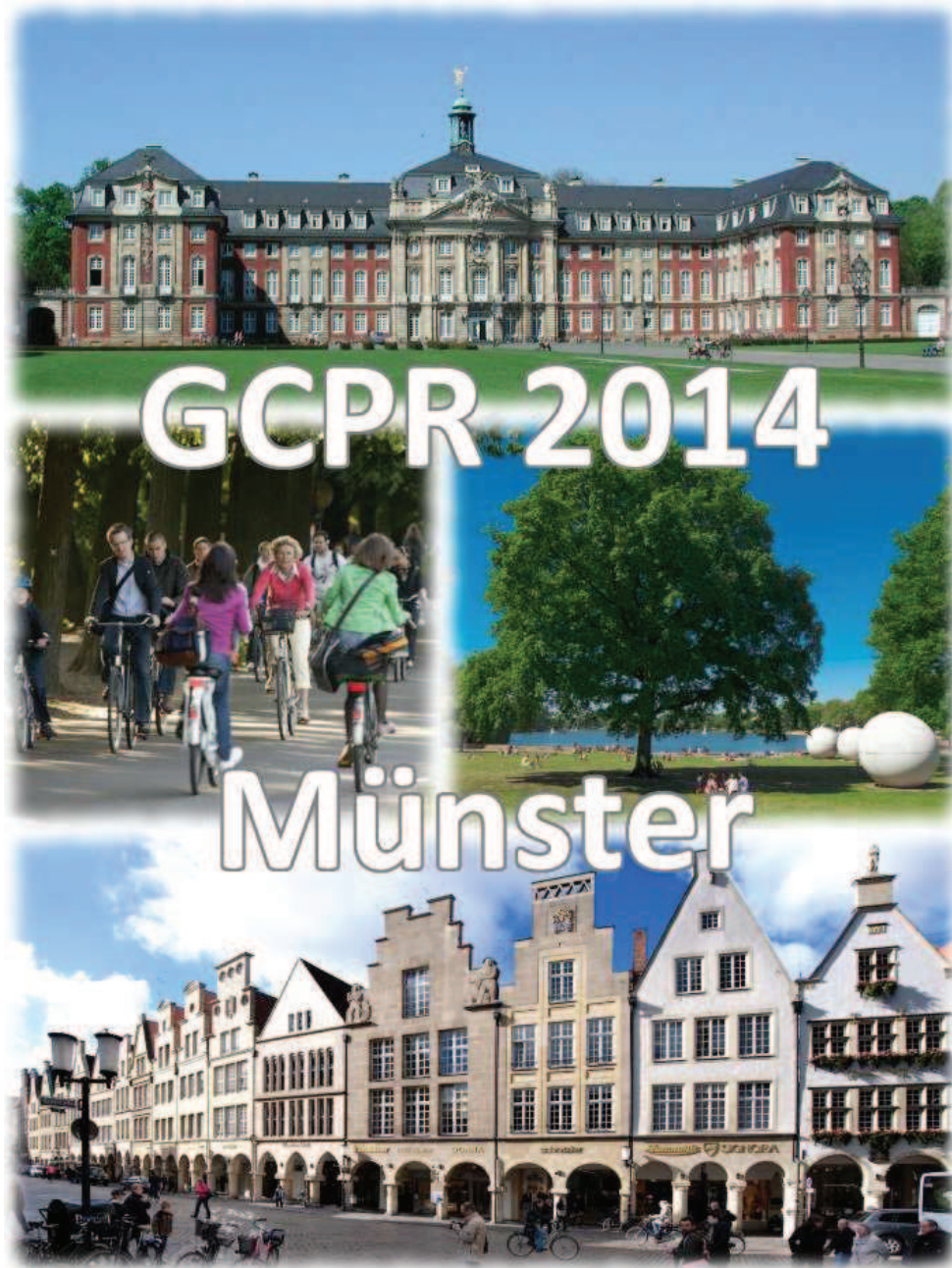


GCPR 2014

36th German Conference on Pattern Recognition



September 2-5, 2014
Münster (North Rhine-Westphalia), Germany

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36th German Conference on Pattern Recognition

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Münster, Germany

Hosted by:

Institute of Computer Science
University of Münster, Germany

In Cooperation with:



Sponsored by:



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Committees

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C³V (Challenges and Chances for Computer Vision) Tutorials

Tutorial 1

The Hitchhiker's Guide to Biomedical Imaging

Daniel Tenbrinck

École Nationale Supérieure d'Ingénieurs de Caen, France

Biomedical image analysis is an important field in life sciences which strongly depends on the advances in image processing and computer vision. Due to the non-standard imaging techniques used for data acquisition there are a variety of challenging problems to face when working with biomedical data. In order to master typical image analysis tasks, e.g., segmentation or motion estimation, one has to investigate innovative ways to describe the given data and subsequently propose feasible solutions applicable in basic research and daily clinical routine.

This tutorial aims to provide an overview of the challenges of biomedical imaging for computer vision and simultaneously give insightful ideas to deal with problems such as physical noise perturbations, structural artifacts, inhomogeneity and fuzzy edges. We provide a tour through the universe of biomedical imaging and head on this way for popular imaging modalities and their respective characteristics, e.g., ultrasound imaging, positron emission tomography, or fluorescence microscopy. Generally applicable techniques are illustrated on real application data. This tutorial is meant as a useful guide for both researchers already working in this expanding field of computer vision and those who dare to explore this fascinating topic for the first time.

Tutorial 2

Throwing Computer Vision Overboard: How to Handle Underwater Light Attenuation and Refraction

Anne Jordt

University of Kiel, Germany

Kevin Köser

GEOMAR Helmholtz Centre for Ocean Research, Germany

Besides professional survey cameras mounted to autonomous or remotely operated underwater vehicles, there is now a huge variety of DSLRs or action cameras for divers or even waterproof cell phones for taking photos or videos underwater. It might seem at first sight that putting a camera in a waterproof housing (with a glass port to look outside) would already allow to use it "in the usual way" e.g. for measuring, mapping and reconstruction.

However, there are several challenges that have to be addressed. First of all, due to different optical densities of air, glass and water, light rays can be refracted at the interface ("port"), which then violates the pinhole camera model. On top, the port can act as a lens itself and change the geometry of the focus surface. Second, the apparent transparency of water is valid merely for the blue/green parts of the visible spectrum, while red, infrared and virtually all other electromagnetic radiation is significantly attenuated or blocked completely, leading to distance-dependent color corruption. On top, back scattering and forward scattering of light can degrade image quality if not considered properly.

In this tutorial we provide an overview of the challenges and review approaches to solve them, in particular focused to geometric problems related to imaging models, single camera based structure from motion and mapping. We will start from the basics such that everybody should be able to follow, however for the geometric parts, attendees should have a basic understanding of classical multiple view geometry (standard camera calibration, projection matrix, epipolar geometry and ideally structure from motion).

Invited Talks

Invited Talk 1 Medical Image Computing

Ron Kikinis
Harvard Medical School, Boston, USA
Fraunhofer MEVIS
University of Bremen

Abstract

The presentation will provide an overview over the field of medical image computing.

- What is Medical Image Computing (MIC)?
- Uses of MIC
- Neuroscience
- Radiology
- Interventions
- Technological foundations of MIC

Short biography

Dr. Kikinis is the founding Director of the Surgical Planning Laboratory, Department of Radiology, Brigham and Women's Hospital, Harvard Medical School, Boston, MA, and a Professor of Radiology at Harvard Medical School. This laboratory was founded in 1990. He is the 2009 recipient of the MICCAI Society "Enduring Impact Award". On February 24, 2010 he was appointed the Robert Greenes Distinguished Director of Biomedical Informatics in the Department of Radiology at Brigham and Women's Hospital.

Dr. Kikinis is the Principal Investigator of the National Alliance for Medical Image Computing (NA-MIC, a National Center for Biomedical Computing, an effort which is part of the NIH Roadmap Initiative), and of the Neuroimage Analysis Center (NAC, a Biomedical Technology Resource Center funded by NIBIB). He is also the Research Director of the National Center for Image Guided Therapy (NCIGT), which is jointly sponsored by NIBIB and NCI and co-Director of the IGT program at CIMIT. He has served and is serving as member of external advisory boards for a variety of centers and research efforts. He is the Principal Investigator of 3D Slicer, a software platform for single subject image analysis and visualization.

During the mid-80's, Dr. Kikinis developed a scientific interest in image processing algorithms and their use for extracting relevant information from medical imaging data. Since then, this topic has matured from a fairly exotic topic to a field of science. This is due to the explosive increase of both the quantity and complexity of imaging data. Dr. Kikinis has led and has participated in research in different areas of science. His activities include technological research (segmentation, registration, visualization, high performance computing), software system development, and biomedical research in a variety of biomedical specialties. The majority of his research is interdisciplinary in nature and is conducted by multidisciplinary teams. The results of his research have been reported in a variety of peer-reviewed journal articles. He is the author and co-author of more than 290 peer-reviewed articles.

Before joining Brigham & Women's Hospital in 1988, he trained as a resident in radiology at the University Hospital in Zurich, and as a researcher in computer vision at the ETH in Zurich, Switzerland. He received his M.D. degree from the University of Zurich, Switzerland, in 1982.

Invited Talk 2

Visual Computing Technologies for Entertainment

Markus Gross
ETH, Zurich, Switzerland
The Walt Disney Company

Abstract

Disney Research Zurich started in 2008. By now, 70 researchers conduct over 100 distinct research projects in the wider field of visual computing including graphics, computer animation, facial modeling, video processing, stereo 3D, computational materials, and wireless communication. In this talk I will give an overview of our research and I will present a few projects in greater detail. I will highlight the underlying scientific challenges and explain the potential of the results for the entertainment industry. Use cases include film production and postproduction, television, consumer products, and interactive applications. I will demonstrate how research in visual computing will drive the entertainment business of the future.

Short biography

Markus Gross is a Professor of Computer Science at the Swiss Federal Institute of Technology Zurich (ETH), head of the Computer Graphics Laboratory, and the Director of Disney Research, Zürich. He joined the ETH Computer Science faculty in 1994. His research interests include physically based modeling, computer animation, immersive displays, and video technology. Before joining Disney, Gross was director of the Institute of Computational Sciences at ETH. He received a master of science in electrical and computer engineering and a PhD in computer graphics and image analysis, both from Saarland University in Germany in 1986 and 1989. Gross serves on the boards of numerous international research institutes, societies, and governmental organizations. He received the Technical Achievement Award from EUROGRAPHICS in 2010 and the Swiss ICT Champions Award in 2011. He is a fellow of the ACM and of the EUROGRAPHICS Association and a member of the German Academy of Sciences Leopoldina as well as the Berlin-Brandenburg Academy of Sciences and Humanities. He received a Technical Achievement Award from the Academy of Motion Picture Arts and Sciences in 2013. Prior to his involvement in Disney Research he cofounded Cyfex AG, Novodex AG, LiberoVision AG, and Dybuster AG.

Invited Talk 3
The Geometry of Communication in Networks

Ernesto Estrada
University of Strathclyde, Glasgow, UK

Abstract

I will start by motivating and defining the concept of network communicability. I then will illustrate some of the paradoxes that arise when the 'information' is assumed to flow through the shortest paths in real-world complex networks. This will follow by the introduction of a function that accounts for the goodness of communication among a pair of nodes in the network. I will prove that this corresponds to an Euclidean distance between the corresponding nodes. I will then introduce the concept of angles of communicability and will illustrate some of its mathematical properties. The talk will continue by proving that the communicability distances/angles induces an embedding of a network into a high-dimensional sphere (hypersphere). I will then illustrate how the communicability distance/angles can be applied to solve problems in the analysis of real-world complex networks.

Short biography

Ernesto Estrada is full professor and Chair in Complexity Sciences at the Department of Mathematics and Statistics, University of Strathclyde, Glasgow, UK. He has proven experience in developing and applying physico-mathematical tools for studying complex networks. Prof. Estrada has published more than 160 scientific papers, which have received more than 6,100 citations and he has an h-index of 46. He serves as the Editor-in-Chief of the Journal of Complex Networks, published by Oxford University Press (OUP). He maintains strong collaborations with applied mathematicians and physicists in several universities across the World. Prof. Estrada has been plenary speaker in several major international conferences, including the 2012 SIAM Annual Meeting. He has taught courses about complex networks at Strathclyde, AIMS (South Africa) and Emory University, where he is a Fellow of the Institute of Quantitative Theory and Methods. His book *The Structure of Complex Networks*, published by OUP, is a reference text in many courses at different universities. Prof. Estrada has given seminars and colloquia in many universities of Europe, Asia and America.

Tutorials/Workshop at a Glance

Tuesday, September 2nd

08:15	Registration
09:00 – 12:30	Tutorial 1: The Hitchhiker's Guide to Biomedical Imaging
09:00 – 12:30	Workshop: New Challenges in Neural Computation and Machine Learning
12:30 – 14:00	Lunch
14:00 – 17:30	Tutorial 2: Throwing Computer Vision Overboard: How to Handle Underwater Light Attenuation and Refraction
14:00 – 17:45	Workshop: New Challenges in Neural Computation and Machine Learning
19:00	Welcome Reception

Tutorials/Workshop Program in Detail

Tuesday, September 2nd

8:15 **Registration**

Tutorial 1:	The Hitchhiker's Guide to Biomedical Imaging
9:00 – 12:30	Daniel Tenbrink

Tutorial 2:	Throwing Computer Vision Overboard: How to Handle Underwater Light Attenuation and Refraction
14:00 – 17:30	Anne Jordt and Kevin Köser

Workshop:	New Challenges in Neural Computation and Machine Learning
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Time and Dynamics in Neural Networks

9:00 – 10:15

Sparse Spectrum Hidden Markov Models of Metastable Systems

Hao Wu

The impact of frequency distributions in a perceptual grouping oscillator network

Martin Meier, Robert Haschke and Helge J. Ritter

Spiking network simulations

Tim U. Krause, Phil Y. Schrör, and Rolf P. Würtz

10:15 **Coffee Break**

Feature Detection

10:40 – 11:30

Role of competition in robustness under loss of information in feature detectors

Arash Kermani Kolankeh, Michael Teichmann and Fred Hamker

Learning Transformation Invariance for Object Recognition

Jens Hocke, Thomas Martinetz

Keynote Talk: *Learning in the Model Space for Temporal Data*

11:30 – 12:30

Peter Tino

12:30 Lunch

Keynote Talk: *Prototype-based classifiers and their application in the life sciences*

14:00 – 15:00

Michael Biehl

Machine learning challenges

15:00 – 15:50

Case Study: Behavioral Prediction of Future Revenues in Freemium Games

Joao Alves, Sascha Lange, Michael Lenz, and Martin Riedmiller

Learning is hard work: Detecting dynamic obstacles in occupancy grid maps

Sven Hellbach, Frank Bahrman, Sabrina Keil, Hans-Joachim Boehme

15:50 Coffee Break and Meeting of the GI Fachgruppe Neural Networks

Machine Learning and External Knowledge

16:30 – 17:35

Transfer Learning without given Correspondences

Patrick Blöbaum and Alexander Schulz

Enforcing interpretability in classification by modelling constrained optimization problems

Barbara Hammer, David Nebel, Martin Riedel, Thomas Villmann

Prior knowledge for Core Vector Data Description

Frank-Michael Schleif, Xibin Zhu, Barbara Hammer

17:35 **Nomination of the Best Presentation Award and Closing**

Main Conference at a Glance

Wednesday, September 3rd

08:15	Registration
09:00 – 09:20	Opening
09:20 – 10:00	German Pattern Recognition Award
10:00 – 10:50	Oral session 1: Variational Models for Depth and Flow
10:50 – 11:15	Coffee Break
11:15 – 12:30	Oral session 2: Reconstruction
12:30 – 14:00	Lunch
14:00 – 15:00	Invited Talk: Ron Kikinis
15:00 – 15:50	Oral session 3: Bio-Informatics
15:50 – 16:20	Coffee Break
16:00 – 18:00	Poster session 1 and Young Researchers Forum
17:30 – 18:30	DAGM Meeting
18:30 – 20:00	City Tour

Thursday, September 4th

08:30	Registration
09:00 – 10:00	Invited Talk: Markus Gross
10:00 – 10:50	Oral session 4: Image Processing & Analysis
10:50 – 11:15	Coffee Break
11:15 – 12:30	Oral session 5: Feature Computation
12:30 – 14:00	Lunch
14:00 – 15:15	Oral session 6: Video Interpretation
15:15 – 15:45	Coffee Break
15:45 – 16:35	Oral session 7: Segmentation & Labeling
16:35 – 18:20	Poster session 2 and Young Researchers Forum
18:30	Bus Departure to Conference Dinner
19:00 – 22:30	Conference Dinner

Friday, September 5th

08:30	Registration
09:00 – 10:00	Invited Talk: Ernesto Estrada
10:00 – 10:50	Oral session 8: Deep Learning & Segmentation
10:50 – 11:15	Coffee Break
11:15 – 12:30	Oral session 9: Human Pose & People Tracking
12:30 – 14:00	Lunch
14:00 – 15:15	Oral session 10: Interpolation & Inpainting
15:15 – 15:30	Coffee Break
15:30 – 16:00	GCPR Awards, Closing, and Farewell Refreshments

Main Conference Program in Detail

Remark: An Overview of the timetable can be found on the last page of this brochure.

Wednesday, September 3rd

- 8:15 **Registration**
- 9:00 **Opening**
- 9:20 **German Pattern Recognition Award**

Oral Session 1:	Variational Models for Depth and Flow
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10:00 – 10:50 Chair: Joachim Buhmann

10:00 ***Scene Flow Estimation from Light Fields via the Preconditioned Primal-Dual Algorithm***

Stefan Heber, Thomas Pock

10:25 ***Introducing more Physics into Variational Depth-from-Defocus***

Nico Persch, Christopher Schroers, Simon Setzer, Joachim Weickert

10:50 Coffee Break

Oral Session 2:	Reconstruction
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11:15 – 12:30 Chair: Jürgen Gall

11:15 ***High-Resolution Stereo Datasets with Subpixel-Accurate Ground Truth***

Daniel Scharstein, Heiko Hirschmüller, York Kitajima, Greg Krathwohl, Nera Nesic, Xi Wang, Porter Westling

11:40 ***Semi-Global Matching: a principled derivation in terms of Message Passing***

Amnon Drory, Carsten Haubold, Shai Avidan, Fred A. Hamprecht

12:05 ***Submap-based Bundle Adjustment for 3D Reconstruction from RGB-D Data***

Robert Maier, Jürgen Sturm, Daniel Cremers

12:30 Lunch

Wednesday, September 3rd

Invited Talk: Ron Kikinis, *Medical Image Computing*

14:00 – 15:00

Chair: Joachim Hornegger

Oral Session 3: Bio-Informatics

15:00 – 15:50

Chair: Joachim Hornegger

15:00 ***A Hierarchical Bayesian Approach for Unsupervised Cell Phenotype Clustering***

Mahesh Venkata Krishna, Joachim Denzler

15:25 ***Information Bottleneck for Pathway-centric Gene Expression Analysis***

David Adametz, Melanie Rey, Volker Roth

15:50 Coffee Break

Poster Session 1 and Young Researchers Forum

16:00 – 18:00

1 ***Probabilistic Progress Bars***

Martin Kiefel, Christian Schuler, Philipp Hennig

2 ***Wide Base Stereo with Fisheye Optics: A Robust Approach for 3D Reconstruction in Driving Assistance***

Jose Esparza, Michael Helmle, Bernd Jähne

3 ***Detection and Segmentation of Clustered Objects by Using Iterative Classification, Segmentation, and Gaussian Mixture Models and Application to Wood Log Detection***

Christopher Herbon, Klaus Tönnies, Bernd Stock

4 ***Tracking-Based Visibility Estimation***

Stephan Lenor, Johannes Martini, Bernd Jähne, Ulrich Stopper, Stefan Weber, Florian Ohr

5 ***Predicting the Influence of Additional Training Data on Classification Performance for Imbalanced Data***

Stephen Kockentiedt, Klaus Tönnies, Erhardt Gierke

6 ***Signal/Background Classification of Time Series for Biological Virus Detection***

Dominic Siedhoff, Hendrik Fichtenberger, Pascal Libuschewski, Frank Weichert, Christian Sohler, Heinrich Müller

7 ***Efficient Hierarchical Triplet Merging for Camera Pose Estimation***

Helmut Mayer

8 ***Lens-based Depth Estimation for Multi-Focus Plenoptic Cameras***

Oliver Fleischmann, Reinhard Koch

9 ***Efficient Metropolis-Hasting Image Analysis for the Location Of Vascular Entity***

Henrik Skibbe, Marco Reisert, Shin Ishii

10 ***Automatic Determination of Anatomical Correspondences for Multimodal Field of View Correction***

Hima Patel, Karthik Gurumoorthy, Seshadri Thiruvankadam

11 ***Accurate Detection in Volumetric Images using Elastic Registration based Validation***

Dominic Mai, Jasmin Dürr, Klaus Palme, Olaf Ronneberger

12 ***A Human Factors Study of Graphical Passwords using Biometrics***

Benjamin S. Riggan, Wesley E. Snyder, Xiaogang Wang, Jing Feng

13 ***Pedestrian Orientation Estimation***

Joe Lallemand, Alexandra Ronge, Magdalena Szczot, Slobodan Ilic

14 ***Distance-based Descriptors and their Application in the Task of Object Detection***

Radovan Fusek, Eduard Sojka

- 15 ***Hough Forests Revisited: An Approach to Multiple Instance Tracking from Multiple Cameras***
Georg Poier, Samuel Schulter, Sabine Sternig, Peter M. Roth, Horst Bischof
- 16 ***Graph-Based and Variational Minimization of Statistical Cost Functionals for 3D Segmentation of Aortic Dissections***
Cosmin Adrian Morariu, Tobias Terheiden, Daniel Sebastian Dohle, Konstantinos Tsagakis, Josef Pauli
- 17 ***Automatic 3D Reconstruction of Indoor Manhattan World Scenes using Kinect Depth Data (YRF)***
Dominik Wolters
- 18 ***Can Cosegmentation Improve the Object Detection Quality? (YRF)***
Timo Lüddecke
- 19 ***Multi-Atlas Based Segmentation of Corpus Callosum on MRIs of Multiple Sclerosis Patients (YRF)***
Anneke Meyer
- 20 ***Committees of deep feedforward networks trained with few data (YRF)***
Bogdan Miclut

Thursday, September 4th

8:30 **Registration**

Invited Talk: **Markus Gross, *Visual Computing Technologies for Entertainment***

9:00 – 10:00

Chair: Reinhard Koch

Oral Session 4: **Image Processing & Analysis**

10:00 – 10:50

Chair: Reinhard Koch

10:00 ***Guided Image Super-Resolution: A New Technique for Photogeometric
Super-Resolution in Hybrid 3-D Range Imaging***

Florin C. Ghesu, Thomas Köhler, Sven Haase, Joachim Hornegger

10:25 ***Image Descriptors based on Curvature Histograms***

Philipp Fischer, Thomas Brox

10:50 Coffee Break

Oral Session 5: **Feature Computation**

11:15 – 12:30

Chair: Bodo Rosenhahn

11:15 ***Robust PCA: Optimization of the Robust Reconstruction Error on the Stiefel
Manifold***

Anastasia Podosinnikova, Simon Setzer, Matthias Hein

11:40 ***An $O(n \log n)$ Cutting Plane Algorithm for Structured Output Ranking***

Matthew B. Blaschko, Arpit Mittal, Esa Rahtu

12:05 ***Exemplar-specific Patch Features for Fine-grained Recognition***

Alexander Freytag, Erik Rodner, Trevor Darrell, Joachim Denzler

12:30 Lunch

Oral Session 6:

Video Interpretation

14:00 – 15:15

Chair: Joachim Denzler

14:00 ***Motion Segmentation with Weak Labeling Priors***
Hodjat Rahmati, Ralf Dragon, Ole Morten Aamo, Luc van Gool, Lars Adde

14:25 ***Object-level Priors for Stixel Generation***
Marius Cordts, Lukas Schneider, Markus Enzweiler, Uwe Franke, Stefan Roth

14:50 ***Coherent Multi-Sentence Video Description with Variable Level of Detail***
Anna Rohrbach, Marcus Rohrbach, Wei Qiu, Annemarie Friedrich, Manfred Pinkal, Bernt Schiele

15:15 Coffee Break

Oral Session 7:

Segmentation & Labeling

15:45 – 16:35

Chair: Matthias Hein

15:45 ***Joint supervised – unsupervised segmentation***
Thorben Kroeger, Jörge H. Kappes, Thorsten Beier, Ullrich Koethe, Fred A. Hamprecht

16:10 ***Mind the gap: modeling local and global context in (road) networks***
Javier A. Montoya-Zegarra, Jan D. Wegner, Lubor Ladicky, Konrad Schindler

Poster Session 2 and Young Researchers Forum

16:35 – 18:20

1 ***Encoding Spatial Arrangements of Visual Words for Rotation-invariant Image Classification***
Hafeez Anwar, Sebastian Zambanini, Martin Kampel

2 ***Mask-specific inpainting with deep neural networks***
Rolf Köhler, Christian Schuler, Bernhard Schölkopf, Stefan Harmeling

- 3 ***Detection of Clustered Objects in Sparse Point Clouds Through 2D Classification and Quadric Filtering***
Christopher Herbon, Benjamin Otte, Klaus Tönnies, Bernd Stock
- 4 ***On the Second Order Statistics of Essential Matrix Elements***
M. Hossein Mirabdollah, Bärbel Mertsching
- 5 ***Geometric Reasoning for Uncertain Observations of Man-Made Structures***
Jochen Meidow
- 6 ***Locality Sensitive Hashing using GMM***
Fabian Schmieder, Bin Yang
- 7 ***Coded Aperture Flow***
Anita Sellent, Paolo Favaro
- 8 ***Kernel Density Estimation for Post Recognition Score Analysis***
Sebastian Sudholt, Leonard Rothacker, Gernot A. Fink
- 9 ***Recognizing Scene Categories of Historical Postcards***
Rene Grzeszick, Gernot A. Fink
- 10 ***A Stochastic Late Fusion Approach to Human Action Recognition in Unconstrained Images and Videos***
Muhammad Shahzad Cheema, Abdalrahman Eweiwi, Christian Bauckhage
- 11 ***A Dense Pipeline for 3D Reconstruction from Image Sequences***
Timm Schneevoigt, Christopher Schroers, Joachim Weickert
- 12 ***Active Online Learning for Interactive Segmentation Using Sparse Gaussian Processes***
Rudolph Triebel, Jan Stühmer, Mohamed Souiai, Daniel Cremers
- 13 ***Multi-View Tracking of Multiple Targets with Dynamic Cameras***
Till Kroeger, Ralf Dragon, Luc van Gool

- 14 ***Quality Based Information Fusion in Fully Automatized Celiac Disease Diagnosis***
Michael Gadermayr, Andreas Uhl, Andreas Vecsei
- 15 ***Fine-grained Activity Recognition with Holistic and Pose based Features***
Leonid Pishchulin, Mykhaylo Andriluka, Bernt Schiele
- 16 ***Obtaining 2D Surface Characteristics from Specular Surfaces***
Mathias Ziebarth, Markus Vogelbacher, Sabine Olawsky, Jürgen Beyerer
- 17 ***Learning Must-Link Constraints for Video Segmentation based on Spectral Clustering***
Anna Khoreva, Fabio Galasso, Matthias Hein, Bernt Schiele
- 18 ***Gas Bubble Shape Measurement and Analysis (YRF)***
Claudius Zelenka
- 19 ***Scene Segmentation in Adverse Vision Conditions (YRF)***
Evgeny Levinkov
- 20 ***Learning Multi-Scale Representations for Material Classification (YRF)***
Wenbin Li
- 21 ***Casting Random Forests as Artificial Neural Networks (and Profiting from It) (YRF)***
Johannes Welbl

Friday, September 5th

8:30 **Registration**

Invited Talk: Ernesto Estrada, *The Geometry of Communication in Networks*

9:00 – 10:00	Chair: Xiaoyi Jiang
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10:00 – 10:50	Chair: Xiaoyi Jiang
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Convolutional Decision Trees for Feature Learning and Segmentation

Dmitry Laptev, Joachim M. Buhman

1035 *A Deep Variational Model for Image Segmentation*

Rene Ranftl, Thomas Pock

10:50	Coffee Break
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Oral Session 9: Human Pose & People Tracking

11:15 – 12:30 Chair: Dietrich Paulus

Test-time Adaptation for 3D Human Pose Estimation

Sikandar Amin, Philipp Müller, Andreas Bulling, Mykhaylo Andriluka

Efficient Multiple People Tracking using Minimum Cost Arborescences

Roberto Henschel, Laura Leal-Taixe, Bodo Rosenhahn

12:05 ***Capturing Hand Motion with an RGB-D Sensor, Fusing a Generative Model with Salient Points***

Dimitrios Tzionas, Abhilash Srikantha, Pablo Aponte, Jürgen Gall

12:30	Lunch
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Friday, September 5th

Oral Session 10:

Interpolation and Inpainting

14:00 – 15:15

Chair: Olaf Ronneberger

14:00 ***Flow and Color Inpainting for Video Completion***

Michael Strobel, Julia Diebold, Daniel Cremers

14:25 ***Spatial and Temporal Interpolation of Multi-View Image Sequences***

Tobias Gurdan, Martin R. Oswald, Daniel Gurdan, Daniel Cremers

14:50 ***Pose Normalization for Eye Gaze Estimation and Facial Attribute Description
from Still Images***

Bernhard Egger, Sandro Schönborn, Andreas Forster, Thomas Vetter

15:15 Coffee Break

15:30 **GCPR Awards, Closing, and Farewell Refreshments**

Notes

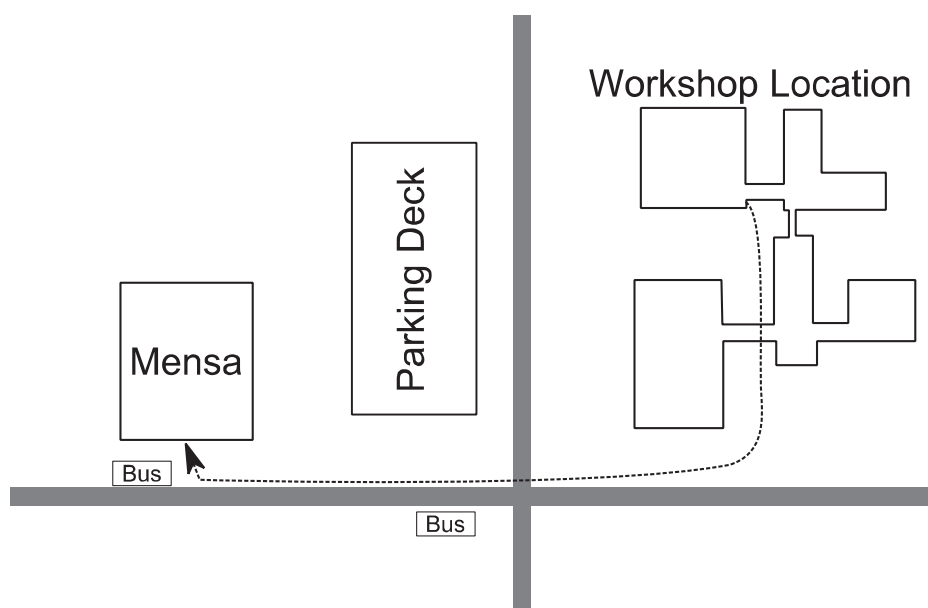
Notes

Additional Information: Workshop and Tutorials

- Arrival by bus: The next bus stop is called “Coesfelder Kreuz”.
- Wireless internet access is available. Check the instruction sheet in your bag for technical details.

Lunch break:

- There is the possibility to take lunch at the Mensa next to the workshop location. Payment in cash is possible. See map below for directions.



Welcome Reception (for main conference and passport registrations):

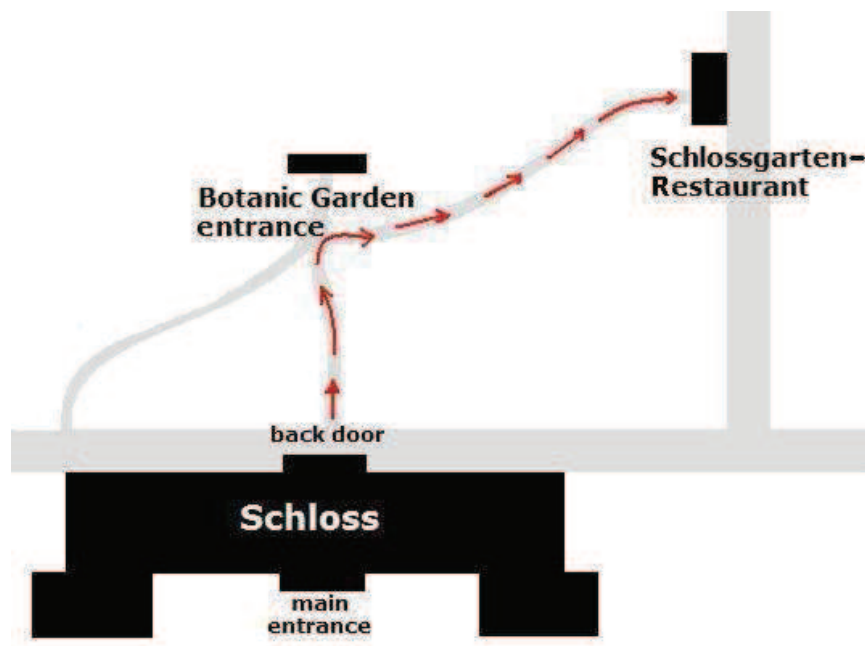
- The Reception will take place in the Schlossgarten Restaurant.
- To reach the Schloss, leave the workshop location, cross the Einsteinstraße and walk to the left. The Schlossplatz will appear after about 1 km on the right side.
- Take a look on the next page for a bus stop and the way from the Schloss to the restaurant.

Additional Information: Main Conference

- Arrival by bus: The next bus stops are “Landgericht”, “Schlossplatz”, “Neutor”.
- Lecture Hall: Aula in the 1st floor of the Schloss.
- Senatssaal: In the 1st floor. It offers some space to sit for a break. You can also charge your devices there.
- Foyer: Coffee breaks and poster sessions.
- Wireless internet access is available in the Schloss. Check the instruction sheet in your bag for technical details.

Social events:

- Tuesday: **Welcome reception.**
- Wednesday: **City tour.** Gathering will be in front of the Schloss at 6:30 pm.
- Thursday: **Conference dinner.** Gathering will be in front of the Schloss at 6:30pm. The dinner ticket is inside the name badge.
- Wednesday – Friday: **Lunch** will be served in the Schlossgarten Restaurant. See map below for directions. The name badge serves as the lunch ticket.



The address of conference dinner below is listed for your convenience in case you miss the organized bus transfer at 6:30 pm.

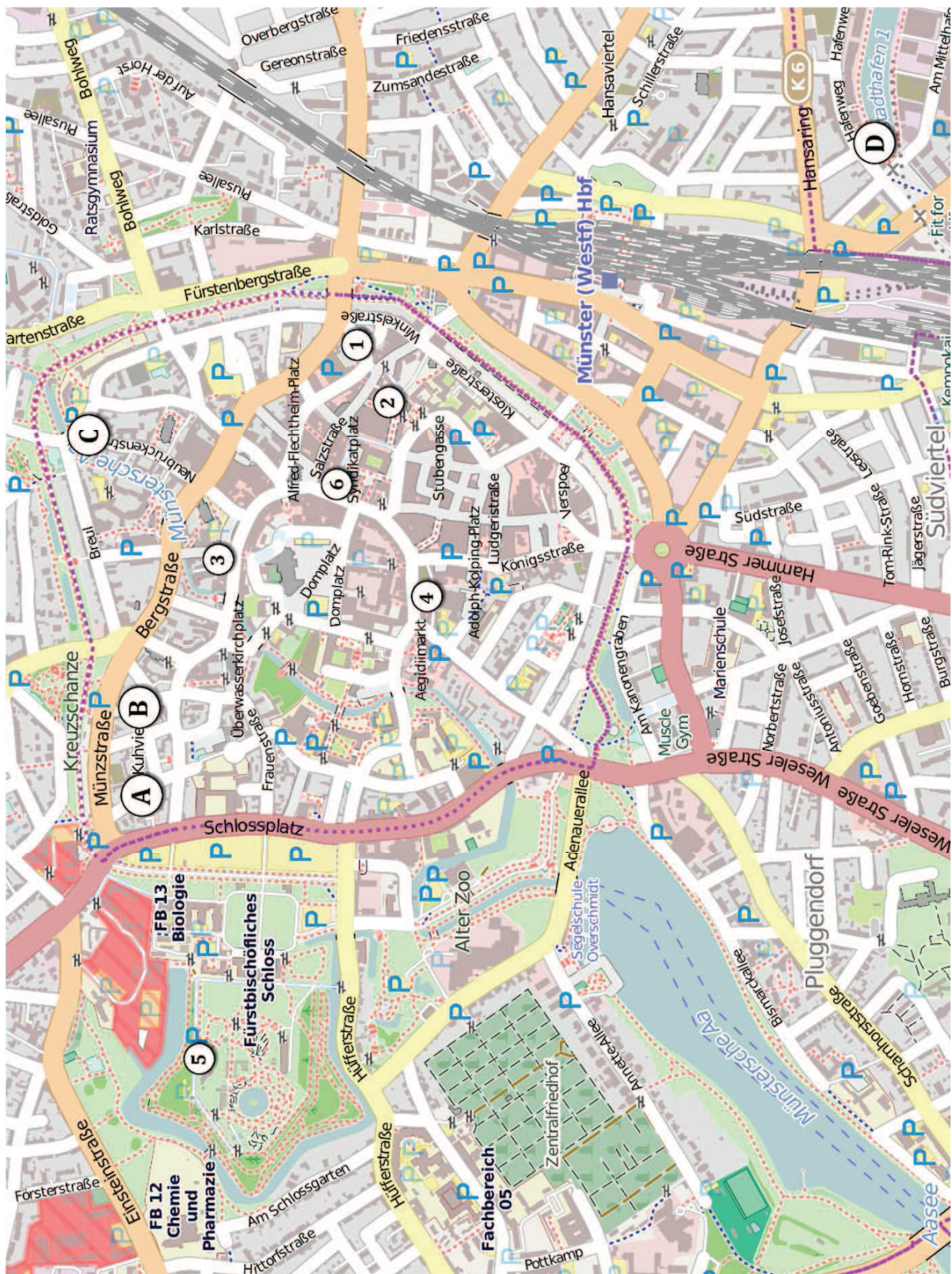
Speicher 10
An den Speichern 10
48157 Münster

By Bus: Line 9 (Direction: Coerde), bus stop: Speicherstadt

Areas

Selected Restaurants

- | | |
|---|---|
| <p>A Jüdefelderstraße:
Bars, Pubs, etc.</p> <p>B Rosenplatz, Kreuzstraße:
Bars, Pubs, Restaurants, including:
<i>Pinkus</i>, Kreuzstr. 4-10
Traditional dishes from Münster, local beer
<i>Cavete</i>, Kreuzstraße 37/38
Oldest student pub of Münster, offers also some food
<i>Drübbelken</i>, Buddenstraße 14
Westphalian cuisine</p> <p>C Neubrückenstraße:
Several restaurants, including:
<i>Pham's</i>, Neubrückenstraße 35
Pan-Asian cuisine
<i>America Latina</i>, Neubrückenstraße 50
Argentinian steaks
<i>Pasta e Basta</i>, Neubrückenstraße 35-37
Italian cuisine</p> <p>D Harbor:
Stylish restaurants and bars</p> | <p>1 <i>Altes Gasthaus Leve</i>, Alter Steinweg 37
Westphalian cuisine</p> <p>2 <i>Feldmann</i>, An der Clemenskirche 14
Upscale restaurant, serves also Westphalian dishes</p> <p>3 <i>Großer Kiepenkerl</i>, Spiekerhof 45
<i>Kleiner Kiepenkerl</i>, Spiekerhof 47
Traditional dishes from Münster</p> <p>4 <i>Mocca d'or</i>, Rothenburg 14-16
Italian cuisine</p> <p>5 <i>Schlossgarten</i>
Conference Lunch</p> <p>6 <i>Stuhlmacher</i>, Prinzipalmarkt 6/7
Traditional dishes from Münster</p> |
|---|---|



Map by OpenStreetMap, under ODbL.

Tuesday 2.9.	Wednesday 3.9.	Thursday 4.9.	Friday 5.9.
8:15 – 9:00 Registration	8:15 – 9:00 Registration		
		8:30 – 9:00 Registration	
9:00 – ca 12:30 Tutorial 1: The Hitchhiker's Guide to Biomedical Imaging Workshop: New Challenges in Neural Computation and Machine Learning	9:00 – 9:20 Opening	9:00 – 10:00 Invited Talk: Markus Gross	9:00 – 10:00 Invited Talk: Ernesto Estrada
	9:20 – 10:00 German Pattern Recognition Award		
	10:00 – 10:50 Oral Session 1: Variational Models for Depth and Flow	10:00 – 10:50 Oral Session 4: Image Processing & Analysis	10:00 – 10:50 Oral Session 8: Deep Learning & Segmentation
	10:50 – 11:15 Coffee Break		
	11:15 – 12:30 Oral Session 2: Reconstruction	11:15 – 12:30 Oral Session 5: Feature Computation	11:15 – 12:30 Oral Session 9: Human Pose & People Tracking
12:30 – 14:00 Lunch Break			
14:00 – ca 17:30 Tutorial 2: Throwing Computer Vision Overboard: How to Handle Underwater Light Attenuation and Refraction Workshop: New Challenges in Neural Computation and Machine Learning	14:00 – 15:00 Invited Talk: Ron Kikinis	14:00 – 15:15 Oral Session 6: Video Interpretation	14:00 – 15:15 Oral Session 10: Interpolation & Inpainting
	15:00 – 15:50 Oral Session 3: Bio-Informatics		
	15:50 – 16:20 Coffee Break	15:15 – 15:45 Coffee Break	Coffee Break
	16:00 – 18:00 Poster Session 1 & Young Researchers Forum	15:45 – 16:35 Oral Session 7: Segmentation & Labeling	15:30 – 16:00 GCPR Awards, Closing, and Farewell Refreshments
	17:30 – 18:30 DAGM Meeting	16:35 – 18:20 Poster Session 2 & Young Researchers Forum	
	18:30 Bus Depature to Conference Dinner		
19:00 Welcome Reception	18:30 – 20:00 City Tour	19:00 – 22:30 Conference Dinner	