University of Stuttgart
Germany

Joint Conference

GCPR / VMV 2018

October 10 – 12, 2018   Stuttgart, Germany

Informatik Forum Stuttgart

DAGM
Deutsche Arbeitsgemeinschaft
für Mustererkennung e.V.

GESELLSCHAFT
FÜR INFORMATIK

Conference Booklet

40th German Conference on Pattern Recognition (GCPR)

23th International Symposium on Vision, Modeling, and Visualization (VMV)

October 10-12, 2018
Stuttgart, Germany

Index

Preface

Welcome to Stuttgart to the 40th German Conference on Pattern Recognition (GCPR) and the 23rd Symposium on Vision, Modeling, and Visualization (VMV). After the great success of GCPR/VMV 2015 in Aachen, this is the second time in history that both conferences are jointly organized.

GCPR 2018

In contrast to previous GCPR conferences, we postponed the paper deadline to the beginning of July and the conference itself to the beginning of October in order to avoid interfering with deadlines of other related conferences. Moreover, we decided to extend the page limit from 10 pages to 14 pages plus 2 pages of references to match the standard paper length of other top conferences in the field. In both ways, we have been able to significantly increase the number of submitted papers.

In total, our call for papers resulted in 123 submissions from institutions from 23 countries. Each paper underwent a strict double-blind reviewing process, in almost all cases by three program committee (PC) members, sometimes with support from additional experts. Moreover, in contrast to previous GCPR conferences, we increased the emphasis on applied research by offering additional tracks with dedicated track chairs for computer vision systems and applications, pattern recognition in life sciences and natural sciences as well as photogrammetry and remote sensing. In total, 48 out of 123 submissions have been accepted, resulting in an acceptance rate of 39%, which is one of the lowest acceptance rates in the history of GCPR. Thereby, 22 papers have been accepted for oral presentation, whereas 26 contributions have been accepted as posters. As a consequence, the program covers the entire spectrum of pattern recognition, machine learning, image processing, and computer vision.

During the reviewing process, the program chairs Thomas Brox (University of Freiburg) and Mario Fritz (CISPA Helmholtz Center i.G.) were supported by 40 PC members and 6 dedicated track chairs. We thank the program chairs, the reviewers, and the track chairs for their valuable service to our scientific community and all authors for their GCPR submissions! Following the tradition of GCPR, all accepted submissions appear as proceedings in the Lecture Notes in Computer Sciences (LNCS) series of Springer. Due to the late deadline, however, there will be post-proceedings this time, i.e. the proceedings will be published after the conference. In this context, there will be another novelty compared to previous GCPR conferences. This time, the best papers from all submissions will be invited to contribute to a special issue of the International Journal of Computer Vision – one of the leading journals in the field.

Preface

Since the GCPR (formerly DAGM) conference series celebrates its 40th anniversary this year, the conference program comprises two dedicated sessions: one in which the current and former presidents of the German Pattern Recognition Society (DAGM) take you on a fascinating journey from the past to the future of the DAGM, and one session in which invited experts from the field give overview talks on medical image analysis and human motion estimation, respectively.

The program of GCPR 2018 is enriched by a number of additional events. As in previous years, we organize two nectar poster sessions to give participants the opportunity to present and discuss excellent research that they have published at other top conferences or top journal within the last two years. Moreover, GCPR 2018 features a Young Researchers' Forum (YRF), where submissions from bachelor or master students are explicitly encouraged. Furthermore, on the day before the main conference, a workshop takes place that focuses on computer vision challenges in industry. In combination with our special tracks on more applied research, this aims at further tightening the close connections to industry. Finally, we also have two half-day tutorials from international experts who introduce you to the state-of-the-art in the respective fields: one on light field analysis and one on visual tracking with discriminative correlation filters.

VMV 2018

Similar to previous years, the call for papers for VMV 2018 resulted in 39 submissions. As for GCPR, each paper was subject to a rigorous double-blind reviewing process by three PC members. From these submissions, 19 papers have been accepted – all of them for oral presentation. This results in an acceptance rate of 49%. The paper program covers a wide range of topics – from rendering and data structures in computer graphics to augmented reality all the way to information, scientific, and geographic visualization.

During the reviewing process, the program chairs Fabian Beck (University of Duisburg-Essen), Carsten Dachsbacher (KIT), and Filip Sadlo (Heidelberg University) were supported by 41 PC members. We thank the program chairs and the reviewers for their valuable service to our scientific community and all authors for their VMV submissions! As in previous years, the proceedings are published in the Eurographics Digital Library.

Preface

INVITED TALKS, SPONSORS, AND ACKNOWLEDGMENTS

We are happy that four world-leading experts have accepted our invitation to give keynote lectures at GCPR / VMV 2018:

Michael Cohen (Facebook, University of Washington)

Raquel Urtasun (Uber ATG Toronto, University of Toronto)

Metin Sitti (MPI for Intelligent Systems, Carnegie Mellon University)

Juri Stanossek (Mackevision, Film Academy of Ludwigsburg)

We are looking forward to interesting and inspiring talks on computer graphics, autonomous driving, small-scale robotics, and visual effects.

It is our pleasure to thank the following sponsors for their generous sponsorship of this event: Daimler, MVTec, Zeiss (all as Gold Sponsors) and Bosch, Sony, TeamViewer (all as Silver Sponsors). Moreover, we thank INFOS e.V. and in particular Michael Matthiesen for great organizational support. Big thanks go to Tina Barthelmes, Petra Enderle, Anton Malina, Petra van Schayck, Maria Schulz, Nils Rodrigues, Margot Roubicek and Karin Vrana for their great support.

We are happy to welcome you in Stuttgart, we hope that you enjoy the conference, and we are looking forward to next year's conferences in Dortmund (GCPR) and Rostock (VMV).

October 2018

Andrés Bruhn
(General Chair GCPR)

Daniel Weiskopf
(General Chair VMV)

Committees GCPR

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Andrés Bruhn, University of Stuttgart

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Carsten Dachsbacher, KIT
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Angela Yao, University of Bonn

Joint Conference Program   October 9-12, 2018

VMV

GCPR

1st Conf. on Visual Computing

TUESDAY, OCT 09, 2018	WEDNESDAY, OCT 10, 2018
Registration 8:30 – 19:00	Registration 8:30 – 17:30

09:00

TUTORIAL
Light Fields
Part I
9:00 / V 38.02

GCPR / VMV 2018 OPENING

JOINT KEYNOTE
Raquel Urtasun 9:10 / V 38.01

10:00

COFFEE BREAK

10:30

COFFEE BREAK

40 YEARS GCPR
10:30 / V 38.04

ORAL VMV
10:30 / V 38.04

11:00

TUTORIAL
Light Fields
Part II
11:00 / V 38.02

COFFEE BREAK

11:30

40 YEARS GCPR
Invited Talks
11:30 / V 38.01

ORAL VMV
11:40 / V 38.04

12:30

LUNCH

LUNCH

13:30

WORKSHOP
Computer Vision
Challenges in
Industry
13:30 / V 38.04

14:00

TUTORIAL
Tracking Part I
14:00 / V 38.02

AWARDS
14:00 / V 38.01

ORAL VMV
14:00 / V 38.04

15:00

COFFEE BREAK

POSTERS AND COFFEE
15:00 / V 38.03 / Library

15:30

TUTORIAL
Tracking Part II
15:30 / V 38.02

16:30

ORAL GCPR
16:00 / V 38.01

**GI FB GDV
ASSEMBLY**
16:00 / V 38.04

COFFEE BREAK

17:00

JOINT KEYNOTE
Michael Cohen
17:00 / V 38.01

18:00

18:30

JOINT RECEPTION
18:30 / Campus.Guest

19:00

**GCPR / VMV
CONFERENCE DINNER**

19:00 / Großer Kursaal

21:00

22:00

October 9-12, 2018   Joint Conference Program

	THURSDAY, OCT 11, 2018	**FRIDAY, OCT 12, 2018**
	Registration 8:30 – 18:00	Registration 8:30 – 11:30

09:00

JOINT KEYNOTE
Metin Sitti
9:00 / V 38.01

JOINT KEYNOTE
Juri Stanossek
9:00 / V 38.01

10:00

JOINT ORAL SESSION
10:00 / V 38.01

JOINT ORAL SESSION
10:00 / V 38.01

10:30

POSTERS AND COFFEE
10:40 / V 38.03 / Library

POSTERS AND COFFEE
10:40 / V 38.03 / Library

11:30

ORAL GCPR
11:40 / V 38.01

ORAL VMV
11:40 / V 38.04

ORAL GCPR
11:40 / V 38.01

ORAL VMV
11:40 / V 38.04

12:30

PAPER AWARDS AND CLOSING

LUNCH

14:00

ORAL GCPR
14:00 / V 38.01

ORAL VMV
14:00 / V 38.04

15:00

POSTERS AND COFFEE
15:00 / V 38.03 / Library

16:00

ORAL GCPR
16:00 / V 38.01

ORAL VMV
16:00 / V 38.04

17:00

17:30

DAGM ASSEMBLY
17:40 / V 38.01

19:00

Keynote Speakers

Michael Cohen, Facebook, University of Washington

Still, In Motion

In this talk, I will take an autobiographical approach to explain both where we have come from in computer graphics from the early days of rendering, and to point towards where we are going in this new world of smartphones and social media. We are at a point in history where the abilities to express oneself with media is unparalleled.

The ubiquity and power of mobile devices coupled with new algorithmic paradigms is opening new expressive possibilities weekly. At the same time, these new creative media (composite imagery, augmen-ted imagery, short form video, 3D photos) also offer unprecedented abilities to move freely between what is real and unreal. I will focus on the spaces in between images and video, and in between objective and subjective reality. Finally, I will close with some lessons learned along the way.

Biography: Michael is the Director of the Computational Photography Group at Facebook and is also an Affiliate Professor at the University of Washington. He arrived at Facebook after two decades at Microsoft Research. He has previously served on the faculties at Princeton and Cornell Universities. The Computational Photography Team at Facebook was formed in 2015 to build new ways to share photos and videos on the social media platform, including allowing Facebook users to share 3D videos and Virtual Reality videos to their profiles.

Keynote Speakers

Raquel Urtasun, Head of Uber ATG Toronto, University of Toronto

A Future with Affordable Self-driving Vehicles

We are on the verge of a new era in which robo-tics and artificial intelligence will play an important role in our daily lives. Self-driving vehicles have the potential to redefine transportation as we understand it today. Our roads will become safer and less congested, while parking spots will be repurposed as leisure zones and parks. However, many technological challenges remain as we pursue this future. In this talk I will showcase the latest advancements made by Uber Advanced Technologies Group's Research Lab in the quest towards self-driving vehicles. In addition, you'll hear my thoughts on the future of research and education in this field, where both industry and academia come together to form the next generation of students and solve the remaining open research problems.

Biography: Raquel Urtasun is the Head of Uber ATG Toronto. She is also an Associate Professor in the Department of Computer Science at the University of Toronto, a Canada Research Chair in Machine Learning and Computer Vision and a co-founder of the Vector Institute for AI. Prior to this, she was an Assistant Professor at the Toyota Technological Institute at Chicago (TTIC), an academic computer science institute affiliated with the University of Chicago. She was also a visiting professor at ETH Zurich during the spring semester of 2010. She received her Ph.D. degree from the Computer Science department at Ecole Polytechnique Federal de Lausanne (EPFL) in 2006 and did her postdoc at MIT and UC Berkeley. She is a world leading expert in machine perception for self-driving cars. Her research interests include machine learning, computer vision, robotics and remote sensing. Her lab was selected as an NVIDIA NVAIL lab. She is a recipient of an NSERC EWR Steacie Award, an NVIDIA Pioneers of AI Award, a Ministry of Education and Innovation Early Researcher Award, three Google Faculty Research Awards, an Amazon Faculty Research Award, a Connaught New Researcher Award, a Fallona Family Research Award and two Best Paper Runner up Prize awarded at the Conference on Computer Vision and Pattern Recognition (CVPR) in 2013 and 2017 respectively.

Keynote Speakers

Metin Sitti, Director at MPI for Intelligent Systems, Carnegie Mellon University

Small-Scale Soft Robotics

Soft functional active materials could enable physical intelligence for small-scale (from a few millimeters down to a few micrometers overall size) devices and robots by providing them unique capabilities, such as shape changing and programming, physical adaptation, safe interaction with their environment, and multi-functional and drastically diverse dynamics.

In this talk, our recent activities on design, manufacturing, and control of new shape-programmable active soft matter and untethered soft robots at the milli/microscale are reported. First, elastomeric microfibers, inspired by gecko foot-hairs, are proposed as new reversible soft adhesives for robotics, as soft robotic grippers and climbing robot attachment materials, and skin adhesives for soft wearable devices. Second, red blood cell (RBC)-based soft microswimmers driven by attached E. coli bacteria are proposed as new active local drug delivery systems.

These microswimmers carry cargo such as drugs and imaging agents inside the RBC, can be steered magnetically, and can be fully degraded via exposed NIR light. Third, untethered soft millirobots inspired by spermatozoids, caterpillars, and jellyfishes are proposed using elastomeric magnetic composite materials. Static and dynamic shapes of such magnetic active soft materials are programmed using a computational design methodology.

These soft robots are demonstrated to be able to have seven or more locomotion modalities (undulatory swimming, jellyfish-like swimming, water meniscus climbing, jumping, ground walking, rolling, crawling inside constrained environments, etc.) in a single robot for the first time to be able to move on complex environments, such as inside the human body. Preliminary ultrasound-guided navigation of such soft robots is presented inside an ex vivo tissue towards their medical applications to deliver drugs and other cargo locally and heat the local tissues for hyperthermia and coagulation.

Biography: Metin Sitti received the BSc and MSc degrees in electrical and electronics engineering from Bogazici University, Istanbul, Turkey, in 1992 and 1994, respectively, and the PhD degree in electrical engineering from the University of Tokyo, Tokyo, Japan, in 1999.

Keynote Speakers

He was a research scientist at UC Berkeley during 1999-2002. He has been a professor in the Department of Mechanical Engineering and Robotics Institute at Carnegie Mellon University, Pittsburgh, USA since 2002. He is currently a director at the Max Planck Institute for Intelligent Systems in Stuttgart. His research interests include small-scale physical intelligence, mobile microrobotics, bio-inspired mate-rials and miniature robots, soft robotics, and micro-/nanomanipulation. He is an IEEE Fellow. He received the SPIE Nanoengineering Pioneer Award in 2011 and NSF CAREER Award in 2005. He received many best paper, video and poster awards in major robotics and adhesion conferences. He is the editor-in-chief of the Journal of Micro-Bio Robotics.

Juri Stanossek, VFX Supervisor at Macke-vision, Film Academy of Ludwigsburg

Jim Button and Luke the Engine Driver

**Friday, 12 Oct, 9:00
Joint Keynote GCPR / VMV, V38.01**

In his presentation "Jim Button and Luke the engine driver", one of the most expensive movies ever produced in Germany, Juri Stanossek will give an insight into the Mandala sequence of the movie. He'll be talking about the development and design of the kingdom – from beginning of the shoot through to the final sequence. He'll also explain why and how they used Ncam, a realtime feedback on set, during set supervision, and how it helped with the entire creative process of creating full CG environments afterwards.

Biography: Juri Stanossek started his career as Visual Effects Artist in 1994. Since then he's supervised more than 40 movies for TV and cinema. He acted as Visual Effects Supervisor at Elektrofilm from 2004 to 2008 and then moved forward to Pixomondo Stuttgart, where he supervised international productions like "Ghostwriter" (2010), "Hugo Cabret" (2011), "Game of Thrones" (2012) and "Rush" (2013). He started at his current employer, Mackevision, in 2013 as VXF Supervisor, where he oversaw the visual effects in productions like "The Cut" (2015) and "Independence Day: Resurgence" (2016). Most recently Juri finalised the VFX supervision for the movie "Jim Button" (2018) and the new Netflix series "Lost in Space" (2018). His outstanding visual effects supervision work for "Game of Thrones" won an Emmy VES Award in 2013 and last year Juri received the title of Professor by the Film Academy of Ludwigsburg Film Academy of Ludwigsburg, where he's been lecturing courses on animation since 2010.

GCPR 2018 Program

TUESDAY, OCTOBER 9, 2018 Registration 08:30 – 19:00

09:00 – 12:30	**TUTORIAL** **Light Field Analysis** Bastian Goldlücke, Ole Johannsen	V38.02
12:30 – 14:00	Lunch	Mensa
14:00 – 16:30	**TUTORIAL** **Visual Tracking** Martin Danelljan	V38.02
13:30 – 16:00	**WORKSHOP** **Computer Vision Challenges in Industry** Alexander Freytag, Carsten Steger, Bodo Rosenhahn	V38.04
16:30 – 17:00	Coffee Break (Library)	0.010
17:00 – 18:00	**JOINT KEYNOTE GCPR / VMV / SFB TRR 161** **Michael Cohen** Still, In Motion	V38.01
18:30 – 21:00	**RECEPTION OF THE** **SFB TRR 161 & VMV / GCPR 2018** **CONFERENCES**	Campus Guest

WEDNESDAY, OCTOBER 10, 2018 Registration 08:30 – 17:30

09:00 – 09:10	**GCPR / VMV 2018 OPENING**	V38.01
09:10 – 10:10	**JOINT KEYNOTE** **Raquel Urtasun** A Future with Affordable Self-driving Vehicles	V38.01
10:10 – 10:30	Coffee Break (Library)	0.010
10:30 – 11:30	**40 Years DAGM** Session Chair: Reinhard Koch	V38.01
10:30	Reinhard Koch, Kiel University **Welcome Note 40 Years**	
10:50	Hans Burkhardt, Freiburg University **Milestones at DAGM and in Pattern Recognition**	
11:10	Joachim Buhmann, ETH Zürich **Patterns everywhere! Can I believe what my algorithm detects?**	

GCPR 2018 Program

11:30 – 12:30	**40 Years DAGM – Invited Talks** Session Chair: Bernt Schiele	V38.01
11:30	Joachim Hornegger, University Erlangen-Nürnberg **The Past, Present and Future of Medical Image Analysis**	
12:00	Michael Black, MPI for Intelligent Systems **Estimating Human Motion: Past, Present and Future**	
12:30 – 14:00	Lunch	Mensa
14:00 – 15:00	**Awards** Session Chairs: Reinhard Koch, Helmut Mayer, Uwe Franke, Carsten Steger German Pattern Recogniton Award DAGM MVTec Dissertation Award DAGM Best Master's Thesis Award	V38.01
15:00 – 16:00	**Posters and Coffee** (Library)	V38.03
16:00 – 17:20	**ORAL GCPR** **Learning I**	V38.01
16:00	Antonio D'Innocente, Barbara Caputo **Domain Generalization with Domain-Specific Aggregation Modules**	
16:15	Oliver Blum, Biagio Brattoli, Björn Ommer **X-GAN: Improving Generative Adversarial Networks with ConveX Combinations**	
16:30	Francesco Croce, Matthias Hein **A randomized gradient-free attack to ReLU networks**	
16:45	Nawid Sayed, Biagio Brattoli, Björn Ommer **Cross and Learn: Cross-Modal Self-Supervision**	
17:00	Remy Sun, Christoph H. Lampert **KS(conf): A Light-Weight Test if a ConvNet Operates Outside of Its Specificaitions**	
19:00 – 22:00	**GCPR / VMV CONFERENCE DINNER** **GROSSER KURSAAL, BAD CANNSTATT**	

GCPR 2018 Program

Registration 08:30 – 18:00

	JOINT KEYNOTE	
09:00 – 10:00	**Metin Sitti** Small-Scale Soft Robotics	V38.01

	JOINT ORAL SESSION	
10:00 – 10:40		V38.01

10:00	Michael Strecke, Bastian Goldlücke **Sublable-accurate Convex Relaxation with Total Generalized Variation Regularization**	
10:15	Jérôme Holbein, Tobias Günther **Parameter Space Comparison of Inertial Particle Model**	

10:40 – 11:40	**Posters and Coffee** (Library)	V38.03

	ORAL GCPR	
11:40 – 12:30	**Motion and Video**	V38.01

11:40	Laura Sevilla-Lara, Yiyi Liao, Fatma Guney, Varun Jampani, Andreas Geiger, Michael J. Black **On the Integration of Optical Flow and Action Recogniton**	
11:55	Ardhendu Behera, Alexander H. Keidel, Bappaditya Debnath **Context-driven Multi-stream LSTM (M-LSTM) for Recognizing Fine-Grained Activity of Drivers**	
12:10	Katrin Lasinger, Christoph Vogel, Thomas Pock, Konrad Schindler **3D Fluid Flow Estimation with Integrated Particle Reconstruction**	

12:30 – 14:00	Lunch	Mensa

	ORAL GCPR	
14:00 – 15:00	**Applications**	V38.01

14:00	Andres C. Rodriguez, Jan Dirk Wegner **Counting the Uncountable: Deep Semantic Density Estimation from Space**	
14:15	Patrick Follmann, Bertram Drost, Tobias Böttger **Acquire, Augment, Segment & Enjoy: Weakly Supervised Instance Segmentation of Supermarket Products**	
14:30	Aytac Kanact, Xiatian Zhu, Shaogang Gong **Vehicle Re-Identification in Context**	
14:45	Simon-Martin Schröder, Rainer Kiko, Jean-Olivier Irisson, Reinhard Koch **Low-Shot Learning of Plankton Categories**	

THURSDAY, OCTOBER 11, 2018   Registration 08:30 – 18:00

| 15:00 – 16:00 | **Posters and Coffee** (Library) | V38.03 |

| 16:00 – 17:20 | **ORAL GCPR**
Learning II | V38.01 |

16:00	Timo Hackel, Mikhail Usvyatsov, Silvano Galliani, Jan Dirk Wegner, Konrad Schindler **Interference, Learning and Attention Mechanisms that Exploit and Preserve Sparsity in CNNs**
16:15	Thomas M. Hehn, Fred Hamprecht **End-to-end Learning of Deterministic Decision Trees**
16:30	Manel Martinez, Rainer Stiefelhagen **Taming the Cross Entropy Loss**
16:45	Gianni Franchi, Andreas Kolb, Angela Yao **Supervised Deep Kriging for Single-Image Super-Resolution**
17:00	Björn Barz, Christoph Käding, Joachim Denzler **Information-Theoretic Active Learning for Content-Based Image Retrieval**

| 17:40 – 19:00 | **DAGM ASSEMBLY** | V38.01 |

GCPR 2018 Program

Registration 08:30 – 11:30

09:00 – 10:00	**JOINT KEYNOTE** **Juri Stanossek** Jim Button and Luke the Engine Driver	V38.01
10:00 – 10:40	**JOINT ORAL SESSION**	V38.01

10:00	Marc Habermann, Weipeng Xu, Helge Rhodin, Michael Zollhöfer, Gerard Pons-Moll, Christian Theobalt **NRST: Non-rigid Surface Tracking from Monocular Video**	
10:15	Thomas Lindemeier, Martin Gülzow, Oliver Deussen **Painterly Rendering Using Limited Paint Color Palettes**	

10:40 – 11:40	**Posters and Coffee** (Library)	V38.03

11:40 – 12:30	**ORAL GCPR** **Optimization and Clustering**	V38.01

11:40	Jon Arnar Tomasson, Peter Ochs, Joachim Weickert **AFSI: Adaptive Restart for Fast Semi-Iterative Schemes for Convex Optimisation**	
11:55	Sebastian M. Keller, Damian Murezzan, Volker Roth **Invexity Preserving Transformations for Projection Free Optimization with Sparsity Inducing Non-Convex Constraints**	
12:10	Artjom Zern, Matthias Zisler, Freddie Astrom, Stefania Petra, Christoph Schnörr **Unsupervised Label Learning on Manifolds by Spatially Regularized Geometric Assignment**	

12:30 – 12:40	**PAPER AWARDS AND CLOSING**	V38.01

GCPR Poster Sessions

Wedn, 10 Oct, Poster and Coffee I
15:00 – 16:00 (V38.03 / Library)

Dominik Wolters, Reinhard Koch: **Topology-Based 3D Reconstruction of Mid-level Primitives in Man-Made Environments**

Philip Häusser, Johannes Plapp, Vladimir Golkov, Elie Aljalbout, Daniel Cremers: **Associative Deep Clustering: Training a Classification Network with no Labels**

Jonas Tebbe, Yapeng Gao, Marc Sastre Rienitz, Andreas Zell: **A Table Tennis Robot System using an industrial KUKA Robot Arm**

Gregor Blott, Jie Yu, Christian Heipke: **View Aware Person Re-Identification**

Frank Neuhaus, Tilman Koss, Robert Kohnen, Dietrich Paulus: **MC2SLAM: Real-Time Inertial Lidar Odometry using Two-Scan Motion Compensation**

Stefan Reinhold, Timo Damm, Lukas Huber, Reimer Andresen, Reinhard Barkmann, Claus-C. Glüer, Reinhard Koch: **An Analysis by Synthesis Approach for Automatic Vertebral Shape Identification in Clinical QCT**

Sascha Clausen, Claudius Zelenka, Tobias Schwede, Reinhard Koch: **Parcel Tracking in Large Camera Networks**

Oldrich Kodym, Michal Spanel: **Segmentation of Head and Neck Organs at Risk Using CNN with Batch Dice Loss**

Nikolay Rudakov, Tuomas Eerola, Lasse Lensu, Heikki Kälviäinen, Heikki Haario: **Detection of Mechanical Damages in Sawn Timber Using Convolutional Neural Networks**

Fernando Bombardelli, Serhan Gül, Cornelius Hellge: **Compressed-Domain Video Object Tracking using Markov Random Fields with Graph Cuts Optimization**

Roman Schaffert, Jian Wang, Peter Fischer, Anja Borsdorf, Andreas K. Maier: **Metric-Driven Learning of Correspondence Weighting for 2-D/3-D Image Registration**

Jan-Martin Steitz, Faraz Saeedan, Stefan Roth: **Multi-view X-ray R-CNN**

Johann Sawatzky, Martin Garbade, Jürgen Gall: **Ex Paucis Plura: Learning Affordance Segmentation from Very Few Examples**

Thur, 11 Oct, Poster and Coffee II
10:40 – 11:40 (V38.03 / Library)

Alexander Richard, Hilde Kühne, Ahsan Iqbal, Jürgen Gall: **NeuralNetwork-Viterbi: A Framework for Weakly Supervised Video Learning (CVPR 2018)**

Faraz Saeedan, Nicolas Weber, Michael Gösele, Stefan Roth: **Detail-Preserving Pooling in Deep Networks (CVPR 2018)**

Quynh Nguyen, Matthias Hein: **Optimization Landscape and Expressivity of Deep CNNs (ICML 2018)**

Daniel Maurer, Andres Bruhn: **ProFLow: Learning to Predict Optical Flow (BMVC 2018)**

Hendrik Schilling, Maximilian Diebold, Carsten Rother, Bernd Jähne: **Inline Occlusion Handling for Light Field Depth Estimation (CVPR 2018)**

Daniel Maurer, Yong-Chul Ju, Michael Breuß, Andres Bruhn: **Combining Shape from Shading and Stereo: A Joint Variational Method for Estimating Depth, Illumination and Albedo (IJCV 2018)**

Apratim Bhattacharyya, Bernt Schiele, Mario Fritz: **Accurate and Diverse Sampling of Sequences based on a "Best of Many" Sample Objective (CVPR 2018)**

GCPR Poster Sessions

Bastian Bier, Mathias Unberath, Jan-Nico Zaech, Javad Fotouhi, Mehran Armand, Greg Osgood, Nassir Navab, Andreas Maier: **X-ray-transform Invariant Anatomical Landmark Detection for Pelvic Trauma Surgery (MICCAI 2018)**

Thur, 11 Oct, Poster and Coffee III
10:40 – 11:40 (V38.03 / Library)

Max Mehltretter, Sebastian P. Kleinschmidt, Bernardo Wagner, Christian Heipke: **Multimodal Dense Stereo Matching**

Sören Klemm, Xiaoyi Jiang, Benjamin Risse: **Deep Distance Transform to Segment Visually Indistinguishable Merged Objects**

Aaron Scherzinger, Philipp Hugenroth, Marike Rüder, Sven Bogdan, Xiaoyi Jiang: **Multi-class Cell Segmentation using CNNs with F1-measure Loss Function**

Florian Piewak, Peter Pinggera, Markus Enzweiler, David Pfeiffer, Marius Zöllner: **Improved Semantic Stixels via Multimodal Sensor Fusion**

Lei Kang, J.Ignacio Toledo, Pau Riba, Mauricio Villegas, Alicia Fornes, Marcal Rossinyol: **Convolve, Attend and Spell: An Attention-based Sequence-to-Sequence Model for Handwritten Word Recognition**

Nikola Banic, Sven Loncaric: **Illumination Estimation is Sufficient for Indoor-Outdoor Image Classification**

Rory J Smith, Tilo Burghardt: **DeepKey: Towards End-to-End Physical Key Replication From a Single Photograph**

Christopher Syben, Bernhard Stimpel, Jonathan Lommen, Arnd Dörfler, Andreas K. Maier: **Deriving Neural Network Architectures using Precision Learning: Parallel-to-fan beam Conversion**

Naser Damer, Viola Boller, Yaza Wainakh, Fadi Boutros, Philipp Terhörst, Andreas Braun, Arjan Kuijper: **Detecting Face Morphing Attacks by Analyzing the Directed Distances of Facial Landmarks Shifts**

Dinesh Pothineni, Martin R. Oswald, Jan Poland, Marc Pollefeys: **KloudNet: Deep Learning for Sky Image Analysis and Irradiance Forecasting**

Divyansh Aggarwal, Elchin Valiyev, Fadime Sener, Angela Yao: **Learning Style Compatibility for Furniture**

Jonas Wulff, Michael J. Black: **Temporal Interpolation as an Unsupervised Pretraining Task for Optical Flow Estimation**

Tobias Geimer, Paul Keall, Katharina Breininger, Vincent Caillet, Michelle Dunbar, Christoph Bert, Andreas K. Maier: **Decoupling Respiratory and Angular Variation in Rotational X-ray Scans Using a Prior Bilinear Model**

Fri, 12 Oct, Poster and Coffee IV
10:40 – 11:40 (V38.03 / Library)

Andreas Kuhn, Lukas Roth, Jan-Michael Frahm, Helmut Mayer: **Improvement of Extrinsic Parameters from a Single Stereo Pair (WACV 2018)**

Kujtim Rahmani, Helmut Mayer: **High Quality Facade Segmentation Based on Structured Random Forest, Region Proposal Network and Rectangular Fitting (ISPRS Annals 2018)**

Fri, 12 Oct, Poster and Coffee IV

10:40 – 11:40 (V38.03 / Library)

Wolfgang Förstner, Kourosh Khoshelham: **Efficient and Accurate Registration of Point Clouds with Plane to Plane Correspondences (ICCV 2017)**

Daniel Maurer, Nico Marniok, Bastian Goldlücke, Andres Bruhn: **Structure-from-Motion-Aware PatchMatch for Adaptive Optical Flow Estimation (ECCV 2018)**

Alexander Preuhs, Andreas Maier, Michael Manhart, Javad Fotouhi, Nassir Navab, Mathias Unberath: **Double Your Views - Exploiting Symmetry in Transmission Imaging (MICCAI 2018)**

Siming Bayer, Nishant Ravikumar, Andreas Maier: **Intraoperative brain shift compensation using a hybrid mixture model (MICCAI 2018)**

Jan-Hendrik Lange, Andreas Karrenbauer, Björn Andres: **Partial Optimality and Fast Lower Bounds for Weighted Correlation Clustering (ICML 2018)**

GCPR 2018 Tutorials

Tutorial I: Introduction to Light Field Analysis

Bastian Goldlücke, Ole Johannson

The 4D light field has a rich internal structure, which is closely related to scene geometry. In this tutorial, we will explore the light field from a computer vision perspective, and study concepts and algorithms which are specifically tailored to leveraging this structure. In particular, having a dense sampling of view points opens up possibilities beyond classical multi-view approaches, and allows to tackle challenging problems in 3D reconstruction.

**Tuesday, 09 Oct, 09:00 – 12:30
Tutorial Light Fields, V38.02**

Tutorial Speakers

Bastian Goldlücke joined the University of Konstanz as an Associate Professor in 2014. Previously, he held postdoc positions at the University of Heidelberg (2011), TU Munich (2010) and the University of Bonn (2009). He received his Ph.D. from the MPI for computer science in Saarbrücken (2006). His main research interests are variational methods and their applications in computer vision, in particular inverse problems in light field analysis. He regularly serves as a reviewer for major conferences and journals, co-organized the first and second workshop on "Light Fields for Computer Vision" at ECCV 2014 and CVPR 2017, and was area chair for ACCV 2014 and 3DV 2016. His research is supported by the ERC Starting Grant "Light Field Imaging and Analysis" awarded in 2013, and the SFB Transregio "Quantitative Methods for Visual Computing".

Ole Johannsen studied mathematics (MSc eq.) at Heidelberg University and joined Prof. Bastian Goldluecke as a Ph.D student at the University of Konstanz in 2014. He has been working on light field analysis for several years, focusing on multi-layer depth estimation and 3D scene reconstruction using variational methods. Together with Katrin Honauer, he designed and published a popular benchmark for light field depth reconstruction in 2016 and works on data generation for deep learning. At CVPR 2017, he co-organized the second workshop on Light Fields for Computer Vision at CVPR. He did an internship with Raytrix, a manufacturor of plenoptic cameras, in 2012 and spend a month at the SIROCCO group of Christine Guillemot at INRIA in Rennes.

Tutorial II: Discriminative Correlation Filters for Visual Tracking

Martin Danelljan

In recent years, the Discriminative Correlation Filter (DCF) framework has reached immense popularity in the field of visual tracking, with hundreds of published papers. Its popularity stems from the efficiency, versatility and excellent performance of the DCF framework. This tutorial gives a comprehensive introduction to the DCF framework. First, background and underlying theory is presented. Then, more advanced topics, present in current state-of-the-art tracking approaches, are discussed.

**Tuesday, 09 Oct, 14:00 – 16:30
Tutorial Light Fields, V38.02**

Tutorial Speaker

Martin Danelljan received his PhD at Linköping University 2018. His main research interests are online machine learning methods for visual tracking and probabilistic models for point cloud registration. His research and development of the Discriminative Correlation Filter (DCF) framework has led to several top-ranking trackers. In 2014, he won the Visual Object Tracking (VOT) Challenge and the OpenCV State-ofthe-Art Vision Challenge. Furthermore, he achieved top ranks in VOT2016 and the sequestered set of VOT2017. He received the best paper award in the computer vision track in ICPR 2016.

GCPR 2018 Workshop

Workshop: Computer Vision Challenges in Industry

Organizers: Alexander Freytag, Zeiss Cooperate Research, Carsten Steger, TU München, MVTec, Bodo Rosenhahn, University of Hannover

Over the last years, the world-wide computer vision and machine learning community has grown significantly. Within this growing field, the academic research institutions of German-speaking countries play a substantial and still increasing role, which can be easily seen in the number of international collaborations and the number of papers in highest-ranked venues. Despite this strong competence, the participation of industrial computer vision researchers from German-speaking countries on *the* local conference in the field, the German Conference on Pattern Recognition (GCPR), is scant.

Tuesday, 09 Oct, 13:30 – 16:30
Workshop GCPR, V38.04

As one consequence, the exchange between academia and industry in German-speaking countries is substantially weaker than in other countries, e.g., compared to the US. This lack of exchange happens both on the level of content (i.e., comparably few joint research projects) and on the level of personal exchange (e.g., rarely happening internships during PhDs). However, both sides would greatly benefit from an improved exchange, e.g., by having joint research projects with real-world impact, by enabling reliable career paths for students, or by drawing inspiration from regular discussions on the boundary of fundamental and applied research. This workshop tries to bridge the gap between results of basic research on computer vision and their real-world applicability with a joint exchange forum.

Workshop Organizers

Dr. Alexander Freytag is a research scientist for machine learning at Carl Zeiss AG in the field of the next generations of intelligent optical systems. Before joining ZEISS in 2016, he obtained his diploma in Computer Science at the Friedrich Schiller University Jena (2011). His thesis (2016) was awarded with the Dean's Award from the Faculty of Math and Computer Science Jena, the DAGM MVTec Dissertation Award from the German Association for Pattern Recognition, and the KlarText Price for Science Communication from the Klaus Tschira Foundation. From 2014 to 2016, he served as research coordinator of the Michael Stifel Center Jena.

GCPR 2018 Workshop

The research activities of **Prof. Dr. Carsten Steger** comprise all aspects of machine vision, in particular object recognition and feature detection. He studied computer science at TUM from 1987 to 1993, worked as a researcher in TUM's Department of Computer Science (IX) from 1993 to 1999 and received his PhD from TUM in 1998. In 1996 he founded MVTec Software GmbH together with three colleagues. MVTec is a leading international manufacturer of software for machine vision. At MVTec he is general manager (Prokurist) and head of research and development. Since 2001 he has been teaching machine vision at TUM's Department of Informatics where he holds lectures and runs lab courses.

Bodo Rosenhahn studied Computer Science at the University of Kiel. He received the Dipl.-Inf. and Dr.-Ing. degrees from the University of Kiel in 1999 and 2003, respectively. From 2003 to 2005, he worked as post doc at the University of Auckland (New Zealand), funded with a scholarship from the German Research Foundation (DFG). In 2005-2008 he worked as senior researcher at the MPI for Informatics in Saarbruecken. Since 09/2008 he is Full Professor at the Leibniz University Hannover for automated image interpretation.

GCPR Workshop Program

13:30 – 13:35	**Welcome and Introduction**
13:35 – 14:00	**Christian Wojek (ZEISS) –**
	Computer Vision for Microscropy Applications
14:05 – 14:30	**Nils Hasler (The Captury) –**
	Computer Vision Challenges at StartUps
14:35 – 15:00	**Tobias Klinder (Philips) – Computer Vision and Machine**
	Learning Challnges in Diagnostic Imaging
15:05 – 15:30	**Carsten Steger (MVTec) –**
	Computer Vision for Industrial Applications
15:35 – 16:00	**Uwe Franke (Daimler) –**
	Computer Vision for Automotive Applications
16:05 – 16:30	**Panel discussions and questions to speakers**
16:30	**Workshop Closing**

GCPR 2018 Workshop

Invited Speakers – Details

Christian Wojek (ZEISS) will speak about challenges in using computer vision for microscopy applications.

Nils Hasler (The Captury): As anyone knows who has worked in both worlds, topics interesting for academics may differ from topics that are applicable in the real world. In my presentation I will touch on some topics where academia and industry disagree on what's interesting and useful. Nils will specifically focus on challenges in using computer vision in StartUps.

Tobias Klinder (Philips): With the pressure on health systems to provide better outcomes at lower costs, it is increasingly becoming evident that Computer Vision and Machine Learning will play a pivotal role in medical applications. However, in order to offer value-adding solutions, understanding of the market is crucial. In this talk, I will show specific examples to illustrate the challenges in the diagnostic imaging industry and to discuss the different focus of industrial versus academic research.

Carsten Steger (MVTec Software GmbH): Machine vision is a crucial technology in the automation of many industrial processes. Carsten will speak about challenges faced by users in the machine vision industry, with a focus on quality control and inspection.

Uwe Franke (Daimler): Computer Vision became a key for driver assistance as well as for future autonomous vehicles. For nearly 30 years Uwe focused on research and application in this field. He will address inspirations that have been triggered by academia and enabled solutions in industry. In addition he will dive in challenges ahead.

VMV 2018 Program

17:00 – 18:00	**JOINT KEYNOTE GCPR / VMV / SFB TRR 161** **Michael Cohen** Still, In Motion	V38.01
18:30 – 21:00	**RECEPTION OF THE** **SFB TRR 161 & VMV / GCPR 2018** **CONFERENCES**	Campus Guest

WEDNESDAY, OCTOBER 10, 2018   Registration 08:30 – 17:30

09:00 – 09:10	**GCPR / VMV 2018 OPENING**	V38.01
09:10 – 10:10	**JOINT KEYNOTE** **Raquel Urtasun** A Future with Affordable Self-driving Vehicles	V38.01
10:10 – 10:30	Coffee Break (Library)	0.010
10:30 – 11:20	**ORAL VMV** **Rendering**	V38.04
	Sébastian Fourey, David Tschumperlé, David Revoy **A Fast and Efficient Semi-guided Algorithm for Flat** **Coloring Line-arts** Tim Golla, Reinhard Klein **Interactive Interpolation of Metallic Effect Car Paints**	
11:20 – 11:40	Coffee Break (Library)	0.010
11:40 – 12:30	**ORAL VMV** **Augmented Reality**	V38.04
	Rafael Monroy, Matis Hudon, Aljosa Smolic **Dynamic Environment Mapping for Augmented Reality** **Applications on Mobile Devices** Aleksandr Amirkhanov, Artem Amirkhanov, Matthias Bernhard, Zsolt Toth, Sabine Stiller, Andreas Geier, Eduard Gröller, Gabriel Mistelbauer **With Teeth: Denture Preview in Augmented Reality**	
12:30 – 14:00	Lunch	Mensa

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VMV 2018 Program

Registration 08:30 – 17:30

14:00 – 15:10	**ORAL VMV** **Image Analysis and Visualization**	V38.04

Timo Oster, Christian Roessl, Holger Theisel
The Parallel Eigenvectors Operator

Wolfgang Fuhl, Thomas Kuebler, Thiago Santini,
Enkelejda Kasneci
Automatic generation of saliency-based areas of interest

Leslie Wöhler, Hangjian Zhang, Georgia Albuquerque,
Marcus Magnor
**Automatic Infant Face Verification via Convolutional Neural
Networks**

15:10 – 16:00	Coffee Break (Library)	V38.03

16:00 – 17:20	**GI FB GDV ASSEMBLY**	V38.04

19:00 – 22:00	**GCPR / VMV CONFERENCE DINNER** **GROSSER KURSAAL, BAD CANNSTATT**

VMV 2018 Program

Registration 08:30 – 18:00

09:00 – 10:00	**JOINT KEYNOTE** **Metin Sitti** Small-Scale Soft Robotics	V38.01

10:00 – 10:40	**JOINT ORAL SESSION**	V38.01

10:00	Michael Strecke, Bastian Goldlücke **Sublable-accurate Convex Relaxation with Total Generalized Variation Regularization**
10:15	Jérôme Holbein, Tobias Günther **Parameter Space Comparison of Inertial Particle Model**

10:40 – 11:40	Coffee Break (Library)	V38.03

11:40 – 12:30	**ORAL VMV** **Scanning**	V38.04

Sarah Berkei, Max Limper, Christian Hörr, Arjan Kuijper **Efficient Global Registration for Nominal/Actual Comparisons**
Alexander Dieckmann **Hierarchical additive poisson disk sampling**

12:30 – 14:00	Lunch	Mensa

14:00 – 15:10	**ORAL VMV** **Data Structures and Volumes**	V38.04

Feng Gu, Johannes Jendersie, Thorsten Grosch **Fast and Dynamic Construction of Bounding Volume Hierarchies based on Loose Octrees**
Magdalena Martinek, Marc Stamminger, Nikolaus Binder, Alexander Keller **Compressed Bounding Volume Hierarchies for Efficient Ray Tracing of Disperse Hair**
David Bulczak, Andreas Kolb **Efficient Subsurface Scattering Simulation for Time-of-Flight Sensors**

15:10 – 16:00	Coffee Break (Library)	V38.03

VMV 2018 Program

Registration 08:30 – 18:00

16:00 – 17:20	**ORAL VMV** **Information and Geographic Visualization**	V38.04

Michael Burch
Identifying Similar Eye Movement Patterns with t-SNE

Riccardo Roveri, Dirk J. Lehmann, Markus Gross, Tobias Günther
Correlated Point Sampling for Geospatial Scalar Field Visualization

Moataz Abdelaal, Marcel Hlawatsch, Michael Burch, Daniel Weiskopf
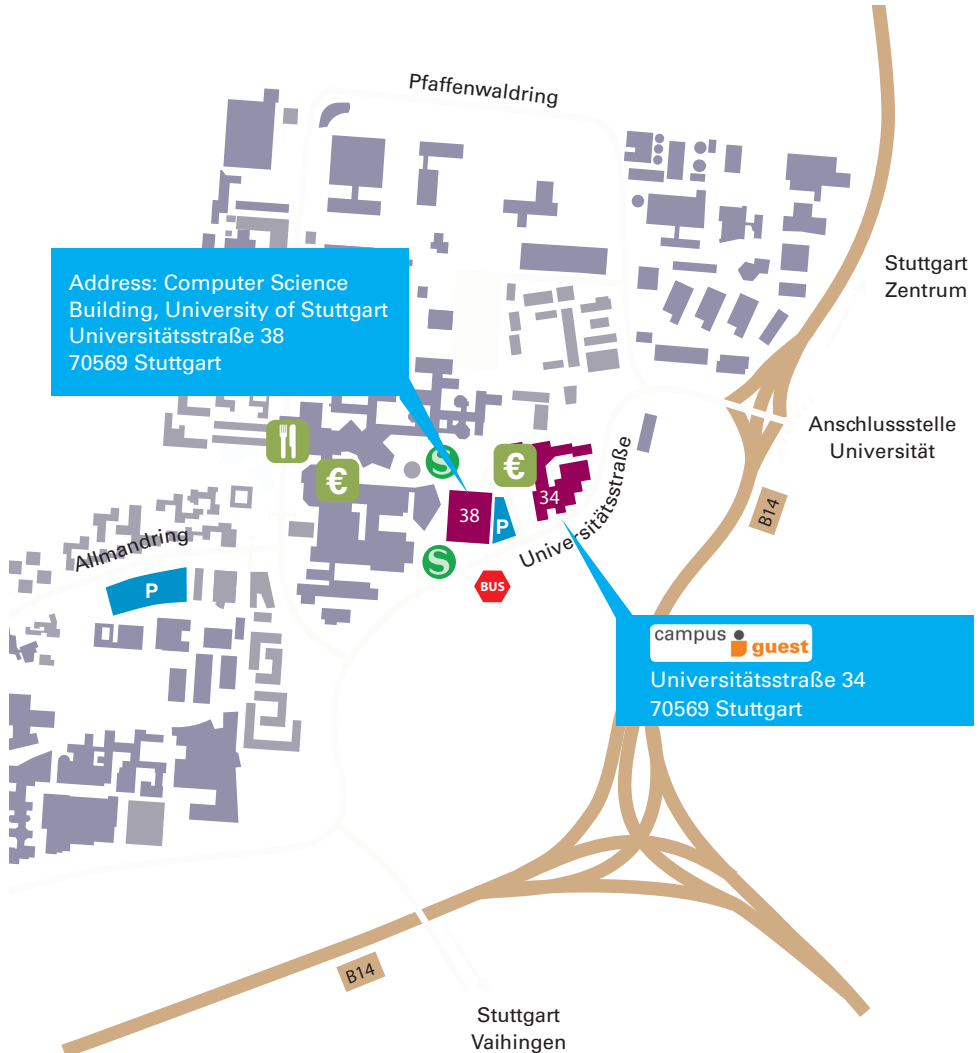**Clustering for Stacked Edge Splatting**

FRIDAY, OCTOBER 12, 2018   Registration 08:30 – 11:30

09:00 – 10:00	**JOINT KEYNOTE** **Juri Stanossek** Jim Button and Luke the Engine Driver	V38.01

10:00 – 10:40	**JOINT ORAL SESSION**	V38.01

10:00	Marc Habermann, Weipeng Xu, Helge Rhodin, Michael Zollhöfer, Gerard Pons-Moll, Christian Theobalt **NRST: Non-rigid Surface Tracking from Monocular Video**
10:15	Thomas Lindemeier, Martin Gülzow, Oliver Deussen **Painterly Rendering Using Limited Paint Color Palettes**

10:40 – 11:40	Coffee Break (Library)	V38.03

11:40 – 12:30	**ORAL VMV** **Scientific Visualization**	V38.04

Finian Mwalongo, Michael Krone, Guido Reina, Thomas Ertl
Web-based Volume Rendering using Progressive Importance-based Data Transfer

Mathias Kanzler, Rüdiger Westermann
Interactive Visual Exploration of Line Clusters

12:30 – 12:40	**PAPER AWARDS AND CLOSING**	V38.01

Conference Location

The coference will take place in the lecture halls of the Computer Science Building (Informatik-Gebäude) of the University of Stuttgart, which is located on the campus Stuttgart-Vaihingen.

Pfaffenwaldring

Stuttgart
Zentrum

Anschlussstelle
Universität

Address: Computer Science
Building, University of Stuttgart
Universitätsstraße 38
70569 Stuttgart

Universitätsstraße

Allmandring

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B14

BUS

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campus guest
Universitätsstraße 34
70569 Stuttgart

B14

Stuttgart
Vaihingen

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Venue

The distances between the lecture halls of the conference, the cafeteria ("Mensa"), and the conference hotel Campus.Guest are short. Please use this site plan for your orientation.

Photo: University of Stuttgart, Andrés Bruhn

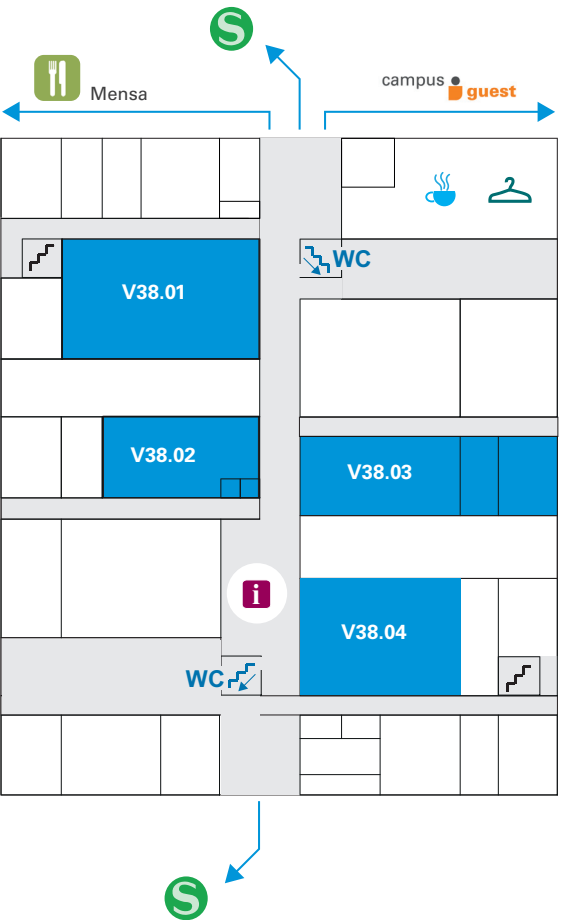**i** INFORMATION & REGISTRATION DESK

☕ COFFEE

👔 WARDROBE

🍴 LUNCH

Photo: University of Stuttgart
Aerial Photo Elsässer

COMPUTER SCIENCE BUILDING

Universitätsstraße 38,
Ground Floor

Mensa · campus guest

V38.01 · WC · V38.02 · V38.03 · V38.04 · WC

Arriving

BY PLANE

If you arrive at Stuttgart Airport, take the urban railway (S-Bahn) **S2** (direction Schorndorf) or **S3** (direction Backnang) to station "University" (approx. 15 minutes).

BY TRAIN

If you arrive at Stuttgart Main Station (Hauptbahnhof) by train, take the urban railway (S-Bahn) **S1** (direction Herrenberg), **S2** (direction Filderstadt) or **S3** (direction Airport) to station "University" (approx. 15 minutes).

Leave the station at the exit "Universitätszentrum". The Computer Science Building
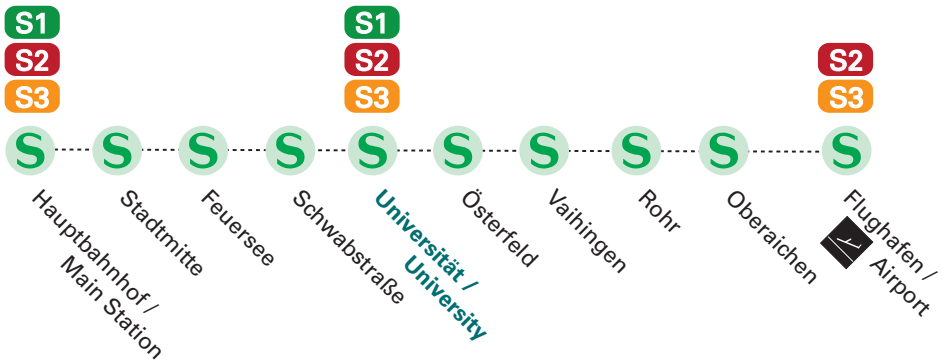
(Informatik-Gebäude) is located between the two exits of the urban railway (S-Bahn) station.

PLEASE NOTE!

Please check your long distance rail ticket. If it shows the option "+City", the local transport is included.

Public Transport in Stuttgart

Schedule information for public transport in Stuttgart is available online on www.en.vvs.de or via VVS App (www.vvs.de/vvs-app).

BY CAR

Visitors traveling by car can use the city map to find the way to the conference location and the available parking spaces. There are further parking spaces sidewise the streets Allmandring and Pfaffenwaldring.

Due to many construction sites, only a **limited number of parking spaces is available**. We recommend that you use public transport.

Useful Information

TICKETS AND PUBLIC TRANSPORT

Our conference is located at the University of Stuttgart, campus Stuttgart-Vaihingen. For the conference dinner as well as individual trips to the city of Stuttgart, you can ride all streetcars, suburban railways, and busses within the metropolitan Stuttgart area.

Free Tickets for Public Transport

All visitors of our conference receive a weekly ticket ("Wochenticket") for free to be used within the whole city area. This ticket is valid from Monday to Friday.

Please pick up your ticket at the registration desk!

A map of the railway network is avalable at the registration desk.

Schedule information for public transport in Stuttgart in available online on www.en.vvs.de or via VVS App (www.vvs.de/vvs-app).

INTERNET ACCESS

Wireless Internet is available for all conference participants. The user login is "konferenz" and there are different passwords for every conference day. Eduroam can also be used.

LUNCH

All visitors will have lunch at the cafeteria ("Mensa"). Please pick up a free voucher at the registration desk.

CONTACT / INFORMATION

If you have any questions or require assistance, please do not hesitate to contact us:

Contact Persons GCPR /VMV 2018:

Margot Roubicek: +49 (711) 685-88456

Petra van Schayk: +49 (711) 685-88600

Karin Vrana: +49 (711) 685-88606

Accommodation

CAMPUS.GUEST

The conference hotel Campus.Guest of the University of Stuttgart is centrally located on the campus Stuttgart-Vaihingen, in a quiet but also conveniently situated location. You can reach the S-Bahn station "Universität" in a few minutes by foot. The autobahn and the airport are reachable with a short drive by car.

The hotel offers more than 200 rooms, apartments in various sizes, suites, and rooms with a kitchen. All rooms have an ensuite bathroom.

From a breakfast buffet to drinks and snacks for breaks, a lunch-buffet with starters, main dish and dessert, or a quiet evening in the bistro, you will never go hungry or thirsty.

Campus.Guest is centrally located on the campus Stuttgart-Vahingen.

campus ● guest

Universitätsstraße 34
70569 Stuttgart
Phone: 0711/ 97464-0
reservierung@campus-guest.de

BOOKING

The organization committee arranged a pre-booked option for participants of our conference in the hotel Campus.Guest. When booking the accommodation in this hotel by phone or by mail, please use the keyword "GCPR/VMV", which will ensure you the discount we agreed with them:

Single room – 79 EUR
Double room – 98 EUR

Prices are indicated per room and night including breakfast.

Conference Dinner

DINNER AT THE KURSAAL

The conference dinner will be held on Wednesday, 10 Oct, at 19:00 at the Große Kursaal in Stuttgart-Bad Cannstatt. The conference dinner will start at 19:00 and will end at 22:00.

HOW TO GET THERE?

You can reach the Kursaal in Bad Cannstatt via public transport from the university site by taking the S-Bahn S1/S2/S3 from the station Universität to the station Stadtmitte (approx. 10 min) and then taking the U-Bahn U2 from the station Rotebühlplatz to the station Kursaal (approx. 16 min). Please note that the S-Bahn station Stadtmitte and the U-Bahn station Rotebühlplatz have an underground connection, i.e. please look for the U-Bahn sign (U), if you get off the S-Bahn (S).
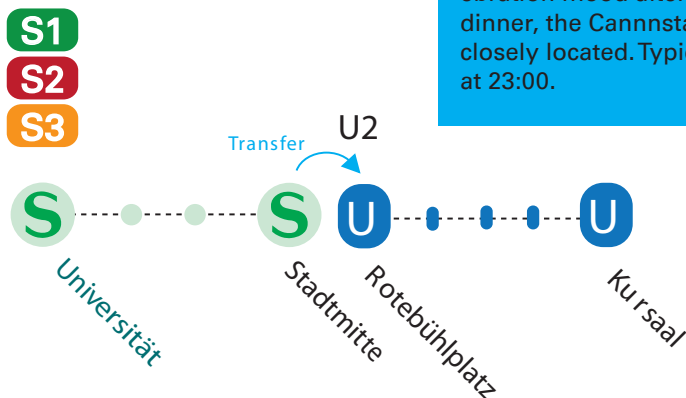
Großer Kursaal
Bad Cannstatt

Königsplatz 1
70372 Stuttgart

Phone: +49 (711) 99777241
info@kursaal-cannstatt.de

Photo: Großer Kursaal, Bad Cannstatt

The Große Kursaal in Stuttgart-Bad Cannstatt is a former wellness and therapy centre which was originally built in the north of Stuttgart in 1837 and later on rebuilt in 1949. Today, it is a beautiful location close to the Kurpark, a part of the green soul of Stuttgart. In case you are still in celebration mood after the conference dinner, the Cannnstatter Volksfest is closely located. Typically, it will close at 23:00.

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Conference Organization

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70569 Stuttgart

Institute for Visualisation and
Interactive Systems (VIS)
University of Stuttgart
Universitätsstraße 38
70569 Stuttgart

Visualization Research Center (VISUS)
University of Stuttgart
Allmandring 19
70569 Stuttgart

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Editorial	Petra Enderle
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Release Date	October 2018

www.gcprvmv2018.vis.uni-stuttgart.de/index.shtml