same number of pages. 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 a workshop on “Pattern Recognition for IT Security”, which is organized by Stefan Katzenbeisser, Jana Dittmann and Claus Vielhauer, as well as by four tutorials given by renowned experts:

- Sparse Linear Models: Reconstruction and Approximate Bayesian Inference – by Matthias Seeger
- Computer Vision on GPUs – by Jan-Michael Frahm and P.J. Narayanan
- Color in Image and Video Processing – by Joost van de Weijer
- MAP Inference in Discrete Models – by Carsten Rother

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

- Richard Szeliski (Microsoft Research Redmond)
- Yair Weiss (The Hebrew University of Jerusalem)
- Andrew Zisserman (University of Oxford)

Due to its success at DAGM 2009 in Jena, we again organized a Young Researchers' Forum at DAGM 2010 to promote scientific interaction between excellent young researchers and our community. This year the contributions of six students were accepted, who are presenting their Bachelor or Master thesis work during the conference and interact with our community.

We would like to extend our sincere thanks to all local organizers and student volunteers who helped planning and running DAGM 2010 in Darmstadt. We would also like to sincerely 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 are happy to host the 32nd Annual Symposium of the German Association for Pattern Recognition in Darmstadt and look forward to DAGM 2011 in Frankfurt.

Michael Goesele
Arjan Kuijper
Stefan Roth
Bernt Schiele
Konrad Schindler

Program Committee

- H. Bischof, TU Graz
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Workshop and Tutorial Chair

Konrad Schindler

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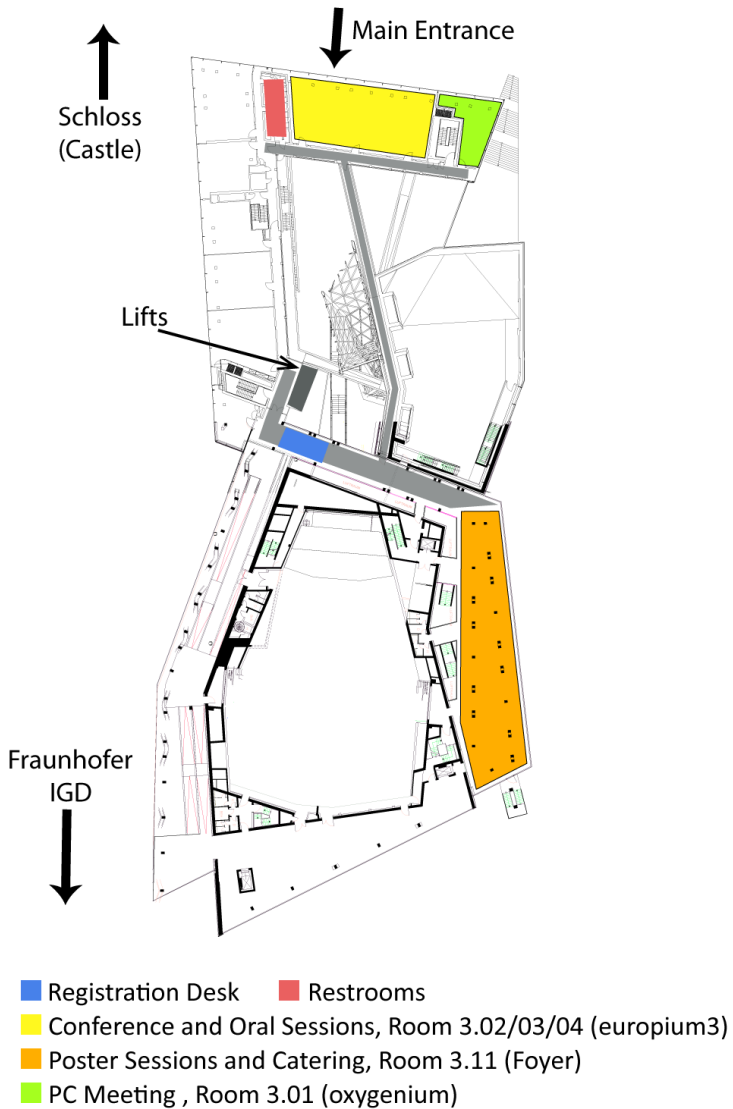
Silke Romero

Stefan Roth

Bernt Schiele

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Darmstadtium, 3rd Floor





Linienetzplan

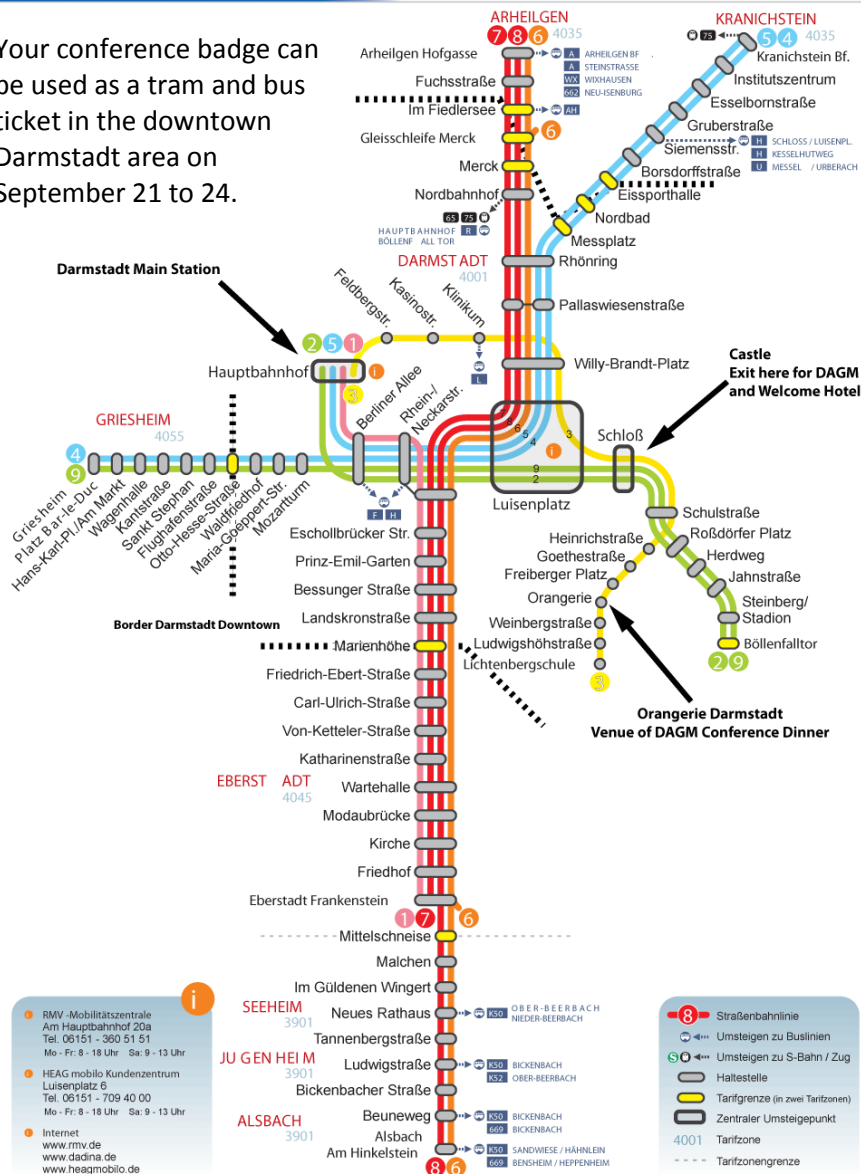
Straßenbahn

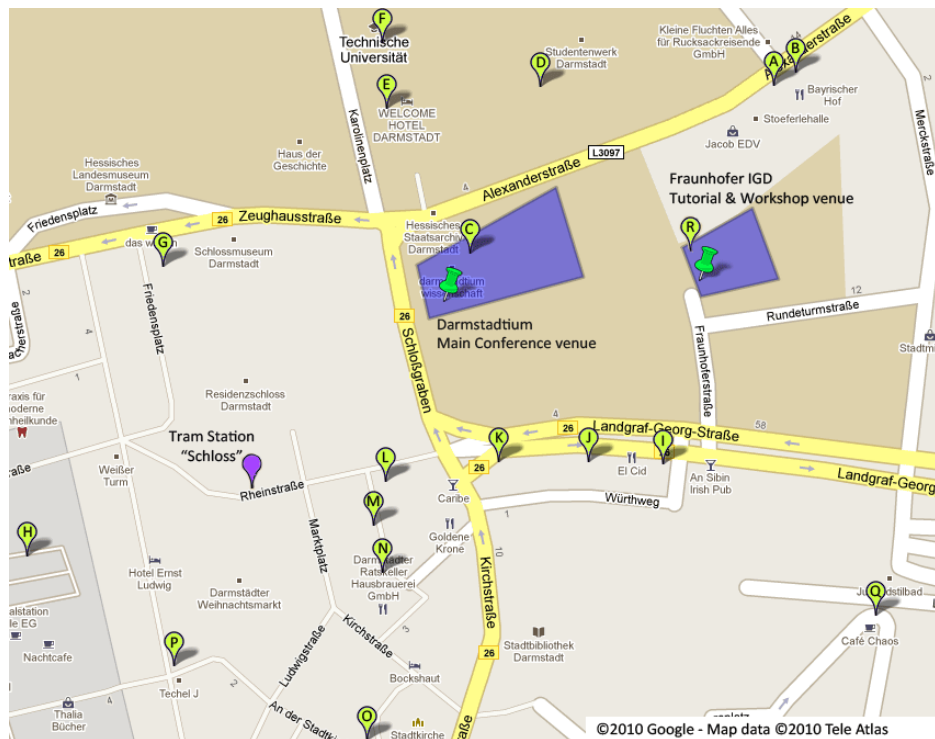


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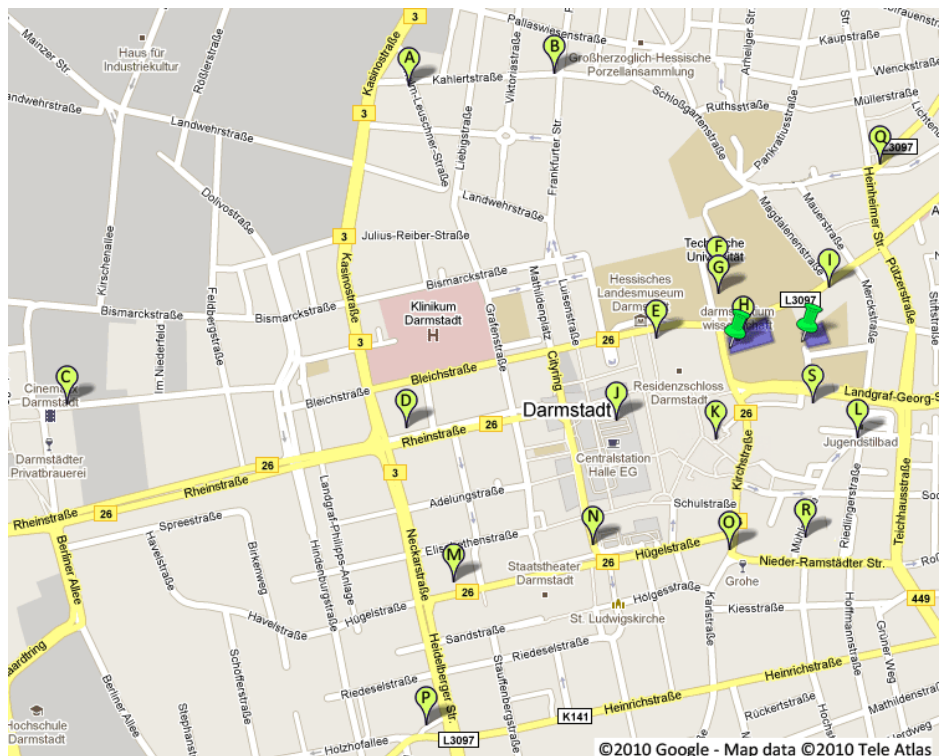
Your conference badge can be used as a tram and bus ticket in the downtown Darmstadt area on September 21 to 24.





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- A Da Nino (Italian & pizza, € - €€) ★
- B Bayrischer Hof (local German, €)
- C Calla (upscale international, €€€)
- D Mensa TU Darmstadt (student lunch, €)
- E Bistro Moller - Welcome Hotel (various bistro foods, €€)
- F Restaurant Herrengarten - Welcome Hotel (medium to up-scale international, €€€)
- G Waben (international & bistro food, € - €€) ★
- H KuK (Viennese-style café, cakes, lunches & coffee, € - €€)
- I Erbil (Döner, €)
- J Efendi Kebab Haus (Döner, €)
- K Asia Kim (Asian all you can eat buffet, €)
- L Ye Babam Ye (Turkish grill, €)
- M Oh Scooz! (Italian, €)
- N Café Extrablatt (American, international, € - €€)
- O Restaurant Zoo (international, €€) ★
- P Coffea Bar (best coffee in Darmstadt, €) ★
- Q Cafe Chaos (breakfast until midnight, international, € - €€) ★
- R IGD Cafeteria (economical lunch, €)



- A La Bodega (Spanish, € - €€)
- B Restaurant Sardegna (Italian, € - €€)
- C Khan (Mongolian grill - reservation recommended, €€) ★
- D Poseidon (Greek, €)
- E Waben (international, various bistro food, € - €€) ★
- F Restaurant Herrengarten - Welcome Hotel (medium to up-scale international, €€€)
- G Bistro Moller - Welcome Hotel (various bistro foods, €€)
- H Calla (upscale international, €€€)
- I Da Nino (Italian & pizza - reservation recommended, €€)
- J KuK (Viennese-style café, cakes & coffee, € - €€)
- K Darmstädter Ratskeller (local German, € - €€)
- L Cafe Chaos (breakfast until midnight, international, € - €€) ★
- M Shiraz (Oriental, €€)
- N Restaurant City Braustübl (local German, € - €€)
- O Restaurant Sitte (international, €€) ★
- P Lahore Palace (Indian, € - €€)
- Q Chin Su (Asian / Thai / Sushi, € - €€)
- R Müller & Müller (German & French, excellent - reservation recommended, €€ - €€€) ★
- S El Cid (tapas bar, €€) ★

Tutorials – Morning Session**09:00 – 13:00****Sparse Linear Models: Reconstruction and Approximate Bayesian Inference**

Matthias Seeger, 09:00 – 13:00, Room 073, Fraunhofer IGD

Recent quantum leaps for problems such as image denoising, deconvolution, image compression, or undersampled reconstruction come from endowing classical least squares techniques with realistic prior assumptions about image statistics: stepping from linear to sparse linear models (SLMs). In the SLM setting, we can bias inverse problems towards a gist of what makes a natural image, yet still employ much of the computational foundation of least squares. Direct reconstruction becomes maximum a posteriori (MAP) estimation, a convex optimization problem in many cases. Bayesian SLM inference goes beyond single best guesses, in that reconstruction uncertainties are summarized in the posterior distribution. Compared to MAP estimation, sparse Bayesian methods provide superior robustness in advanced problems like blind deconvolution or hyperparameter learning. Beyond, uncertainty information can be used to automatically optimize image acquisition.

In this tutorial, I will review the mathematics behind sparse linear models, showing how properties of SLM prior potentials lead to optimization and inference approximation principles. I will discuss and contrast some reconstruction and recent variational approximate inference methods, with particular focus on exposing convexity and reductions to underlying standard computational primitives. Motivating examples from computer vision and medical imaging will be given.

Color in Image and Video Processing

Joost van de Weijer, 09:00 - 13:00, Room 072, Fraunhofer IGD

This tutorial provides an overview of recent color understanding developments in computer vision. The aim is to provide attendees with a theoretical framework and a set of techniques which allows them to effectively use color information in their applications.

The tutorial is divided into two parts. First, the theoretical foundations of color information will be outlined, such as photometric invariance, color constancy, discriminative power, and color saliency. This will also include a discussion of human color vision and an overview of appropriate color spaces. The second part will focus on the practical usage of color in image and video processing. We will show examples from a number of relevant application areas, such as edge detection, image segmentation, motion detection, object recognition, image and video retrieval, and genre classification. Among others, the results will include Pascal Challenge VOC 2009 image classification results, in which color information plays a pivotal role.

- Introduction
- Theoretical foundations
 - human color vision
 - color representation and color spaces
 - photometric invariance
 - color constancy
 - color saliency detection
 - color feature detection and description
- Practical Applications
 - color image segmentation
 - color for photo editing applications
 - color object recognition (+ PASCAL challenge)
 - color image/video classification

Tutorials – Afternoon Session

14:00 – 18:00

Computer Vision on GPUs

Jan-Michael Frahm, P. J. Narayanan, 14:00 - 18:00, Room 072, Fraunhofer IGD

Recent demand for high performance techniques has led to the use of GPUs as a fast processing platform for various computer vision algorithms. This development was driven by the ability of many computer vision algorithms to use standard computer graphics techniques to their benefit, the high performance gains of GPUs in recent years, and their increasing ability to support general purpose computing. These trends gain wider acceptance and this course/tutorial aims to educate computer vision and image processing researchers about this exciting development of fast image analysis algorithms. In recent years, an increasing number of researchers have used GPUs for processing demonstrating the interest in the area. The tutorial will give an introduction to the programming of the current state of the art hardware to enable participants to employ the unique capabilities of GPUs. The following topics will be covered over the course of a half day:

- Introduction (30 min)
- Stream/GPU Computing: Universal concepts (60 min)
 - Heterogeneous computing
 - Data-Parallel Programming
 - Multi-tier thread structure: Overview of CUDA/OpenCL
- CUDA: Overview of Architecture & Prog (60 min)
- Application Case Studies (90 min)

MAP Inference in Discrete Models

Carsten Rother, 14:00 - 18:00, Room 073, Fraunhofer IGD

Many problems in Computer Vision and Graphics are formulated in form of a random field of discrete variables. Examples in low-level vision are image segmentation and stereo reconstruction; in high-level vision object recognition, and in graphics panoramic stitching and texture synthesis. The goal is typically to infer the most probable values of the random variables, known as Maximum a Posteriori (MAP) estimation. This has been widely studied in several areas of Computer Science (e.g. Computer Vision, Machine Learning, Theory), and many efficient techniques exist, which are able to obtain accurate and reliable solutions to many problems. This has led to a significant increase in the use of random field models in computer vision.

The focus of this tutorial is twofold: a) to review and examine different types of discrete models, ranging from simple (low-connected) to complex (highly-connected); b) to review and compare different types of optimization techniques for these models. This is a shortened version of the recent tutorials at ICCV 09 and CVPR 10.

- Introduction (30 min)
- Discrete Models in Computer Vision (60min)
- Optimization techniques (60min)
 - Combinatorial Optimization (e.g. graph cut)
 - Message Passing (e.g. belief propagation)
 - Move-making methods (e.g. alpha-expansion)
- Comparison of techniques (30min)
- Advanced topics: LP-relaxation, dual-decomposition (30min)

Workshop Pattern Recognition for IT Security

Room 074, Fraunhofer IGD

Alternative Authentication Methods

11:00 – 12:00

- **The IR Ring: Authenticating users' touches on a multi-touch display**
Volker Roth, Philipp Schmidt, Benjamin Güldenring (invited paper)
- **CAPTCHAs: The Good, the Bad, and the Ugly**
Paul Baecher, Marc Fischlin, Lior Gordon, Robert Langenberg, Michael Lützwow, Dominique Schröder

Biometrics I

12:00 – 13:00

- **Security Enhanced Random Projection to Protect Biometric Templates**
Bian Yang, Koen Simoens, Christoph Busch
- **Analysis of Relative Entropy, Accuracy, and Quality of Face Biometric**
Sabah A. Jassim, Hisham Al-Assam, Ali J. Abboud, Harin Sellahewa

Lunch

13:00 – 14:00

Forensic Methods

14:00 – 15:00

- **Forensic Fingerprint Detection: Challenges of Benchmarking new Contactless Fingerprint Sensors - a First Proposal**

Marcus Leich, Michael Ulrich, Mario Hildebrandt, Stefan Kiltz, Claus Vielhauer

- **An ML Perspective on Feature-Based Forensic Camera Model Identification**

Thomas Gloe, Nicolas Cebron, Rainer Boehme

Biometrics II

15:00 – 16:00

- **Effects of Aging Processes on Dynamic Biometric Handwriting**

Tobias Scheidat, Juliane Heinze, Claus Vielhauer, Andrey Makrushin

- **Selection of handwriting features for better user authentication via secure sketch algorithm**

Andrey Makrushin, Tobias Scheidat, Claus Vielhauer

Coffee Break

16:00 – 16:30

Watermarking and Steganography

16:30 – 17:30

- **Multi-level information fusion and model plausibility checking in the application of statistical pattern recognition in audio steganalysis**

Christian Kraetzer, Jana Dittmann, Marcus Leich

- **Robust hash controlled watermark embedding**

Martin Steinebach, Sascha Zmudzinski, Moazzam Butt

Welcome Reception**18:15 – 21:00**

Drinks, cocktails, and pretzels are served in the lobby of the Fraunhofer IGD. The registration desk will also be open during the welcome reception.

The welcome reception is open to all attendees with full conference registration and full tutorial/workshop registrations. The welcome reception is not included in student registrations.

Welcome Address

08:45 – 09:15

Session chair: Bernt Schiele

- Bernt Schiele, TU Darmstadt and MPI Informatics
- Reiner Anderl, Vice President, TU Darmstadt
- Karsten Weihe, Department Chair,
Department of Computer Science, TU Darmstadt
- Arjan Kuijper, Fraunhofer IGD

Olympus Session

09:15 – 10:00

Award Presentation and Talk

Session chair: Joachim M. Buhmann

Coffee Break

10:00 – 10:30

Oral Session

10:30 – 12:15

Geometry and Calibration

Session chair: Reinhard Koch

- **3D Reconstruction Using an n-Layer Heightmap**
David Gallup, Marc Pollefeys and Jan-Michael Frahm
- **Real-time Dense Geometry from a Handheld Camera**
Jan Stühmer, Stefan Gumhold and Daniel Cremers

- **From Single Cameras to the Camera Network: an Auto-Calibration Framework for Surveillance**
Cristina Picus, Branislav Micusik and Roman Pflugfelder
- **Active Self-Calibration of Multi-camera Systems**
Marcel Brückner and Joachim Denzler

Lunch**12:15 – 13:45**

Program committee meeting (for PC members only)

Invited Talk**13:45 – 14:45****Weaving the World's Photos into a 3D Web**

Richard Szeliski, Microsoft Research Redmond

Session chair: Michael Goesele

The explosion of imagery available on the Internet has opened up a host of new applications in computer vision, image-based modeling, and image-based rendering. It is now possible to automatically reconstruct 3D models of heavily photographed scenes and objects such as tourist locations, and to recognize these from novel images such as cell phone queries. In this talk, I survey some of the work in this field, starting with the Photo Tourism image-based modeling and navigation system, and then discussing the complexity issues (and solutions) engendered by the huge scale of these datasets. I also discuss work in interactive and automated 3D modeling, with a particular emphasis on architectural reconstruction, and location recognition in urban environments.

Poster Spotlight Presentations**14:45 – 15:00**

Session chair: Michael Goesele

Wednesday Poster Session**15:00 – 16:45**

- **Optimization on Shape Curves with Application to Specular Stereo**
Jonathan Balzer, Sebastian Höfer, Stefan Werling and Jürgen Beyerer
- **Unsupervised Facade Segmentation Using Repetitive Patterns**
Andreas Wendel, Michael Donoser and Horst Bischof
- **Image Segmentation with a Statistical Appearance Model and a Generic Mumford-Shah Inspired Outside Model**
Thomas Albrecht and Thomas Vetter
- **Estimating Force Fields of Living Cells - Comparison of Several Regularization Schemes Combined with Automatic Parameter Choice**
Sebastian Houben, Norbert Kirchgeßner and Rudolf Merkel
- **Classification of Microorganisms via Raman Spectroscopy Using Gaussian Processes**
Michael Kemmler, Joachim Denzler, Petra Rösch and Jürgen Popp
- **Robust Identification of Locally Planar Objects Represented by 2D Point Clouds under Affine Distortions**
Dominic Mai, Thorsten Schmidt and Hans Burkhardt
- **Model-Based Recognition of Domino Tiles Using TGraphs**
Stefan Wirtz, Marcel Häselich and Dietrich Paulus
- **Slicing the View: Occlusion-Aware View-Based Robot Navigation**
David Dederscheck, Martin Zahn, Holger Friedrich and Rudolf Mester

- **A Contour Matching Algorithm to Reconstruct Ruptured Documents**
Anke Stieber, Jan Schneider, Bertram Nickolay and Jörg Krüger
- **Local Structure Analysis by Isotropic Hilbert Transforms**
Lennart Wietzke, Oliver Fleischmann, Anne Sedlazeck and Gerald Sommer
- **Complex Motion Models for Simple Optical Flow Estimation**
Claudia Nieuwenhuis, Daniel Kondermann and Christoph S. Garbe
- **Tracking People in Broadcast Sports**
Angela Yao, Dominique Uebbersax, Juergen Gall and Luc Van Gool
- **Inpainting in Multi-Image Stereo**
Arnav V. Bhavsar, Ambasamudram N. Rajagopalan
- **Analysis of Length and Orientation of Microtubules in Wide-Field Fluorescence Microscopy**
Gerlind Herberich, Anca Ivanescu, Ivonne Gamper, Antonio Sechi and Til Aach
- **Learning Non-stationary System Dynamics Online Using Gaussian Processes**
Axel Rottmann and Wolfram Burgard
- **Computational TMA Analysis and Cell Nucleus Classification of Renal Cell Carcinoma**
Peter J. Schüffler, Thomas J. Fuchs, Cheng Soon Ong, Volker Roth and Joachim M. Buhmann

- **Multi-Cue Pedestrian Classification with Partial Occlusion Handling**
Angela Eigenstetter
DAGM Young Researchers' Forum 2010
- **Dense Spatio-temporal Motion Segmentation for Tracking Multiple Self-Occluding People**
Martin Hofmann
DAGM Young Researchers' Forum 2010
- **Quantification and Description of Distance Measurement Errors of a Time-of-Flight Camera**
Tim Pattinson
DAGM Young Researchers' Forum 2010

Oral Session Recognition

16:45 – 18:00

Session chair: Bastian Leibe

- **Efficient Object Detection Using Orthogonal NMF Descriptor Hierarchies**
Thomas Mauthner, Stefan Kluckner, Peter M. Roth and Horst Bischof
- **VF-SIFT: Very Fast SIFT Feature Matching**
Faraj Alhwarin, Danijela Ristic-Durrant and Axel Gräser
- **One-Shot Learning of Object Categories Using Dependent Gaussian Processes**
Erik Rodner and Joachim Denzler

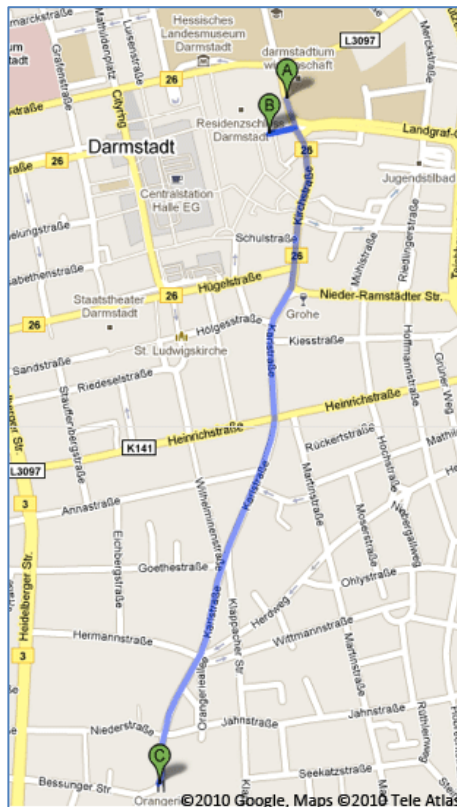
Conference Dinner

19:30 – 23:30

Orangerie Darmstadt
Bessunger Straße 44
Darmstadt-Bessungen
Phone: +49 6151 3966446

Public transport: Please board tram line 3 at stop “Schloss” in direction of Lichtenbergschule (see map B) until “Orangerie” (map C). The Orangerie will be on the opposite side of the street when you step out of the tram.

Walking directions: The Orangerie is about 25 minutes walking distance from the conference center (map A). Just use the main exit and turn left following Schlossgraben, Kirchstrasse, Karlstrasse and Bessunger Strasse towards the south until you reach the Orangerie (on your left).



The conference dinner is open to all attendees with full conference registration and holders of additional dinner tickets. The dinner is not included in student registrations and tutorial / workshop only registrations.

Invited Talk**09:00 – 10:00****Learning and Inference in Low-Level Vision**

Yair Weiss, The Hebrew University of Jerusalem

Session chair: Stefan Roth

Low level vision addresses the issues of labeling and organizing image pixels according to scene related properties - such as motion, contrast, depth and reflectance. I will describe our attempts to understand low-level vision in humans and machines as optimal inference given the statistics of the world. In particular, I will show how message passing algorithms allow us to solve real-world instances of NP-hard problems and to efficiently learn energy functions despite an exponential number of constraints.

Coffee Break**10:00 – 10:30****Oral Session****10:30 – 12:15****Learning and Optimization**

Session chair: Peter Gehler

- **Uncertainty Driven Multi-Scale Optimization**
Pushmeet Kohli, Victor Lempitsky and Carsten Rother
- **The Group-Lasso: $l_{1,\infty}$ Regularization versus $l_{1,2}$ Regularization**
Julia E. Vogt and Volker Roth

- **Random Fourier Approximations for Skewed Multiplicative Histogram Kernels**
Fuxin Li, Catalin Ionescu and Cristian Sminchisescu
- **Gaussian Mixture Modeling with Gaussian Process Latent Variable Models**
Hannes Nickisch and Carl Edward Rasmussen

Lunch

12:15 – 13:45

Program committee meeting (for PC members only)

Oral Session

13:45 – 15:00

Applications

Session chair: Klaus Tönnies

- **Classification of Swimming Microorganisms Motion Patterns in 4D Digital In-Line Holography Data**
Laura Leal-Taixé, Matthias Heydt, Sebastian Weiße, Axel Rosenhahn and Bodo Rosenhahn
- **Catheter Tracking: Filter-Based vs. Learning-Based**
Alexander Brost, Andreas Wimmer, Rui Liao, Joachim Hornegger and Norbert Strobel
- **Exploiting Redundancy for Aerial Image Fusion Using Convex Optimization**
Stefan Kluckner, Thomas Pock and Horst Bischof

Poster Spotlight Presentations**15:00 – 15:15**

Session chair: Stefan Roth

Thursday Poster Session**15:15 – 17:00**

- **A Convex Approach for Variational Super-Resolution**
Markus Unger, Thomas Pock, Manuel Werlberger and Horst Bischof
- **Incremental Learning in the Energy Minimisation Framework for Interactive Segmentation**
Denis Kirmizigül and Dmitrij Schlesinger
- **A Model-Based Approach to the Segmentation of Nasal Cavity and Paranasal Sinus Boundaries**
Carsten Last, Simon Winkelbach, Friedrich M. Wahl, Klaus W.G. Eichhorn and Friedrich Bootz
- **A Template-Based Approach for Real-Time Speed-Limit-Sign Recognition on an Embedded System Using GPU Computing**
Pinar Muyan-Özçelik, Vladimir Glavtchev, Jeffrey M. Ota and John D. Owens
- **Wavelet-Based Inpainting for Object Removal from Image Series**
Sebastian Vetter, Marcin Grzegorzek and Dietrich Paulus
- **An Empirical Comparison of Inference Algorithms for Graphical Models with Higher Order Factors Using OpenGM**
Björn Andres, Jörg H. Kappes, Ullrich Köthe, Christoph Schnörr and Fred A. Hamprecht
- **N-View Human Silhouette Segmentation in Cluttered, Partially Changing Environments**
Tobias Feldmann, Björn Scheuermann, Bodo Rosenhahn and Annika Wörner

- **Nugget-Cut: A Segmentation Scheme for Spherically- and Elliptically-Shaped 3D Objects**
Jan Egger, Miriam H. A. Bauer, Daniela Kuhnt, Barbara Carl, Christoph Kappus, Bernd Freisleben and Christopher Nimsky
- **Benchmarking Stereo Data (Not the Matching Algorithms)**
Ralf Haeusler and Reinhard Klette
- **Robust Open-Set Face Recognition for Small-Scale Convenience Applications**
Hua Gao, Hazim Kemal Ekenel, Rainer Stiefelhagen
- **Belief Propagation for Improved Color Assessment in Structured Light**
Christoph Schmalz and Elli Angelopoulou
- **3D Object Detection Using a Fast Voxel-Wise Local Spherical Fourier Tensor Transformation**
Henrik Skibbe, Marco Reisert, Thorsten Schmidt, Klaus Palme, Olaf Ronneberger and Hans Burkhardt
- **Matte Super-resolution for Compositing**
Sahana M. Prabhu and Ambasamudram N. Rajagopalan
- **An Improved Histogram of Edge Local Orientations for Sketch-Based Image Retrieval**
Jose M. Saavedra and Benjamin Bustos
- **A Novel Curvature Estimator for Digital Curves and Images**
Oliver Fleischmann, Lennart Wietzke and Gerald Sommer
- **Local Regression based Statistical Model Fitting**
Matthias Amberg, Marcel Lüthi, and Thomas Vetter
- **Semi-Supervised Learning of Edge Filters for Volumetric Image Segmentation**
Margret Keuper, Robert Bensch, Karsten Voigt, Alexander Dovzhenko, Klaus Palme, Hans Burkhardt and Olaf Ronneberger

- **Realtime 3D Motion Estimation on Graphics Hardware**
Jens Rannacher
DAGM Young Researchers' Forum 2010
- **Visual Knowledge Transfer Using Semantic Relatedness**
Marcus Rohrbach
DAGM Young Researchers' Forum 2010
- **Image-Based 3D Documentation in Archeology**
Robert Wulff
DAGM Young Researchers' Forum 2010

Oral Session

Motion

17:00 – 18:15

Session chair: Joachim Weickert

- **Geometrically Constrained Level Set Tracking for Automotive Applications**
Esther Horbert, Dennis Mitzel and Bastian Leibe
- **Interactive Motion Segmentation**
Claudia Nieuwenhuis, Benjamin Berkels, Martin Rumpf and Daniel Cremers
- **On-line Multi-View Forests for Tracking**
Christian Leistner, Martin Godec, Amir Saffari and Horst Bischof

Member Assembly of the DAGM e.V.

18:15

All members of the DAGM e.V. are cordially invited to attend the meeting. Details are available in a separate invitation sent out by the chairman of DAGM.

Invited Talk

09:00 – 10:00

Human Focussed Video Analysis

Andrew Zisserman, University of Oxford

Session chair: Bernt Schiele

Determining the pose and actions of humans is one of the central problems of image and video analysis. The visual problem is challenging because humans are articulated animals, wear loose and varying clothing, self-occlude themselves, and stand against difficult and confusing backgrounds. Nevertheless, the area has seen great progress over the last decade due to advances in modelling, learning, and in the efficiency of algorithms.

We describe approaches for recognizing human actions and inter-actions, and for determining 2D upper body pose. Results will be shown for various TV videos and feature films, and applications demonstrated for (i) learning the gestures of sign language, and (ii) pose based video retrieval.

Coffee Break

10:00 – 10:30

Oral Session

10:30 – 12:15

Low-Level Vision and Features

Session chair: Hans Burkhardt

- **Probabilistic Multi-Class Scene Flow Segmentation for Traffic Scenes**
Alexander Barth, Jan Siegemund, Annemarie Meißner, Uwe Franke, Wolfgang Förstner
- **A Stochastic Evaluation of the Contour Strength**
Fernand Meyer and Jean Stawiaski

- **Incremental Computation of Feature Hierarchies**
Michael Felsberg
- **From Box Filtering to Fast Explicit Diffusion**
Sven Grewenig, Joachim Weickert and Andrés Bruhn

Lunch

12:15 – 13:45

Program committee meeting (for PC members only)

Oral Session

13:45 - 15:30

Surfaces and Materials

Session chair: Fred Hamprecht

- **High-Resolution Object Deformation Reconstruction with Active Range Camera**
Andreas Jordt, Ingo Schiller, Johannes Bruenger and Reinhard Koch
- **Selection of an Optimal Polyhedral Surface Model Using the Minimum Description Length Principle**
Tilman Wekel and Olaf Hellwich
- **Learning of Optimal Illumination for Material Classification**
Markus Jehle, Christoph Sommer and Bernd Jähne

Coffee Break

15:30 – 16:15

Program committee meeting (for PC members only)

Awards and Closing

16:15 – 16:45

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33rd Annual Symposium of the German Association for Pattern Recognition
August 30th – September 2nd, 2011

DAGM 2010 SCHEDULE

Tuesday
September 21
Fraunhofer IGD

Wednesday
September 22
Darmstadtium

Thursday
September 23
Darmstadtium

Friday
September 24
Darmstadtium

08:00 am				
09:00 am				
10:00 am	Morning Tutorials	Workshop	Welcome	
			Olympus Session Coffee Break	Invited Talk
11:00 am			Oral Session	Oral Session
Noon			PC Meeting	PC Meeting
01:00 pm	Lunch		Lunch	Lunch
02:00 pm			Invited Talk	
03:00 pm	Afternoon Tutorials	Workshop		Oral Session
04:00 pm			Poster Session	Poster Session
05:00 pm			Oral Session	Oral Session
06:00 pm				DAGM Member Assembly
07:00 pm	Welcome Reception			
08:00 pm				
09:00 pm			Conference Dinner (Orangerie)	
10:00 pm				
11:00 pm				
Midnight				