

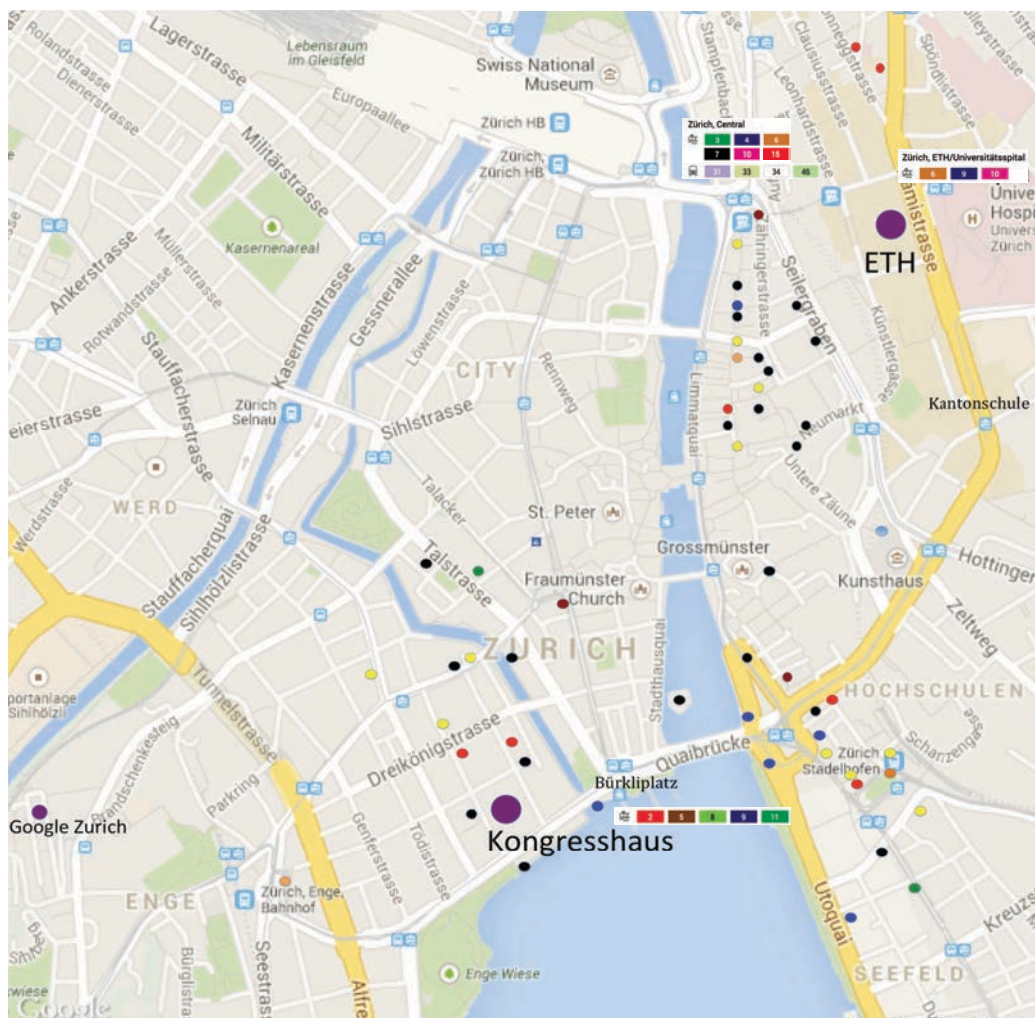


Pocket Guide



European Conference on Computer Vision

Zürich, September 6-12th, 2014



- Restaurant/Bistro
- Vegetarian
- Sausage stand
- Café with food options
- Pizza/Pasta
- Sandwich/Salad
- McDonald's

Message from the General and Program Chairs

Welcome to Zurich !

As you know, the European Conference on Computer Vision is one of the top conferences in computer vision. It was first held in 1990 in Antibes (France) with subsequent conferences in Santa Margherita Ligure (Italy) in 1992, Stockholm (Sweden) in 1994, Cambridge (UK) in 1996, Freiburg (Germany) in 1998, Dublin (Ireland) in 2000, Copenhagen (Denmark) in 2002, Prague (Czech Republic) in 2004, Graz (Austria) in 2006, Marseille (France) in 2008, and Heraklion (Greece) in 2010, and Firenze (Italy) in 2012. Many people have worked hard to turn the 2014 edition into as great a success. We hope you will find this a mission accomplished.

The Chairs have decided to adhere to the classical single-track scheme. In terms of the time ordering, we have decided to largely follow the Firenze example (typically starting with poster sessions, followed by oral sessions), which offers a lot of flexibility to network and is more forgiving for the not-so-early-birds and hard-core gourmets.

A large conference like ECCV requires the help of many. They made sure you again get a full program including the main conference, tutorials, workshops, exhibits, demos, proceedings, video streaming/archive and web descriptions. We want to cordially thank all those volunteers! Please have a look at the conference website to see their names (<http://eccv2014.org/people/>). We also thank our generous sponsors. You will see their logos around at several occasions during the week, and also prominently on the ECCV 2014 website (<http://eccv2014.org/>). Their support has been vital to keep prices low and to enrich the program. And it is good to see such level of industrial interest in what our community is doing!

Please do not forget to take advantage of your free travel pass. It allows you to crisscross our splendid city with its fabulous public transportation.

We hope you will enjoy ECCV 2014 to the full.

Also, willkommen in Zurich!

Marc Pollefeys and Luc Van Gool

General Chairs

Message from the General and Program Chairs

Preface

Welcome to the 2014 European Conference on Computer Vision (ECCV 2014) in Zurich, Switzerland. We are delighted to present you with a strong and exciting program, the result of an extensive review process. In total, we received 1444 paper submissions. Of these, 85 violated the ECCV submission guidelines and were rejected without review. Of the remainder, 363 were accepted (26,7%): 325 as posters (23,9%) and 38 as orals (2,8%). This selection process was a combined effort of 4 Program Co-Chairs (PCs), 53 Area Chairs (ACs), 803 Program Committee Members and 251 additional reviewers.

As Program Co-Chairs we were primarily responsible for the design and execution of the review process. Beyond administrative rejections, we were not directly involved in acceptance decisions. Because the General Co-Chairs were permitted to submit papers, they played no role in the review process and were treated as any other author.

Acceptance decisions were made by the Area Chair Committee. There were 53 ACs in total, selected by the PCs to provide sufficient technical expertise, geographical diversity (21 from Europe, 7 from Asia, and 25 from North America) and a mix of AC experience (7 had no previous AC experience, 18 had served as AC of a major international vision conference once since 2010, 8 had served twice, 13 had served three times, and 7 had served 4 times).

ACs were aided by 803 Program Committee Members to whom papers were assigned for reviewing. There were 251 additional reviewers, each supervised by a Program Committee Member. The Program Committee was based on suggestions from ACs, and committees from previous conferences. Google Scholar Profiles were collected for all candidate

Program Committee Members and vetted by PCs. Having a large pool of Program Committee Members for reviewing allowed us to match expertise while bounding reviewer loads. No more than 9 papers were assigned to any one Program Committee Member, with a maximum of 6 to graduate students.

The ECCV 2014 review process was double blind. Authors did not know the reviewers' identities, nor the ACs handling their paper(s). We did our utmost to ensure that ACs and Reviewers did not know authors' identities, even though anonymity becomes difficult to maintain as more and more submissions appear concurrently on arXiv.org.

Particular attention was paid to minimizing potential conflicts of interest. Conflicts of interest between ACs, Program Committee Members and papers were based on authorship of ECCV 2014 submissions, on their home institutions, and on previous collaborations. To find institutional conflicts, all authors, Program Committee Members, and ACs were asked to list the Internet domains of their current institutions. To find collaborators, the DBLP (www.dblp.org) database was used to find any co-authored papers in years 2010-2014.

We initially assigned approximately 100 papers to each AC, based on affinity scores from the Toronto Paper Matching System and authors AC suggestions. ACs then bid on these, indicating their level of expertise. Based on these bids, and conflicts of interest, approximately 27 papers were assigned to each AC, for which they would act as the Primary AC. The Primary AC then suggested seven reviewers from the pool of Program Committee Members (in rank order) for each paper, from which three were chosen per paper, taking load balancing and conflicts of interest into account.

Message from the General and Program Chairs

Many papers were also assigned a Secondary AC, either directly by the Program Co-Chairs, or as a consequence of the Primary AC requesting the aid of an AC with complementary expertise. Secondary ACs could be assigned at any stage in the process, but in most cases this occurred about two weeks before the final AC meeting. Hence, in addition to their initial load of approximately 27 papers, each AC was asked to handle 3-5 more papers as a Secondary AC; they were expected to read and write a short assessment of such papers. In addition, two of the 53 ACs were not directly assigned papers. Rather, they were available throughout the process to aid other ACs at any stage (e.g., with decisions, evaluating technical issues, additional reviews, etc.).

The initial reviewing period was three weeks long, after which reviewers provided reviews with preliminary recommendations. Three weeks is somewhat shorter than normal, but this did not seem to cause any unusual problems. With the generous help of several last-minute reviewers, each paper received three reviews.

Authors were then given the opportunity to rebut the reviews, primarily to identify any factual errors. Following this, reviewers and Area Chairs discussed papers at length, after which reviewers finalized their reviews and gave a final recommendation to the Area Chairs. Many ACs requested help from Secondary ACs at this time.

Papers, for which rejection was clear and certain, based on the reviews and the Area Chair's assessment, were identified by their Primary ACs and vetted by a Shadow AC prior to rejection. (These shadow ACs were assigned by the PCs). All papers with any chance of acceptance were further discussed at the AC Meeting. Those deemed 'Strong' by Primary ACs (about 140 in total) were also assigned a Secondary AC.

The AC Meeting, with all but two of the Primary ACs present, took place in Zurich. ACs were divided into 17 triplets for each morning, and a different set of triplets for each afternoon. Given the content of the three (or more) reviews along with reviewer recommendations, rebuttals, online discussions among reviewers and Primary ACs, written input from and discussions with Secondary ACs, the AC triplets then worked together to resolve questions, calibrate assessments, and make acceptance decisions.

To select orals, all Strong papers, along with any others put forward by triplets (about 155 in total), were then discussed within four Panels, each comprising 4 or 5 triplets. Each Panel ranked these oral candidates, using four categories. Papers in the two top categories provided the final set of 38 orals.

We want to thank everyone involved in making this ECCV 2014 Program possible. First and foremost, the success of ECCV 2014 depends on the quality of papers submitted by authors, and on the very hard work of reviewers, the Program Committee Members and the Area Chairs. We are particularly grateful to Kyros Kutulakos for his enormous software support before and during the AC meeting, to Laurent Charlin for the use of the Toronto Paper Matching System, and Chaohui Wang for help optimizing the assignment of papers to ACs. We also owe a debt of gratitude for the great support of Zurich local organizers, especially Susanne Keller and her team.

Enjoy the 2014 European Conference on Computer Vision!

**David Fleet, Tomas Pajdla, Bernt Schiele,
Tinne Tuytelaars**

Program Committee Co-Chairs, ECCV 2014

Organizing Committee & Area Chairs

Eccv 2014 Organizing Committee

General Chairs:	Marc Pollefeys Luc Van Gool	Exhibition Chair:	Jeff Delmerico AparnaTaneja
Program Chairs:	David Fleet Tomas Pajdla Bernt Schiele Tinne Tutelaars	Finance Chair:	Amaël Delaunoy
Local Arrangement Chair:	Vittorio Ferrari Konrad Schindler	Publications Chairs:	Mario Fritz Michael Stark
Workshops Chairs:	Lourdes Agapito Michael Bronstein Carsten Rother	Website Chairs:	Bastien Jacquet Lorenz Meier
Tutorials Chair:	Paolo Favaro Christoph Lampert Bastian Leibe	Industrial Liason Chairs:	Alex Sorkine-Hornung Fatih Porikli
Demos Chair:	Jan-Michael Frahm Davide Scaramuzza	Student Volunteer Chairs:	Andrea Cohen Ralf Dragon Laura Leal-Taixé
Poster Chair:	Helmut Grabner	Student Grant Chair:	Seon Joo Kim
		Student Accommod. Chair:	Maros Blaha
		Technical Chair:	Thorsten Steenbock
		Conference Coordinator:	Susanne H.Keller

ECCV 2014 Area Chairs

Lourdes Agapito	Hervé Jégou	Stefan Roth
Sameer Agarwal	Fredrik Kahl	Carsten Rother
Shai Avidan	Kyros Kutulakos	Sudeep Sarkar
Alex Berg	Christoph Lampert	Silvio Savarese
Yuri Boykov	Ivan Laptev	Christoph Schnoerr
Thomas Brox	Kyoung Mu Lee	Jamie Shotton
Jason Corso	Bastian Leibe	Kaleem Siddiqi
Trevor Darrell	Vincent Lepetit	Leonid Sigal
Fernando De la Torre	Hongdong Li	Noah Snavely
Frank Dellaert	David Lowe	Raquel Urtasun
Alexei Efros	Greg Mori	Andrea Vedaldi
Vittorio Ferrari	Srinivasa Narasimhan	Jakob Verbeek
Andrew Fitzgibbon	Nassir Navab	Xiaogang Wang
Jan-Michael Frahm	Ko Nishino	Ming-Hsuan Yang
Bill Freeman	Maja Pantic	Lihi Zelnik-Manor
Peter Gehler	Patrick Pérez	Song-Chun Zhu
Kristen Graumann	Pietro Perona	Todd Zickler
Wolfgang Heidrich	Ian Reid	

Saturday, September 6

0730–1830 Registration (Main Hall, ETH)

W01 VISART

Where Computer Vision Meets Art

Organizers: Gustavo Carneiro
Alessio Del Bue
Joao Paulo Costeira

Location: F3

Schedule: Full Day

0900 Workshop opening

0915 **Invited Talk:** Automated Analysis of Painting and
Photographic Arts, James Wang

S1: Computational Aesthetic (1000–1100)

1000 JenAesthetics Subjective Dataset: Analyzing Paintings
by Subjective Scores, *Seyed Ali Amirshahi, Gregor Uwe
Hayn-Leichsenring, Joachim Denzler and Christoph
Redies, Friedrich Schiller University of Jena*

1020 Relationship Between Visual Complexity and
Aesthetics: Application to Beauty Prediction of Photos,
*Litian Sun, Toshihiko Yamasaki and Kiyoharu Aizawa,
The University of Tokyo*

1040 Computational Beauty: Aesthetic Judgment at the
Intersection of Art and Science, *Emily Spratt and
Ahmed Elgammal, Princeton University and Rutgers
University*

1100 Coffee Break

1115 **Invited Talk:** Online Collaboration in the e-Humanities,
Hans Brandhorst

S2: Deep Feature Analysis for Art Recognition (1200–1240)

1200 In Search of Art, *Elliot Crowley and Andrew Zisserman,
University of Oxford*

1220 Classification of Artistic Styles using Binarized Features
Derived from a Deep Neural Network, *Yaniv Bar, Noga
Levy and Lior Wolf, Tel Aviv University*

1240 Lunch Break

1400 **Invited Talk:** A New Presentation of Parmigianino's
Self Portrait in a Convex Mirror, David Stork

S3: Composition of Art for Detection and Retrieval (1445– 1545)

1445 Re-presentations of Art Collections, *Joon Son Chung,
Relja Arandjelovic, Giles Bergel, Alexandra Franklin and
Andrew Zisserman, University of Oxford*

1505 Detecting People in Cubist Art, *Shiry Ginosar, Daniel
Haas, Timothy Brown and Jitendra Malik, University of
California, Berkeley*

1525 Artistic Image Analysis using the Composition of
Human Figures, *Qian Chen and Gustavo Carneiro,
University of Adelaide*

1545 Coffee Break

1600 **Invited Talk:** Computer Vision for Interactive
Experiences with Art and Artistic Documents,
Rita Cucchiara

S4: Ancient Art Analysis (1645–1725)

1645 Graph-based Shape Similarity of Petroglyphs,
*Markus Seidl, Ewald Wieser, Matthias Zeppelzauer, Axel
Pinz and Christian Breiteneder, Fachhochschule St.
Pölten University of Applied Sciences, Graz University of
Technology and Vienna University of Technology*

1705 Improving Ancient Roman Coin Recognition with
Alignment and Spatial Encoding, *Jongpil Kim and
Vladimir Pavlovic, Rutgers University*

1725 Panel session and closure

W02 Computer Vision in Vehicle Technology with Special Session in Micro Aerial Vehicles

Organizers: David Geronimo
Friedrich Fraundorfer

Location: D7.1

Schedule: Full Day

0830 Welcome

0840 **Keynote Talk:** Spline-Based Sliding-Window Filtering for Motion Estimation using Rolling Shutter Cameras, Paul Furgale (*ETH Zurich*)

0925 **Invited Session:** 3D Reconstruction on Mars, by Tomas Pajdla (*Czech Technical University in Prague*)

1010 Oral 1: Vision-based Vehicle Localization using a Visual Street Map with Embedded SURF Scale, David Wong, Daisuke Deguchi, Ichiro Ide, Hiroshi Murase (*Nagoya University*)

1030 Coffee Break

1100 Oral 2: Approximated Relative Pose Solvers for Efficient Camera Motion Estimation, Jonathan Ventura, Clemens Arth, Vincent Lepetit (*TU Graz*)

1120 Oral 3: Augmenting vehicle localization accuracy with cameras and 3D road infrastructure database, Lijun Wei, Bahman Soheilian, Valérie Gouet-Brunet (*IGN*)

1140 **Keynote Talk:** Looking Beyond a Window: Perceiving the 3D world from a Moving Vehicle, Silvio Savarese (*Stanford University*)

1225 Lunch Break

1400 **Invited Session:** CV for Micro Aerial Vehicles: by Friedrich Fraundorfer (*TUM*), Davide Scaramuzza (*University of Zurich*) and Marc Pollefeys (*ETH Zurich*)

1500 Oral 4: Autonomous Approach and Landing for a Low-Cost Quadrotor Using Monocular Cameras, Sergiu Dotenco, Florian Gallwitz (*Nuremberg Institute of Technology*), Elli Angelopoulou (*Friedrich-Alexander University Erlangen-Nürnberg*)

1515 Oral 5: A Low-level Active Vision Framework for Collaborative Unmanned Aircraft Systems, Martin Danelljan, Fahad Shahbaz Khan, Michael Felsberg, Karl Granström, Fredrik Heintz, Piotr Rudol, Mariusz Wzorek, Jonas Kvarnström, Patrick Doherty (*Linköping University*)

1530 Coffee Break

1600 **Keynote Talk:** Fisheye Cameras for 3D Modelling and Robot Navigation, Christoph Strecha (*EPFL*)

1645 Oral 6: Online 3D Reconstruction and 6-DOF Pose Estimation using RGB-D Video, Hyon Lim (*Seoul National University*), Jongwoo Lim (*Hanyang University*), Hyoun Jin Kim (*Seoul National University*)

1700 Oral 7: Nature Conservation Drones for Automatic Localization and Counting of Animals, Jan Van Gemert (*University of Amsterdam*), Camiel Verschoor (*Dutch Unmanned Aerial Solutions & IDI Snowmobile*), Pascal Mettes (*University of Amsterdam*), Kitso Epema (*Dutch Unmanned Aerial Solutions*), Lian Pin Koh (*University of Adelaide*), Serge Wich (*University of Amsterdam & Liverpool John Moores University*)

1715 Oral 8: Real-time Accurate Geo-localization of a MAV with Omnidirectional Visual Odometry and GPS, Johannes Schneider, Wolfgang Förstner (*University of Bonn*)

1730 Demo Session (**live demos in CNB D102 – see map**)

1830 Workshop Closing



W03 Spontaneous Facial Behavior Analysis

Organizers: Guoying Zhao
Stefanos Zafeiriou
Matti Pietikäinen
Maja Pantic

Location: D3.2

Schedule: Full Day

0830 Opening words

0840 **Invited Talk 1:** Predicting decisions and intentions from spontaneous facial expressions, Prof. Marian Bartlett (*University of California, San Diego, USA*)

0940 Oral 1: Statistically Learned Deformable Eye Models, *Joan Alabort-i-Medina, Stefanos Zafeiriou, and Bingqing Qu (Imperial College London, UK).*

1010 Coffee Break

1030 **Invited Talk 2:** Facial behaviour in communication (tentative), prof. Richard Bowden (*University of Surrey*)

1130 Oral 2: Quantifying Micro-expressions with Constraint Local Model and Local Binary Pattern, *Wen-Jing Yan, Su-jing Wang, Yu-Hsin Chen, Guoying Zhao, Xiaolan Fu (Chinese Academy of Sciences and University of Oulu, Finland).*

1200 Lunch Break

1400 **Invited Talk 3:** Prof. Jeffrey Cohn (*University of Pittsburgh, USA*)

1450 Oral 3: Audiovisual Conflict Detection in Political Debates, *Yannis Panagakis, Stefanos Zafeiriou, and Maja Pantic (Imperial College London, UK).*

1520 Coffee Break

1540 **Invited Talk 4:** Computational Face (tentative) by Prof. Fernando De la Torre (*Robotics Institute at CMU, USA*)

1640 Oral 4: Analysing user visual implicit feedback in enhanced TV scenarios, *Ioan Marius Bilasco, Adel Lablack, and Taner Danisman (Université Lille 1, France)*

1710 Oral 5: Micro-expression Recognition using Robust Principal Component Analysis and Local Spatiotemporal Directional Features, *Su-jing Wang, Wen-Jing Yan, Guoying Zhao, Xiaolan Fu (Chinese Academy of Sciences and University of Oulu, Finland).*

1740 Closing

W04 Consumer Depth Cameras for Computer Vision

Organizers: Andrea Fossati
Juergen Gall
Miles Hansard

Location: E3

Schedule: Full Day

0850 Welcome and Introduction

0900 **Invited Talk:** Your mobile phone as a depth camera,
Marc Pollefeys (*ETH Zurich*)

1000 Coffee Break

Oral Session 1: People and applications 1030-1230):

1030 Exploiting Pose Information for Gait Recognition from
Depth Streams, *Pratik Chattopadhyay, Shamik Sural,
Jayanta Mukherjee, IIT Kharagpur*

1100 3D Hand Pose Detection in Egocentric RGB-D Images,
*Gragory Rogez, Maryam Khademi, J. S. Supancic III,
University of California, Irvine; J. M. M. Montiel,
Universidad de Zaragoza; Deva Ramanan, University of
California, Irvine*

1130 Assessing the Suitability of the Microsoft Kinect for
Calculating Person Specific Body Segment
Parameters, *Sean Clarkson, Jon Wheat, Ben Heller,
Simon Choppin, Sheffield Hallam University*

1200 Visualization of Temperature Change using RGB-D
Camera and Thermal Camera, *Wataru Nakagawa,
Kazuki Matsumoto, Francois Sorbier, Maki Sugimoto,
Hideo Saito, Keio University; Shuji Senda, Shibata
Takashi, Akihiko Iketani, NEC Corporation*

1230 Lunch Break

1400 **Invited Talk:** Accurate and Compact Surface Models
for Mobile Service Robots, *Wolfram Burgard (Uni
Freiburg)*

1500 Coffee Break

Oral Session 2: SLAM and 3D reconstruction (1530-1730):

1530 SlamDunk: Affordable Real-Time RGB-D SLAM, *Nicola
Fioraio, Luigi Di Stefano, University of Bologna*

1600 On calibration of a low-cost time-of-flight camera,
*Alina Kuznetsova, Bodo Rosenhahn, Leibniz University
Hannover*

1630 A two-stage strategy for real-time dense 3D
reconstruction of large-scale scenes, *Diego Thomas,
Akihiro Sugimoto, National Institute of Informatics,
Tokyo*

1700 An Active Patch Model for Real World Appearance
Reconstruction, *Farhad Bazyari, Georgios
Tzimiropoulos, Nigel Allinson, University of Lincoln*

1730 Closing Remarks

W05 ChaLearn Looking at People: pose recovery, action/interaction, gesture recognition – Day 1

Organizers: Sergio Escalera
Jordi González
Xavier Baró
Isabelle Guyon
Jamie Shotton

Location: D1.1

Schedule: Two full days (Saturday + Sunday)

0900 Opening: Presentation of the Workshop

0915 **Invited Speaker 1:** Adrian Hilton (*University of Surrey, UK*)

1000 **Session 1: Challenge results presentation and award ceremony**

1. ChaLearn Looking at People Challenge 2014: Dataset and Results; *Sergio Escalera, Xavier Baró, Jordi González, Miguel A. Bautista, Meysam Madadi, Miguel Reyes, Víctor Ponce, Hugo J. Escalante, Jamie Shotton, Isabelle Guyon*

1030 Coffee Break

1100 **Session 2: ChaLearn Track 3 – Winner methods**

1. Multi-scale deep learning for gesture detection and localization; *Natalia Neverova, Christian Wolf, Graham W. Taylor and Florian Nebout*
2. A Multi-scale Boosted Detector for Efficient and Robust Gesture Recognition; *Camille Monnier, Stan German and Andrey Ost*
3. Nonparametric Gesture Labeling from Multi-modal Data; *Ju Yong Chang*

1200 **Session 3: ChaLearn Track 2 – Winner methods**

1. Action and Gesture Temporal Spotting with Super Vector Representation; *Xiaojiang Peng, Limin Wang, Zhuowei Cai and Yu Qiao*
2. Mixture of Heterogeneous Attribute Analyzers for Human Action Detection; *Yong Pei, Bingbing Ni and Indriyati Atmosukarto*

3. Action Detection with Improved Dense Trajectories and Sliding Window; *Zhixin Shu, Kiwon Yun and Dimitris Samaras*

1300 Lunch Break

1400 **Invited Speaker 2:** Carol Neidle (*Boston University, USA*)

1430 **Session 4: ChaLearn Track 3**

1. Deep Dynamic Neural Networks for Gesture Segmentation and Recognition; *Di Wu and Ling Shao*
2. Sign Language Recognition Using Convolutional Neural Networks; *Lionel Pigou, Sander Dieleman, Pieter-Jan Kindermans and Benjamin Schrauwen*
3. Gesture Recognition using Template Based Random Forest Classifiers; *Necati Cihan Camgöz, Ahmet Alp Kindiroglu and Lale Akarun*

1530 Coffee Break

1600 Invited Speaker 3: Dimitris Metaxas (*Rutgers, USA*)

1630 **Session 5: ChaLearn Track 3**

1. Continuous gesture recognition from articulated poses; *Georgios D. Evangelidis, Gurkirt Singh and Radu Horaud*
2. Multi-modality Gesture Detection and Recognition With Un-supervision, Randomization and Discrimination; *Guang Chen, Daniel Clarke, David Weikersdorfer, Manuel Giuliani, Andre Gaschler and Alois Knoll*
3. Multi-modal Gesture Recognition Using Skeletal Joints and Motion Trail Model; *Bin Liang and Lihong Zheng*

1730 Closing

W06 Video Event Categorization, Tagging and Retrieval towards Big Data

Organizers: Thomas S. Huang
Tieniu Tan
Yun Raymond Fu
Ling Shao
Jianguo Zhang
Liang Wang

Location: D1.2

Schedule: Afternoon

- 1320 Begin with Chair 10 minutes talk, Dr. Yun Raymond Fu, *Northeastern University, Boston, USA*;
Dr. Ling Shao, *The University of Sheffield, UK*;
Dr. Jianguo Zhang, *University of Dundee, UK*;
Prof. Liang Wang, *Chinese Academy of Sciences, China*
- 1330 Learning spatio-temporal features for action recognition with modified hidden conditional random field, Wanru Xu, Zhenjiang Miao (*Institute of Information Science, Beijing Jiaotong University, China*), Jian Zhang (*Advanced Analytics Institute, School of Software, University of Technology, Sydney, Australia*), Yi Tian (*Institute of Information Science, Beijing Jiaotong University, China*)
- 1350 Camera Calibration and Shape Recovery from videos of Two Mirrors, Quanxin Chen, Hui Zhang (*United International College, China*)
- 1410 Efficient Online Spatio-Temporal Filtering for Video Event Detection, Xinchen Yan (*Shanghai Jiao Tong University, China*), Junsong Yuan, Hui Liang (*Nanyang Technological University, Singapore*)
- 1430 Grading Tai Chi Chuan Performance in Competition with RGBD sensors, Hui Zhang, Haipeng Guo, Chaoyun Liang (*United International College*)

1450 Coffee Break

1515 Keynote Talk: Dimitris N. Metaxas (*Rutgers University*)

- 1600 Activity Recognition from Still Images with Transductive Non-negative Matrix Factorization, Naiyang Guan (*National University of Defense Technology, China*), Dacheng Tao (*University of Technology, Australia*), Long Lan, Zhigang Luo, Xuejun Yang (*National University of Defense Technology, China*)
- 1620 Human Action Recognition by Random Features and Hand-Crafted Features: A Comparative Study, Haocheng Shen, Jianguo Zhang (*Dundee University, UK*), Hui Zhang (*United International College*)
- 1640 Mode-driven Volume Analysis based on Correlation of Time Series, Chengcheng Jia (*Northeastern University, USA*), Wei Pang (*University of Aberdeen, UK*), Yun Fu (*Northeastern University, USA*)
- 1700 Modeling Supporting Regions for Close Human Interaction Recognition, Yu Kong, Yun Fu (*North Eastern University, USA*)
- 1720 Chair wrap up

W07 Computer Vision with Local Binary Pattern Variants

Organizers: Abdenour Hadid
Stan Z. Li
Jean-Luc Dugelay

Location: F5

Schedule: Full Day

0900 Welcome and Opening

0905 **Keynote Talk 1:** Recent Advances in Local Binary Patterns, Prof. Matti Pietikäinen (*University of Oulu, Finland*)

0950 Weight-optimal Local Binary Patterns, *Felix Juefei-Xu, Marios Savvides (Carnegie Mellon University)*

1010 Impact of topology-related attributes from Local Binary Patterns on texture classification, *Thanh Phuong Nguyen, Antoine Manzanera (ENSTA Paristech), Walter G. Kropatsch (PRIP)*

1030 **Coffee Break**

1100 On the Effects of Illumination Normalization with LBP-Based Watchlist Screening, *Ibtihel Amara, Eric Granger (ETS, Université du Québec, Canada), Abdenour Hadid (University of Oulu, Finland)*

1120 Analysis of sampling techniques for learning binarized statistical image features using fixations and saliency, *Hamed Rezazadegan, Janne Heikkilä, Esa Rahtu (University of Oulu)*

1140 Fast Features Invariant to Rotation and Scale of Texture, *Milan Sulc, Jiří Matas (Center for Machine Perception)*

1200 Facial Expression Analysis Based on High Dimensional Binary Features, *Samira Ebrahimi Kahou, Christopher Pal, Pierre Froumenty (Ecole Polytechnique Montreal)*

1220 **Lunch Break**

1400 Micro-Facial Movements: An Investigation on Spatio-Temporal Descriptors, *Adrian Davison, Moi Hoon Yap, Nicholas Costen, Kevin Tan (Manchester Metropolitan University), Cliff Lansley (Emotional Intelligence*

Academy), Daniel Leightley (Manchester Metropolitan University)

1420 Gait-based Person Identification using Motion Interchange Patterns, *Gil Freidlin, Noga Levy, Lior Wolf (Tel Aviv University)*

1440 Some faces are more equal than others: Hierarchical organization for accurate and efficient large-scale identity-based face retrieval, *Binod Bhattarai (CNRS), Gaurav Sharma (Rennes Research and Innovation Center), Frederic Jurie (Universite de Caen Basse-Normandie), Patrick Perez (Rennes Research and Innovation Center)*

1500 Local Binary Patterns to Evaluate Trabecular Bone Structure from Micro-CT Data: Application to Studies of Human Osteoarthritis, *Jérôme Thevenot, Jie Chen, Mikko Finnilä (University of Oulu), Miika Nieminen, Petri Lehenkari, Simo Saarakkala (University of Oulu and Oulu University Hospital), Matti Pietikäinen (University of Oulu)*

1520 **Coffee break**

1600 **Keynote Talk 2:** Evaluation of real-time LBP computing in multiple architectures, *Miguel Bordallo Lopez (University of Oulu, Finland)*

1645 **Best paper award and closing**

W08 Reconstruction Meets Recognition Challenge (RMRC)

Organizers: Nathan Silberman
Raquel Urtasun
Andreas Geiger
Derek Hoiem
Sanja Fidler
Antonio Torralba
Rob Fergus
Philip Lenz
Jianxiong Xiao

Location: D7.2

Schedule: Full Day

0830 Introduction and Overview

0850 Session 1: Reconstruction I

- Stereo
- Optic Flow
- Visual Odometry

1000 Coffee Break

1030 **Invited Speaker:** Vladlen Koltun (*Adobe*)

1100 Session 2: Reconstruction II

- Indoor Depth from RGB
- Indoor Normals from RGB

1200 Lunch Break

1330 **Invited Speaker:** Bastian Leibe (*RWTH Aachen*)

1400 Session 3: Recognition I

- Outdoor Detection
- Indoor Semantic Segmentation

1530 Coffee Break

1600 **Invited Speaker:** Ashutosh Saxena (*Cornell University*)

1630 Session 4: Recognition II

- Outdoor Tracking
- Indoor Instance Segmentation

1730 Closing and Discussion

W09 Visual Object Tracking Challenge

Organizers: Roman Pflugfelder
Matej Kristan
Ales Leonardis
Jiri Matas

Location: F7

Schedule: Full Day

Session 1 (0900-1030):

0900 The Visual Object Tracking VOT2014 Challenge Results

1030 Coffee Break

Session 2 (1100-1215):

1100 Presentation from the winners of the challenge

1125 Weighted Update and Comparison for Channel-Based Distribution Field Tracking, *Kristoffer Öfjäll, Michael Felsberg (Linköping University)*

1150 Exploiting contextual motion cues for visual object tracking, *Stefan Duffner, Christophe Garcia (LIRIS)*

1215 Lunch Break

Session 3 (1345-1510):

1345 **Keynote Talk**

1445 Clustering Local Motion Estimates for Robust and Efficient Object Tracking, *Mario Maresca, Alfredo Petrosino (University of Naples Parthenope)*

1510 Coffee Break

1540 A Scale Adaptive Kernel Correlation Filter Tracker with Feature Integration, *Yang Li, Jianke Zhu (College of Computer Science, Zhejiang University)*

1605 **Panel Discussion**

1720 Concluding remarks

T1 Understanding the In-Camera Image Processing Pipeline for Computer Vision

Organizers: Michael Brown
Seon Joo Kim

Time: 0900-1230 (1030-1100 Coffee Break)

Location: E1.2

Description: Image processing and computer vision algorithms often treat a camera as a light measurement device, where pixel intensities represent meaningful physical measurements of the imaged scene. However, modern digital cameras are anything but light measuring devices, with a wide range of on-board processing, including noise reduction, white balance, and various color rendering options (e.g. landscape, portrait, vivid mode). This on-board processing is often how camera manufacturers distinguish themselves among competitors, resulting in two different cameras producing noticeably different output images (sRGB) for the same scene. This raises the question if meaningful values can be obtained from camera objects. In this tutorial we will overview the camera imaging pipeline and discuss various methods that have addressed how to reverse this processing to obtain meaningful physical values from digital photographs.

Schedule:

Part 1: Preliminaries

- Motivation
- Review on color/color spaces (CIE XYZ, CIE RGB, sRGB)
- Overview of the camera imaging pipeline

Part 2: Modeling the in-camera color pipeline

- Building 3D LUTs
- Applications (photo re-finishing)
- Summary

T2 Capturing 3D Deformable Models from the Real World

Organizers: Kiran Varanasi
Edilson de Aguiar

Time: 0900-1230 (1030-1100 Coffee Break)

Location: E1.1

Description: Computer vision technologies are yet to make a great impact in performance-critical areas such as graphics production for the entertainment industry and bio-mechanical modelling for medicine and sports. For these purposes, it is necessary to build accurate and editable 3D deformation models. Computer graphics has traditionally approached this requirement from the other side, using detailed hand-crafted models that are suited to the specific purpose. But data-driven deformation models, inspired partly from advances in computer vision, are getting increasingly popular due to their greater realism. With relatively cheap consumer-grade capture technologies, robust 3D deformation models can be built from the “big-data” of 3D deformations. It is an exciting opportunity for computer vision researchers to contribute to several new real-world applications.

Robust deformable models are also a powerful tool for solving challenging computer vision problems, as they provide more accurate priors than can be obtained from the images themselves. However, the knowledge of 3D surface deformation methods and 3D geometry processing is not as wide-spread in the computer vision community as it is in computer graphics. In this tutorial, we aim to bridge this gap.

Schedule/Topics

- Introduction to 3D mesh deformation and pose manipulation through a rig.
- Performance capture: obtaining a temporally consistent 3D mesh sequence from multi-view video input.
- **Coffee Break**
- Editing a captured mesh animation in post by fitting a skeleton rig.
- Building a 3D statistical deformable model from a captured mesh sequence & its applications in computer vision.

T3 Theory and Methods of Lightfield Photography

Organizer: Todor Georgiev
Andrew Lumsdaine

Time: 1330-1800 (1530-1600 Coffee Break)

Location: E1.2

Description: Computational photography focuses on capturing and processing discrete representations of all the light rays in the 3D space of a scene. Compared to conventional photography, which captures 2D images, computational photography captures the entire 4D "lightfield," i.e., the full 4D radiance. To multiplex the 4D radiance onto conventional 2D sensors, light-field photography demands sophisticated optics and imaging technology. At the same time, 2D image creation is based on creating 2D projections of the 4D radiance.

This course presents light-field analysis in a rigorous, yet accessible, mathematical way, which often leads to surprisingly direct solutions. The mathematical foundations will be used to develop computational methods for lightfield processing and image rendering, including digital refocusing and perspective viewing. While emphasizing theoretical understanding, we also explain approaches and engineering solutions to practical problems in computational photography.

T4 Higher Order Models and Inference Approaches in Computer Vision

Organizer: Vibhav Vineet
Philipp Kraehenbuehl
Lubor Ladicky
Pushmeet Kohli
Philip Torr

Time: 0900-1730 (1230-1400 Lunch Break,
1030-1100 / 1530-1600 Coffee Break)

Location: E7

Description: Probabilistic models such as Markov Random Field (MRF) and Conditional Random Field (CRF) have long formed a basis for solving challenging assignment problems that are encountered while understanding images and scenes. Computational concerns had limited these models to encode only unary and/or pairwise terms. Although these methods had produced good results, recent studies have also shown the importance of incorporating higher order relations between scene elements. Examples include label consistency over large regions, contextual information, topological constraints, connectivity in 3D and symmetry priors which are also shown to be formulated in MRF/CRF frameworks. The goal is to estimate properties such as the most probable (MAP) solutions and marginal distributions to enable learning and inference in these models. Arguably the most popular approaches for solving these problems are graph-cuts and filter-based mean-field methods. We expect to delve deep into the analysis, properties and comparison of these approaches.

Schedule/Topics

- Higher Order Models in Computer Vision
- Graphcuts
- Meanfield
- Learning with Higher order Loss functions
- Software & Applications
- Future challenges

Sunday, September 7

0730–1830 Registration (Main Hall, ETH)

W05 ChaLearn Looking at People: pose recovery, action/interaction, gesture recognition – Day 2

Organizers: Sergio Escalera
Jordi González
Xavier Baró
Isabelle Guyon
Jamie Shotton

Location: D1.1

Schedule: Two full days (Saturday + Sunday)

0900 Opening

0905 **Invited Speaker 4:** Fernando De la Torre (*Carnegie Mellon University, USA*)

0950 **Session 6: Human Body Models**

1. Increasing 3D Resolution of Kinect Faces; *Stefano Berretti, Pietro Pala and Alberto del Bimbo*
2. Subspace Procrustes Analysis; *Xavier Perez-Sala, Fernando De la Torre, Laura Igual, Sergio Escalera and Cecilio Angulo*

1030 **Coffee Break**

1100 **Invited Speaker 5:** Jeffrey Cohn (*Pittsburgh University, USA*)

1200 **Session 7: Human Poses and Parts**

1. Easy Minimax Estimation with Random Forests for Human Pose Estimation; *P. Daphne Tsatsoulis, David Forsyth*
2. Learning to Segment Humans by Stacking their Body Parts; *Eloi Puertas, Miguel A. Bautista, Dani Sanchez, Sergio Escalera and Oriol Pujol*

3. G3Di: A Gaming Interaction Dataset and Real Time Interaction Evaluation Framework; *Victoria Bloom, Vasileios Argyriou and Dimitrios Makris*

1300 **Lunch Break**

1400 **Invited Speaker 6:** Cristian Sminchisescu (*Lund University*)

1430 **Session 8: Multiple Cameras**

1. Three-Dimensional Hand Pointing Recognition using Two Cameras by Interpolation and Integration of Classification Scores; *Dai Fujita and Takashi Komuro*
2. Video-based Action Detection using Multiple Wearable Cameras; *Kang Zheng, Yuewei Lin, Youjie Zhou, Dhaval Salvi, Xiaochuan Fan, Dazhou Guo, Zibo Meng and Song Wang*
3. Multiple Human Pose Estimation with Temporally Consistent 3D Pictorial Structures; *Vasileios Belagiannis, Xinchao Wang, Bernt Schiele, Pascal Fua, Slobodan Ilic and Nassir Navab*

1530 **Coffee Break**

1600 **Invited Speaker 7:** Richard Bowden (*University of Surrey, UK*)

1630 Closing: Conclusions the workshop

W10 Computer vision+ONTology Applied Cross-disciplinary Technologies (CONTACT)

Organizers: Marco Cristani
Robert Ferrario
Jason Corso

Location: D3.2

Schedule: Full Day

0900 Opening

0905 **Keynote Talk:** TBA, Fei-Fei Li (*Stanford University*)

1005 Uncertainty Modeling Framework for Constraint-based
Elementary Scenario Detection in Vision System,
Crispin-Junior C. and Bremond F.

1030 **Coffee Break**

1115 Mixing Low-Level and Semantic Features for Image
Interpretation, *Donadello I. and Serafini L.*

1140 Events detection using a video-surveillance Ontology
and a rule-based approach, *Kazi Y., Lablack A, Ghomari
A. and Bilasco I.M.*

1205 Semantic-Analysis Object Recognition: Automatic
Training Set Generation Using Textual Tags, *Abdulhak
S. A., Riviera W, Zeni N., Cristani M., Ferrario R. and
Cristani M.*

1230 **Lunch Break**

1400 **Keynote Talk:** What can Ontological Realism and
Referent Tracking contribute to computer vision?,
Werner Ceusters (*New York State Center of Excellence
in Bioinformatics & Life Sciences, USA*)

1500 Characterizing predicate arity and spatial structure for
inductive learning of game rules, *Dwibedi D. and
Mukerjee A.*

1525 SceneNet: A Perceptual Ontology for Scene
Understanding, *Kadar I. and Ben-Shahar O.*

1550 Awards

1600 **Coffee Break**

1645 Multi-entity bayesian networks for knowledge-driven
analysis of ICH content, *Nikolopoulos S., Chantas G.,
Kompatsiaris I., Grammalidis N., Dimitropoulos K.,
Kitsikidis A. and Douka S*

1710 ALC(F): a new description logics for spatial reasoning in
images, *Hudelot C., Atif J. and Bloch I.*

1735 Perceptual Narratives of Space and Motion for
Semantic Interpretation of Visual Data, *Suchan J.,
Bhatt M. and Santos P. E.*

1800 Closing

W11 Visual Perception of Affordances and Functional Visual Primitives for Scene Analysis

Organizers: Karthik Mahesh Veradarajan
Alireza Fathi
Jürgen Gall
Markus Vincze

Location: D7.1

Schedule: Full Day

0830 Introduction

Session 1: Affordances in Computer Vision

0845 **Invited Talk:** Revisiting Gibsonian Affordances, Prof. Abhinav Gupta (CMU)

0930 Affordances in Video Surveillance, *Agheleh Yaghoobi, Hamed Rezazadegan Tavakoli, Juha Roening, University of Oulu*

0935 Affordance-based Object Recognition using Interactions obtained from a Utility Maximization Principle, *Tobias Kluth, David Nakath, Thomas Reineking, Christoph Zetsche, Kerstin Schill, University of Bremen*

0950 Detecting Fine-grained Affordances with an Anthropomorphic Agent Model, *Viktor Seib, Nicolai Wojke, Malte Knauf, Dietrich Paulus, University of Koblenz-Landau*

1005 Coffee Break + Posters

1035 **Invited Talk:** Functional Indoor Scene Interpretation, Prof. Derek Hoiem (UIUC)

1120 Open discussion on papers and vision for future research

1200 Lunch Break + Posters

1330 **Invited Talk:** Let's Reason About Object Affordance, Prof. Fei-Fei Li (Stanford University)

Session 2: Psychophysics and Neurobiology/ Cognitive Modeling of Affordances

1415 A Bio-Inspired Robot With Visual Perception of Affordances, *Oscar Chang, Univ. Central de Venezuela*

1430 Integrating Object Affordances with Artificial Visual Attention, *Jan Tuennermann, Christian Born, Baerbel Mertsching, Univ. Paderborn*

1445 Modeling Primate Control of Grasping for Robotic Applications, *Ashley Kleinhans, CSIR S Africa; Serge Thill, Univ. of Skoevde; Benjamin Rosman, CSIR S Africa; Renaud Detry, Univ. of Liege; Bryan Tripp, Univ. of Waterloo*

1500 Coffee Break + Posters

Session 3: Affordances in Cognitive Robotics

1530 **Invited Talk:** RoboBrain: Learning Physically-Grounded Affordances, Prof. Ashutosh Saxena (Cornell Univ).

1615 OBELISK: Novel Knowledgebase of Object Features and Exchange Strategies, *David Cabaneros Blanco, Ana Belen Rodriguez Arias, Victor Fernandez-Carbajales Canete, Joaquin Canseco Suarez, Treelogic S.A.*

1630 How Industrial Robots Benefit from Affordances, *Kai Zhou, Martijn Rooker, Sharath Chandra Akkaladevi, Gerald Fritz, Andreas Pichler, Profactor GmbH*

1635 Aspect Transition Graph: an Affordance-Based Model, *Li Yang Ku, Shiraj Sen, Erik G. Learned-Miller, Roderic A. Grupen, Univ. of Mass. Amherst*

1650 **Invited Talk:** Affordances for Robotics, Prof. Aaron Bobick (Georgia Tech.)

1735 Open discussion on papers and vision for future research

1815 Closing Remarks

W12 Graphical Models in Computer Vision

Organizers: Michael Yang
Qinfeng (Javen) Shi
Sebastian Nowozin

Location: E3

Schedule: Full Day

0830 Registration

0900 Introduction: Sebastian Nowozin (*MSRC*)

0910 **Keynote Talk:** Stephen Gould (*ANU*)

1010 Feedback Loop between High Level Semantics and Low Level Vision, *Varun K. Nagaraja, Vlad I. Morariu, Larry S. Davis*

1035 Coffee Break

1110 **Keynote Talk:** Raquel Urtasun (*University of Toronto*)

1210 Lunch Break

1400 **KeynoteTalk:** Joerg Hendrik Kappes (*University of Heidelberg*)

1500 How to Supervise Topic Models, *Cheng Zhang, Hedvig Kjellstroem*

1525 Coffee Break

1600 **Keynote Talk:** Pushmeet Kohli (*MSRC*)

1700 Instance Segmentation of Indoor Scenes using a Coverage Loss, *Nathan Silberman, David Sontag, Rob Fergus*

1725 MAP-Inference on Large Scale Higher-Order Discrete Graphical Models by Fusion Moves, *Joerg Hendrik Kappes, Thorsten Beier and Christoph Schnoerr*

1750 Closing Remarks

W13 Human-Machine Communication for Visual Recognition and Search

Organizers: Adriana Kovashka
Kristen Grauman
Devi Parikh

Location: F3

Schedule: Full Day

0900 Introduction

0910 **Invited Talk:** James Hays (*Brown University*)

0940 **Invited Talk:** Ashish Kapoor (*Microsoft Research*)

1010 Best abstract oral

1030 Coffee Break

1100 Poster Spotlights (3min per poster)

1140 Posters Session (1140-1240):

- Interactive Image Annotation with Visual Feedback, *Julia Moehrmann and Gunther Heidemann (University of Osnabrueck)*
- Towards Transparent Systems: Semantic Characterization of Failure Modes, *Aayush Bansal (CMU), Ali Farhadi (University of Washington) and Devi Parikh (Virginia Tech)*
- Transformative Crowdsourcing, *Minwoo Park and Tae Eun Choe*
- Learning Localized Perceptual Similarity Metrics for Interactive Categorization, *Catherine Wah, Subhransu Maji and Serge Belongie*
- Interactive Visualization based Active Learning, *Mohammadreza Babaee, Stefanos Tsoukalas, Gerhard Rigoll (TU Munchen) and Mihai Datcu (German Aerospace Center)*
- Attributes Make Sense on Segmented Objects, *Zhenyang Li, Efstratios Gavves, Thomas Mensink, and Cees Snoek (University of Amsterdam)*
- Seeing What You're Told: Sentence-Guided Activity Recognition In Video, *Siddharth Narayanaswamy (Stanford), Andrei Barbu (MIT) and Jeffrey Siskind (Purdue University)*

- 8. Learning High-level Judgments of Urban Perception, *Vicente Ordonez and Tamara Berg (UNC Chapel Hill)*
- 9. Active Annotation Translation, *Steven Branson and Pietro Perona (Caltech)*
- 10. Interactive Object Counting, *Carlos Arteta (Oxford University), Victor Lempitsky (Skolkovo Institute of Science and Technology), Alison Noble, and Andrew Zisserman (Oxford University)*
- 11. Interactive Guiding Semi-Supervised Clustering via Attribute-based Explanations, *Shrenik Lad and Devi Parikh (Virginia Tech)*
- 12. Zero-Shot Learning via Visual Abstraction, *Stanislaw Antol (Virginia Tech), C. L. Zitnick (Microsoft Research), Devi Parikh (Virginia Tech)*
- 13. Decorrelating Semantic Visual Attributes by Resisting the Urge to Share, *Dinesh Jayaraman (UT Austin), Fei Sha (USC), Kristen Grauman (UT Austin)*
- 14. Attribute Adaptation for Personalized Image Search, *Adriana Kovashka, Kristen Grauman (UT Austin)*
- 15. Inferring the Why in Images, *Hamed Pirsiavash, Carl Vondrick, Antonio Torralba (MIT)*

1240 Lunch Break

- 1400 **Invited Talk:** Serge Belongie (*Cornell Tech*)
- 1430 **Invited Talk:** Larry Zitnick (*Microsoft Research*)
- 1500 **Invited Talk:** David Forsyth (*UIUC*)

1530 Coffee Break

- 1600 **Invited Talk:** Vlad Morariu (*University of Maryland*)
- 1630 Discussion and closing

W14 Light Fields for Computer Vision

Organizers: Jingyi Yu
Bastian Goldluecke
Rick Szeliski

Location: D7.2

Schedule: Full Day

- 0830 Welcome
- 0835 **Keynote Talk:** Light Fields at Disney Research, *Alexander Sorkine-Hornung (Disney Research)*
- 0920 **Paper Session I: Light Field Imaging:**
 - 1. SocialSync: Sub-Frame Synchronization in a Smartphone Camera Network, *Richard Latimer, Jason Holloway, Ashok Veeraraghavan, Ashutosh Sabharwal*
 - 2. Light Field from Smartphone-based Dual Video, *Bernad Krolla, Maximilian Diebold, Didier Stricker*
 - 3. Barcode Imaging using a Light Field Camera, *Xinqing Guo, Haiting Lin, Zhan Yu, and Scott McCloskey*
- 1020 **Coffee Break (with poster and demos)**
- 1050 **Keynote Talk:** Pelican's Light Field Camera Arrays: Performance and Applications, *Kartik Venkataraman (Pelican Imaging)*
- 1135 **Lunch Break**
- 1330 **Keynote Talk:** Light Field Cameras for Industrial Applications, *Christian Perwass (Raytrix)*
- 1415 **Paper Session II: Light Field Applications:**
 - 1. Depth Estimation for Glossy Surfaces with Light-Field Cameras, *Michael W. Tao, Ting-Chun Wang, Jitendra Malik, and Ravi Ramamoorthi*
 - 2. Accurate Disparity Estimation for Plenoptic Images, *Neus Sabater, Mozhdeh Seifi, Valter Drazic, Gustavo Sandri and Patrick Perez*
 - 3. Depth and Arbitrary Motion Deblurring Using Integrated PSF, *Takeyuki Kobayashi, Fumihiko Sakaue, and Jun Sato*
- 1515 **Coffee Break (with poster and demos)**
- 1545 **Keynote Talk:** Glass-Free 3D Light Field Displays, *Gordon Wetzstein (Stanford/MIT)*
- 1630 Dataset release
- 1650 Closing remarks

W15 Computer Vision for Road Scene Understanding and Autonomous Driving

Organizers: Bart Nabbe
Raquel Urtasun
Matthieu Salzmann
Lars Petersson
Jose Alvarez
Fatih Porikli
Gary Overett
Nick Barnes

Location: D1.2 (and on parking lot for car demos)

Schedule: Full Day

0900 Opening notes from Workshop Organizers

0905 **Invited Talk:** Vision for Low-Cost Autonomy with the Oxford University RobotCar, Will Maddern, *Oxford University, United Kingdom*

Contributed works (0945-1045):

0945 Ten Years of Pedestrian Detection, What Have We Learned?, *Rodrigo Benenson, Mohamed Omran, Jan Hosang, Bernt Schiele*

1000 Fast 3-D Urban Object Detection on Streaming Point Clouds, *Attila Börzs, Balázs Nagy, Csaba Benedek*

1015 Relative Pose Estimation and Fusion of Omnidirectional and Lidar Cameras, *Levente Tamas, Robert Frohlich, Zoltan Kato*

1030 Good Edgels To Track: Beating The Aperture Problem With Epipolar Geometry, *Tommaso Piccini, Mikael Persson, Klas Nordberg, Michael Felsberg, Rudolf Mester*

1045 Coffee Break

1115 **Invited Talk:** Localization in Urban Canyons using Cadastral 3D City Models, Srikumar Ramalingam, *MERL, USA*

1155 **DemoTalk:** Stixmantics: Real-time semantic segmentation of street scenes, *Uwe Franke / Timo Schwarwächter, Daimler, Germany*

1215 Lunch Break

1400 **Invited Talk:** Is the self-driving car around the corner? Mobileye's work on Computer Vision centric approach to self-driving at consumer level cost, Amnon Shashua, *MobileEye, Israel*

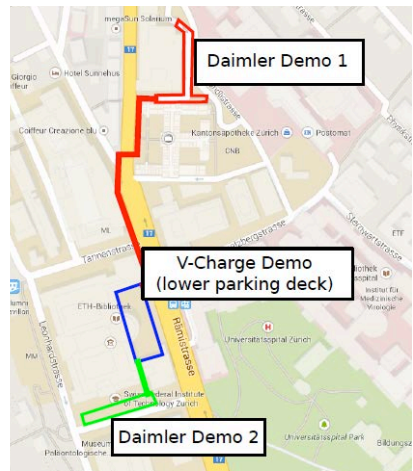
1440 **Demo Talk:** Multi-Camera Systems in the V-Charge Project: Fundamental Algorithms, Self Calibration, and Long-Term Localization, *Paul Furgale, ETH Zurich, Switzerland*

1500 **Invited Talk:** Intelligent Drive & Pedestrian Safety 2.0, Dariu Gavrilă, *Daimler, Germany*

1540 Coffee Break

1600 Posters / Demos of actual vehicles from Daimler and V-Charge in the parking lot

1800 End



W16 Soft Biometrics

Organizers: Abdenour Hadid
Paulo Lobato Correia
Thomas Moeslund

Location: D5.2

Schedule: Full Day

0830 Welcome and Opening

0840 **Keynote Talk 1:** Bag of Soft Biometrics for Person Identification: new trends and challenges, Prof. Jean-Luc Dugelay (*Eurecom, France*)

0920 An Overview of Research Activities in Facial Age Estimation Using the FG-NET Aging Database, *Gabriel Panis (Cyprus University of Technology), Andreas Lanitis (Cyprus University of Technology)*

0940 Facial Age Estimation Through the Fusion of Texture and local appearance Descriptors, *Ivan Huerta (IUAV), Carles Fernandez (), Andrea Prati (IUAV)*

1000 Towards predicting good users for biometric recognition based on keystroke dynamics, *Aythami Morales Moreno (Universidad Autonoma de Madrid), Julian Fierrez (Universidad Autonoma de Madrid), Javier Ortega-García (Universidad Autónoma de Madrid)*

1020 Coffee Break

1100 Recognition of Facial Attributes using Adaptive Sparse Representations of Random Patches, *Domingo Mery (Universidad Catolica de Chile), Kevin Bowyer (University of Notre Dame)*

1120 Activity-Based Human Identification Using Discriminative Sparse Projections and Orthogonal Ensemble Metric Learning, *Haibin Yan (NUS, Singapore), Jiwen Lu (ADSC, Singapore), Xiuzhuang Zhou (CNU, China)*

1140 Privacy of Facial Soft Biometrics: Suppressing Gender But Retaining Identity, *Asem Othman (Michigan State University), Arun Ross (Michigan State University)*

1200 Exploring the Magnitude of Human Sexual Dimorphism in 3D Face Gender Classification, *Xia*

Baiqiang (University Lille1-France), Boulbaba Ben Amor (Telecom Lille/LIFL), Mohamed Daoudi (Telecom Lille/LIFL)

1220 Lunch Break

1350 **Keynote Talk 2:** What is the potential of soft biometrics for forensic applications?, Prof. Massimo Tistarelli, *University of Sassari, Italy*

1430 Gender Classification from Iris Images using Fusion of Uniform Local Binary Patterns, *Juan Tapia, Claudio Perez (Universidad de Chile), Kevin Bowyer (University of Notre Dame)*

1450 Evaluation of Texture Descriptors for Automated Gender Estimation from Fingerprints, *Ajita Rattani (Michigan State University), Cunjian Chen (West Virginia University), Arun Ross (Michigan State University)*

1510 Coffee break

1540 Person Identification in Natural Static Postures Using Kinect, *Ramu Vempada, Kingshuk Chakravarty, Aniruddha Sinha (TCS, INNOVATION LABS)*

1600 How Much Information Kinect Facial Depth Data Can Reveal about Identity, Gender and Ethnicity? *Elhocine Boutellaa (CDTA), Messaoud Bengherabi (CDTA), Samy Ait-Aoudia (ESI), Abdenour Hadid (University of Oulu, Finland)*

1620 Facial Ethnic Appearance Synthesis, *Felix Juefei-Xu, Marios Savvides (Carnegie Mellon University)*

1640 **Keynote Talk 3:** Soft biometrics for surveillance, Prof Mark Nixon, *University of Southampton, UK*

1720 Best paper award and closing

W17 THUMOS Challenge 2014: Action Recognition with a Large Number of Classes

Organizers: Yu-Gang Jiang
Jingen Liu
Amir Roshan Zamir
George Toderici
Ivan Laptev
Mubarak Shah
Rahul Sukthankar

Location: F5

Description: The goal of the THUMOS Challenge is to encourage researchers to develop methods for action recognition in temporally untrimmed videos that scale to a large numbers of action categories captured in natural settings. The results of this competition, in both detection and whole-clip classification tasks, will be presented and discussed in this workshop.

Schedule: Full Day

Opening Session

0900 Opening Remarks

0910 **Invited Talk:** Abhinav Gupta (*Carnegie Mellon University*)

0940 Talk: THUMOS14 Data Collection, Annotation, and Feature Extraction Process

1000 Coffee Break

Action Classification Session

1030 **Invited Talk:** Action Classification, TBA.

1100 Talk: Overview and the Results of the Classification Challenge

1120 Challenge (Classification Track) Winner Presentation

1140 Challenge (Classification Track) Top Performer

1200 Challenge (Classification Track) Top Performer

1220 Lunch Break

Action Detection Session

1400 **Invited Talk:** Hamed Pirsiavash (*Massachusetts Institute of Technology*)

1430 Talk: Overview and the Results of the Detection Challenge

1450 Challenge (Detection Track) Winner Presentation

1510 Challenge (Detection Track) Top Performer

1530 **Invited Talk:** Dong Xu (*Nanyang Technological University*)

1600 Coffee Break

Conclusion Session

1630 **Invited Talk:** Cees Snoek (*University of Amsterdam*)

1700 Summarization of the Challenge Results and Closing Remarks

1720 End

T5 DIY Deep Learning for Vision: a Hands-On Tutorial

Organizer: Evan Shelhamer
 Jeff Donahue
 Yangqing Jia
 Ross Girshick

Time: 0900-1230 (1030-1100 Coffee Break)

Location: E7

Description: This is a hands-on tutorial intended to present state-of-the-art deep learning models and equip vision researchers with the tools and know-how to incorporate deep learning into their work. Deep learning models and deep features have recently achieved strong results in classification and recognition, detection, and segmentation, but a common framework and shared models are needed to advance further work and reduce the barrier to entry. To this end we present the Caffe – Convolutional Architecture for Fast Feature Embedding – framework that offers an open-source library, public reference models, and worked examples for deep learning in vision. Demos will be done live and the audience will be able to follow along with examples (if they follow pre-tutorial installation instructions).

T6 Robust Optimization Techniques in Computer Vision

Organizers: Olof Enqvist
 Fredrik Kahl
 Richard Hartley

Time: 0900-1215 (1030-1100 Coffee Break)

Location: E5

Description: Many important problems in computer vision, such as structure from motion and image registration, involve model estimation in presence of a significant number of outliers. Due to the outliers, simple estimation techniques such as least squares perform very poorly. To deal with this issue, vision researchers have come up with a number of techniques that are robust to outliers, such as Hough transform and RANSAC. These methods will be analyzed with respect to statistical modeling, worst-case and average execution times and how to choose the balance between the number of outliers and the number of inliers. Apart from these classical techniques we will also describe recent advances in robust model estimation. This includes sampling based techniques with guaranteed optimality for low-dimensional problems and optimization of semi-robust norms for high-dimensional problems. We will see how to solve low-dimensional estimation problems with over 99% outliers in a few seconds, as well as how to detect outliers in structure from motion problems with thousands of variables.

Schedule/Topics

- Session 1: Statistical models of robust regression. Introduction, motivations and applications. Relation to robust statistics.
- Session 2: Robust estimation with low-dimensional models. Hough transform. M-estimators. RANSAC and its variants. Branch and bound methods. Optimal methods. Fast approximate methods.
- Session 3: Robust estimation with high-dimensional models. Robust norms and convex optimization. L_∞ -norm optimization with outliers. L_1 -norm optimization on manifolds.

T7 Domain Adaptation and Transfer Learning

Organizers: Tatiana Tommasi
Francesco Orabona

Time: 1400-1730 (1530-1600 Coffee Break)

Location: E1.2

Description: A large part of the computer vision literature focuses on obtaining impressive results on large datasets under the main assumption that training and test samples are drawn from the same distribution. However, in several applications this assumption is grossly violated. Think about using algorithms trained on clean Amazon images to annotate objects acquired with a low-resolution cellphone camera, or using an organ detection and segmentation tool trained on CT images for MRI scans. Other challenging tasks appear across object classes: given the models of a giraffe and a zebra or some of their image patches, can we use them to detect and recognize an okapi? Despite the large availability of principled learning methods, it has been shown that they often fail in generalizing across domains, preventing any reliable automatic labeling and bringing back to the error prone and time expensive human annotation for new images. Domain adaptation and Transfer learning tackle these problems proposing methods that bridge the gap between the source training domain and different but related target test domains.

Schedule/Topics

- Introduction and Theory
what, how and when to transfer; cross-domain and cross-task transfer, semi-supervised and unsupervised settings; data distribution mismatch and generalization bounds.
- Algorithms
feature learning methods: reduce/enlarge dimensionality of feature space (subspace projections, representations built over classification output scores and use of local features), self-taught learning, dictionary learning approaches, use of deep convolutional neural networks; sample selection; self-labeling; model adaptation
- Applications and New directions
available datasets and their bias; speed-up for large scale problems

T8 3D Scene Understanding

Organizer: David Fouhey
Abhinav Gupta
Derek Hoiem
Martial Hebert

Time: 1400-1730 (1530-1600 Coffee Break))

Location: E7

Description: What does it mean to understand an image? The bounding-box or segment-level understanding produced by many current computer vision systems tells us little about where objects are located in 3D and how agents like humans could interact with them. However, recent work has focused on obtaining a complementary and geometric understanding of the scene in terms of the 3D volumes and surfaces that compose the scene and their interactions. This representation enables reasoning about the objects as they exist in a 3D world, rather than simply in the image plane, and has been demonstrated to have a myriad of applications for object detection, human-centric understanding, and graphics. Additionally, recent data-set collection efforts with depth cameras have made large-scale learning of these geometric representations possible and have opened up exciting avenues for research on large-scale learning with RGB-D datasets.

The tutorial organizers will summarize the state-of-the-art in 3D scene understanding in a half day tutorial. Participants will learn the fundamentals of 3D scene understanding with the aim of enabling its application to traditional 2D image tasks as well as research on the topic itself.

Schedule

1400 Martial Hebert: Introduction and Historical Perspective
1420 Martial Hebert: Applications
1445 Derek Hoiem: Surfaces as Primitives
1530 Coffee Break
1600 Abhinav Gupta: Volumes as Primitives
1645 David Fouhey: Data-Driven 3D

Monday, September 8

0730–1830 Registration (Vestibul K)

0900–0930 Opening & Awards (Kongresssaal)

0930–1030 Oral Session 1A: Tracking and Activity Recognition (Kongresssaal)

Chairs: Frank Dellaert (*Georgia Institute of Technology*)

Silvio Savarese (*Stanford University*)

Format (15 min. for presentation + 3 min. for questions)

1. Visual Tracking by Sampling Tree-Structured Graphical Models, *Seunghoon Hong, Bohyung Han, POSTECH*
2. Tracking Interacting Objects Optimally Using Integer Programming, *Xinchao Wang, Engin Türetken, EPFL; François Fleuret, EPFL/IDIAP; Pascal Fua, EPFL*
3. Learning Latent Constituents for Recognition of Group Activities in Video, *Borislav Antic, Björn Ommer, University of Heidelberg*

(These papers will also be presented in [Poster Session 1A](#))

1030–1115 Coffee Break

1115–1230 Oral Session 1B: Recognition (Kongresssaal)

Chairs: Hervé Jégou (*INRIA*)

Alex Berg (*UNC Chapel Hill*)

Format (15 min. for presentation + 3 min. for questions)

1. Large-Scale Object Classification using Label Relation Graphs, *Jia Deng, Nan Ding, Yangqing Jia, Andrea Frome, Kevin Murphy, Samy Bengio, Yuan Li, Hartmut Neven, Hartwig Adam; Google*
2. 30Hz Object Detection with DPM V5, *Mohammad Amin Sadeghi, David Forsyth, UIUC*

3. Knowing a Good HOG Filter When You See It: Efficient Selection of Filters for Detection, *Ejaz Ahmed, University of Maryland at College Park; Gregory Shakhnarovich, TTI Chicago; Subhransu Maji, University of Massachusetts, Amherst*
4. Linking People in Videos with "Their" Names Using Coreference Resolution, *Vignesh Ramanathan, Armand Joulin, Percy Liang, Li Fei-Fei, Stanford University*
(These papers will also be presented in [Poster Session 1A](#))

1230–1400 Lunch Break

1400–1645 Demos (Panoramasaal- Foyer)

- Large-Scale Monocular SLAM with Client-Server Architecture, *Haomin Liu, Guofeng Zhang, Hujun Bao, Zhejiang University*
- Video Face Enhancer: Expression Cloning and Super-resolution by Facial Feature Tracking, *Chen Huang, Xiaoging Ding, Chi Fang, Tsinghua University*
- Self-Learning Camera: Autonomous Adaptation of Object Detectors to Unlabeled Video Streams, *Adrien Gaidon, Eleonora Vig, Xerox Research Centre Europe*
- Dense 3D Face Alignment from 2D Video for Analysis and Synthesis, *Laszlo A. Jeni, Jeffrey F. Cohn, Takeo Kanade, Carnegie Mellon University*

1400–1645 Exhibits (Tagungszentrum)

- | | |
|----------------------|--------------------------|
| • Leica | • Pelican Imaging |
| • Microsoft Research | • Glamsmile |
| • Google | • Dacuda |
| • Toyota | • Fastvis |
| • Technicolor | • Ptgrey |
| • Amazon | • SCS |
| • Disney Research | • 4DViews |
| • Qualcomm | • Urbanrobotics |
| • Facebook | • Ascending Technologies |
| • Inilabs | • Springer |
| • Omron | |

1400–1645 Poster Video Spotlight Loop (Kongresssaal)

1400–1645 Poster Session 1A

(Gartensaal: posters 1-24)

(Panoramasaal: posters 25-52)

1. Optimal Essential Matrix Estimation via Inlier-Set Maximization, *Jiaolong Yang, BIT and ANU; Hongdong Li, ANU; Yunde Jia, BIT*
2. UPnP: An Optimal O(n) Solution to the Absolute Pose Problem with Universal Applicability, *Laurent Kneip, Hongdong Li, Australian National University; Yongduek Seo, Sogang University*
3. 3D Reconstruction of Dynamic Textures in Crowd Sourced Data, *Dinghuang Ji, Enrique Dunn, Jan-Michael Frahm, UNC Chapel Hill*
4. 3D Interest Point Detection via Discriminative Learning, *Leizer Teran, Philippos Mordohai, Stevens Institute of Technology*
5. Pose Locality Constrained Representation for 3D Human Pose Reconstruction, *Xiaochuan Fan, Kang Zheng, Youjie Zhou, Song Wang, University of South Carolina*
6. Synchronization of Two Independently Moving Cameras without Feature Correspondences, *Tiago Gaspar, Paulo Oliveira, IST; Paolo Favaro, Bern University*
7. Multi-Focus Structured Light for Recovering Scene Shape and Global Illumination, *Supreeth Achar, Srinivas Narasimhan, CMU*
8. Coplanar Common Points in Non-centric Cameras, *Wei Yang, Yu Ji, Jinwei Ye, University of Delaware; S. Susan Young, U.S. Army Research Lab; Jingyi Yu, University of Delaware*
9. SRA: Fast Removal of General Multipath for ToF Sensors, *Daniel Freedman, Yoni Smolin, Eyal Krupko, Microsoft Research; Ido Leichter, Technion; Mirko Schmidt, Microsoft Research*
10. Sub-Pixel Layout for Super-Resolution with Images in the Octic Group, *Boxin Shi, Hang Zhao, Moshe Ben-Ezra, MIT Media Lab; Sai-Kit Yeung, Singapore University of Technology and Design; Christy Fernandez-Cull, MIT Lincoln Lab; R. Hamilton Shepard, Christopher Barsi, Ramesh Raskar, MIT*
11. Simultaneous Feature and Dictionary Learning for Image Set Based Face Recognition, *Jiwen Lu, ADSC; Gang Wang, Nanyang Technological University; Weihong Deng, Beijing Univ. Post. & Telecom; Pierre Moulin, UIUC*
12. Read My Lips: Continuous Signer Independent Weakly Supervised Viseme Recognition, *Oscar Koller, Hermann Ney, RWTH Aachen University; Richard Bowden, University of Surrey UK*
13. Multilinear Wavelets: A Statistical Shape Space for Human Faces, *Alan Brunton, Fraunhofer IGD; Timo Bolkart, Stefanie Wuhrer, Saarland University*
14. Distance Estimation of an Unknown Person from a Portrait, *Xavier Burgos-Artizzu, Matteo Ruggero Ronchi, Pietro Perona, California Institute of Technology*
15. Probabilistic Temporal Head Pose Estimation Using a Hierarchical Graphical Model, *Meltem Demirkus, Doina Precup, James Clark, Tal Arbel, McGill University*
16. Description-Discrimination Collaborative Tracking, *Dapeng Chen, Zejian Yuan, Xi'an Jiaotong University; Gang Hua, Stevens Institute of Technology; Yang Wu, Kyoto University; Nanning Zheng, Xi'an Jiaotong University*
17. Online, Real-Time Tracking using a Category-to-Individual Detector, *David Hall, Pietro Perona, California Institute of Technology*
18. Robust Visual Tracking with Double Bounding Box Model, *Junseok Kwon, ETH Zurich; Junha Roh, KIST; Kyoung Mu Lee, Seoul National University; Luc Van Gool, ETH Zurich*
19. Tractable and Reliable Registration of 2D Point Sets, *Erik Ask, Lund University; Olof Enqvist, Chalmers University of Technology, Sweden; Linus Svärm, Lund University; Fredrik Kahl, Chalmers University of Technology; Giuseppe Lippolis, Lund University*
20. Graduated Consistency-Regularized Optimization for Multi-graph Matching, *Junchi Yan, Shanghai Jiao Tong University; Yin Li, Georgia Institute of Technology; Wei Liu, IBM Thomas J. Watson Research; Hongyuan Zha, Georgia Institute of Technology; Xiaokang Yang, Shanghai Jiao Tong University; Stephen Mingyu Chu, IBM Research China*
21. Optical Flow Estimation with Channel Constancy, *Laura Sevilla-Lara, University of Massachusetts, Amherst; Deqing Sun, Harvard; Erik Learned-Miller, University of Massachusetts; Michael Black, Max Planck Institute for Intelligent Systems*

22. Non-Local Total Generalized Variation for Optical Flow Estimation, *René Ranftl, Kristian Bredies, Thomas Pock, Graz University of Technology*
23. Learning Brightness Transfer Functions for the Joint Recovery of Illumination Changes and Optical Flow, *Oliver Demetx, Saarland University; Michael Stoll, Sebastian Volz, University of Stuttgart; Joachim Weickert, Saarland University; Andrés Bruhn, University of Stuttgart*
24. Hipster Wars: Discovering Elements of Fashion Styles, *M. Hadi Kiapour, UNC Chapel Hill; Kota Yamaguchi, Stony Brook University; Alexander Berg, Tamara Berg, UNC Chapel Hill*
25. From Low-Cost Depth Sensors to CAD: Cross-Domain 3D Shape Retrieval via Regression Tree Fields, *Yan Wang, Jie Feng, Zhixiang Wu, Columbia University; Jun Wang, IBM Research Center; Shih-Fu Chang, Columbia University*
26. Fast and Accurate Texture Recognition with Multilayer Convolution and Multifractal Analysis, *Hicham Badri, Hussein Yahia, Khalid Daoudi, INRIA*
27. Learning to Rank 3D Features, *Oncel Tuzel, Ming-Yu Liu, Yuichi Taguchi, Arvind Raghunathan, MERL*
28. Salient Color Names for Person Re-Identification, *Yang Yang, CBSR; Jimei Yang, University of California at Merced; Junjie Yan, Shengcai Liao, Dong Yi, Stan Z. Li, NLPRI Institute of Automation, Chinese Academy of Sciences*
29. Learning Discriminative and Shareable Features for Scene Classification, *Zhen Zuo, Gang Wang, Bing Shuai, Lifan Zhao, Nanyang Tech. Univ.; Qingxiong Yang, City University of Hong Kong; Xudong Jiang, Nanyang Tech. Univ.*
30. Image Retrieval and Ranking via Consistently Reconstructing Multi-Attribute Queries, *Xiaochun Cao, SKLOIS, IIE CAS; Hua Zhang, Tianjin University; Xiaojie Guo, SKLOIS, IIE, CAS; Si Liu, NUS; Xiaowu Chen, Beihang University*
31. Neural Codes for Image Retrieval, *Artem Babenko, Yandex; Anton Slesarev, Yandex; Alexandr Chigorin, Yandex; Victor Lempitsky, Skolkovo Institute of Science and Technology*
32. Architectural Style Classification using Multinomial Latent Logistic Regression, *Zhe Xu, Dacheng Tao, University of Technology Sydney; Ya Zhang, Shanghai Jiao Tong University; Junjie Wu, Beihang University; Ah Chung Tsoi, Macau University of Science and Technology*
33. Instance Segmentation of Indoor Scenes using a Coverage Loss, *Nathan Silberman, David Sontag, Rob Fergus, NYU*
34. Superpixel Graph Label Transfer with Learned Distance Metric, *Stephen Gould, Jiecheng Zhao, ANU; Xuming He, NICTA; Yuhang Zhang, Chalmers University*
35. Precision-Recall-Classification Evaluation Framework: Application to Depth Estimation on Single Images, *Guillem Palou Visa, Philippe Salembier, Universitat Politècnica de Catalunya*
36. A Multi-Stage Approach to Curve Extraction, *Yuliang Guo, Brown University; Naman Kumar, Carnegie Mellon University; Maruthi Narayanan, Benjamin Kimia, Brown University*
37. Geometry Driven Semantic Labeling of Indoor Scenes, *Salman Khan, Mohammed Bennamoun, Ferdous Sohel, Roberto Togneri, University of Western Australia*
38. A Novel Topic-level Random Walk Framework for Scene Image Co-Segmentation, *Zehuan Yuan, Tong Lu, Nanjing University; Palaiahnakote Shivakumara, University of Malaysia*
39. Surface Matching and Registration by Landmark Curve-Driven Canonical Quasiconformal Mapping, *Wei Zeng, School of Computing and Information; Yi-Jun Yang, Shandong University*
40. Motion Words for Videos, *Ekaterina Taralova, Fernando De la Torre, Martial Hebert, Carnegie Mellon University*
41. Activity Group Localization by Modeling the Relations among Participants, *Lei Sun, Haizhou Ai, Tsinghua University; Shihong Lao, Omron Social Solutions Co, Ltd.*
42. Finding Coherent Motions and Semantic Regions in Crowd Scenes: A Diffusion and Clustering Approach, *Weiye Wang, Weiyao Lin, Yuanzhe Chen, Shanghai Jiao Tong University; Jianxin Wu, Nanjing University; Jingdong Wang, Microsoft Research; Bin Sheng, Shanghai Jiao Tong University*
43. Semantic Aware Video Transcription Using Random Forest Classifiers, *Chen Sun, Ram Nevatia, University of Southern California*
44. Ranking Domain-specific Highlights by Analyzing Edited Videos, *Min Sun, Ali Farhadi, University of Washington; Steve Seitz, Washington/Google*

- 45. A Multi-Transformational Model for Background Subtraction with Moving Cameras, *Daniya Zamalieva, Alper Yilmaz, James W. Davis, Ohio State University*
- 46-52 Papers from Oral Session 1A and 1B

1600-1645 Coffee Break

1645-1815 Oral Session 1C: Learning and Inference (Kongresssaal)

Chairs: Jakob Verbeek (*INRIA*)

Christoph Lampert (*IST Austria*)

Format (15 min. for presentation + 3 min. for questions)

1. Visualizing and Understanding Convolutional Networks, *Matthew Zeiler, Rob Fergus, NYU*
 2. Part-based R-CNNs for Fine-Grained Category Detection, *Ning Zhang, Jeff Donahue, Ross Girshick, Trevor Darrell, UC Berkeley*
 3. Coarse-to-Fine Auto-Encoder Networks (CFAN) for Real-Time Face Alignment, *Jie Zhang, Shiguang Shan, Meina Kan, Xilin Chen, Chinese Academy of Science.*
 4. From Manifold to Manifold: Geometry-Aware Dimensionality Reduction for SPD Matrices, *Mehrtash Harandi, Mathieu Salzmann, Richard Hartley, Australian National University*
 5. Pose Machines: Articulated Pose Estimation via Inference Machines, *Varun Ramakrishna, Daniel Munoz, Martial Hebert, James Andrew Bagnell, Yaser Sheikh, CMU*
- (These papers will also be presented in Poster Session 2A)

1815-1945 Welcome Reception (Kongresshaus)

Tuesday, September 9

0730–1830 Registration (Vestibul K)

0830–1115 Demos (Panoramasaal-Foyer)

- Accurate Planar Surfaces Detection on Depth Map, *Zhi Jin, University of Liverpool, Xi'an Jiaotong-Liverpool University; Tammam Tillo, Xi'an Jiaotong-Liverpool University; Fei Cheng, University of Liverpool, Xi'an Jiaotong-Liverpool University*
- What can you do with a Beam and a reflecting prism?, *Aaron Wetzler, Rom Herskovitz, Nofar Carmeli, Ron Kimmel, Technion*
- Passive Tomography of Turbulence Strength, *Marina Alterman, Yoav Schechner, Technion; Minh Vo, Srinivasa Narasimhan, Carnegie Mellon University*
- Real-time single camera hand gesture recognition system for remote deaf-blind communication, *Giuseppe Airo' Farulla, Andrea Bulgarelli, Marco Indaco, Stefano Rosa, Ludovico Orlando Russo, Politecnico di Torino; Daniele Pianu, IEIIT – CNR, Turin; Domenico Camboni, Marco Controzzi, Christian Cipriani, Calogero Maria Oddo, Scuola Superiore Sant'Anna*
- Will the Pedestrian Cross? Context-Based Pedestrian Path Prediction, *N. Schneider, F. Flohr, J.F.P. Kooij, D. M. Gavrila, Daimler/ University Amsterdam*

0830–1115 Exhibits (Tagungszentrum)

- Same as Monday afternoon Exhibits (see pg.25)

0830–1115 Swiss Computer Vision Start-Up Event (Vestibul K)

0830–1115 Poster Video Spotlight Loop (Kongresssaal)

0830–1115 Poster Session 2A

(Gartensaal: posters 1-24)

(Panoramasaal: posters 25-52)

1. Piecewise-Planar StereoScan: Structure and Motion from Plane Primitives, *Carolina Raposo, Michel Antunes, João P. Barreto, Institute of Systems and Robotics, Universidade de Coimbra*
2. Nonrigid Surface Registration and Completion from RGBD Images, *Weipeng Xu, BIT; Mathieu Salzmann, NICTA; Yongtian Wang, Yue Liu, BIT*
3. Unsupervised Dense Object Discovery, Detection, Tracking and Reconstruction, *Lu Ma, Gabe Sibley, The George Washington University*
4. Know Your Limits: Accuracy of Long Range Stereoscopic Object Measurements in Practice, *Peter Pinggera, David Pfeiffer, Uwe Franke, Daimler AG; Rudolf Mester, Goethe Universität Frankfurt am Main*
5. As-Rigid-As-Possible Stereo under Second Order Smoothness Priors, *Chi Zhang, Sun Yat-Sen University; Zhiwei Li, Rui Cai, Microsoft Research Asia; Hongyang Chao, Sun Yat-Sen University; Yong Rui, Microsoft*
6. Real-Time Minimization of the Piecewise Smooth Mumford-Shah Functional, *Evgeny Strekalovskiy, Daniel Cremers, Technical University Munich*
7. A MAP-Estimation Framework for Blind Deblurring Using High-Level Edge Priors, *Yipin Zhou, Brown University; Nikos Komodakis, Ecole des Ponts ParisTech*
8. Efficient Color Constancy with Local Surface Reflectance Statistics, *Shaobing Gao, Wangwang Han, Kaifu Yang, Chaoyi Li, Yongjie Li, University of Electronic Science & Technology of China*
9. A Contrast Enhancement Framework with JPEG Artifacts Suppression, *Yu Li, Fangfang Guo, National University of Singapore; Robby Tan, SIM University; Michael Brown, National University of Singapore*
10. Radial Bright Channel Prior for Single Image Vignetting Correction, *Hojin Cho, Hyunjoon Lee, Seungyong Lee, POSTECH*
11. Tubular Structure Filtering by Ranking Orientation Responses of Path Operators, *Odyssée Merveille, ESIEE Paris; Hugues Talbot, Université Paris Est; Laurent Najman, ESIEE Paris; Nicolas Passat, Université de Reims*
12. Optimization-Based Artifact Correction for Electron Microscopy Image Stacks, *Samaneh Azadi, Jeremy Maitin-Shepard, Pieter Abbeel, UC Berkeley*

13. Metric-Based Pairwise and Multiple Image Registration, *Qian Xie, Florida State University; Sebastian Kurtek, Ohio State University; Eric Klassen, Florida State University; Gary Christensen, University of Iowa; Anuj Srivastava, Florida State University*
14. Canonical Correlation Analysis on Riemannian Manifolds and Its Applications, *Hyunwoo Kim, Nagesh Adluru, Barbara Bendlin, Sterling Johnson, University of Wisconsin Madison; Baba Vemuri, University of Florida; Vikas Singh, University of Wisconsin-Madison*
15. Scalable 6-DOF Localization on Mobile Devices, *Sven Middelberg, RWTH Aachen University; Torsten Sattler, ETH Zurich; Ole Untzelmann, Leif Kobbelt, RWTH Aachen University*
16. On Mean Pose and Variability of 3D Deformable Models, *Benjamin Allain, Jean-Sébastien Franco, Edmond Boyer, INRIA Grenoble; Tony Tung, Kyoto University*
17. Hybrid Stochastic / Deterministic Optimization for Tracking Sports Players and Pedestrians, *Robert Collins, Penn State University; Peter Carr, Disney Research*
18. What Do I See? Modeling Human Visual Perception for Multi-person Tracking, *Xu Yan, Ioannis Kakadiaris, Shishir Shah, University of Houston*
19. Consistent Re-identification in a Camera Network, *Abir Das, Anirban Chakraborty, Amit Roy-Chowdhury, UC Riverside*
20. Surface Normal Deconvolution: Photometric Stereo for Optically Thick Translucent Objects, *Chika Inoshita, Osaka University; Yasuhiro Mukaigawa, Nara Institute of Science and Technology; Yasuyuki Matsushita, Microsoft Research Asia; Yasushi Yagi, Osaka University*
21. Intrinsic Video, *Naejin Kong, Peter Gehler, Michael Black, Max Planck Institute for Intelligent Systems*
22. Robust and Accurate Non-Parametric Estimation of Reflectance using Basis Decomposition and Correction Functions, *Tobias Nöhl, Johannes Köhler, Didier Stricker, DFKI*
23. Intrinsic Textures for Relightable Free-Viewpoint Video, *James Imber, Jean-Yves Guillemaut, Adrian Hilton, University of Surrey*
24. Reasoning About Object Affordances in a Knowledge Base Representation, *Yuke Zhu, Alireza Fathi, Li Fei-Fei, Stanford University*
25. Binary Codes Embedding for Fast Image Tagging with Incomplete Labels, *Qifan Wang, Bin Shen, Shumiao Wang, Liang Li, Luo Si, Purdue University*
26. Recognizing Products: A Per-Exemplar Multi-Label Image Classification Approach, *Marian George, Chrisitan Floerkeimer, ETH Zurich*
27. Part-Pair Representation for Part Localization, *Jiongxin Liu, Yinxiao Li, Peter Belhumeur, Columbia University*
28. Weakly Supervised Learning of Objects, Attributes and their Associations, *Zhiyuan Shi, Yongxin Yang, Timothy Hospedales, Tao Xiang, Queen Mary University of London*
29. Interestingness Prediction by Robust Learning to Rank, *Yanwei Fu, Timothy Hospedales, Tao Xiang, Shaogang Gong, Queen Mary University of London; Yuan Yao, Peking University, China*
30. Pairwise Probabilistic Voting: Fast Place Recognition without RANSAC, *Edward Johns, Guang-Zhong Yang, Imperial College London*
31. Robust Instance Recognition in Presence of Occlusion and Clutter, *Ujwal Bonde, Vijay Badrinarayanan, Roberto Cipolla, University of Cambridge*
32. Learning 6D Object Pose Estimation using 3D Object Coordinates, *Eric Brachmann, Alexander Krull, Frank Michel, Stefan Gumhold, TU Dresden; Jamie Shotton, Microsoft Research; Carsten Rother, TU Dresden*
33. Growing Regression Forests by Classification: Applications to Object Pose Estimation, *Kota Hara, Rama Chellappa, University of Maryland*
34. Stacked Deformable Part Model with Shape Regression for Object Part Localization, *Junjie Yan, Zhen Lei, Yang Yang, Stan Z. Li, Institute of Automation Chinese Academy of Science*
35. Transductive Multi-view Embedding for Zero-Shot Recognition and Annotation, *Yanwei Fu, Timothy M. Hospedales, Tao Xiang, Zhenyong Fu, Shaogang Gong, Queen Mary University of London*
36. Self-Explanatory Sparse Representation for Image Classification, *Bao-Di Liu, China University of Petroleum; Yu-Xiong Wang, CMU; Bin Shen, Purdue University; Yu-Jin Zhang, Tsinghua University; Martial Hebert CMU*

37. Efficient k-Support Matrix Pursuit, *Hanjiang Lai, Yan Pan, Sun Yat-sen University; Canyi Lu, National University of Singapore; Yong Tang, South China Normal University; Shuicheng Yan, National University of Singapore*
38. Geodesic Regression on the Grassmannian, *Yi Hong, UNC Chapel Hill; Roland Kwitt, University of Salzburg; Nikhil Singh, UNC Chapel Hill; Brad Davis, Kitware; Nuno Vasconcelos, UC San Diego; Marc Niethammer, UNC Chapel Hill*
39. Model Selection by Linear Programming, *Joseph Wang, Tolga Bolukbasi, Kirill Trapeznikov, Venkatesh Saligrama, Boston University*
40. Perceptually Inspired Layout-Aware Losses for Image Segmentation, *Anton Osokin, Moscow State University; Pushmeet Kohli, Microsoft Research UK*
41. Large Margin Local Metric Learning, *Julien Bohné, University College London; Yiming Ying, University of Exeter, UK; Stéphane Gencic, Safran Morpho; Massimiliano Pontil, University College London*
42. Movement Pattern Histogram for Action Recognition and Retrieval, *Arriidhana Ciptadi, Georgia Institute of Technology; Matthew S. Godwin, Northeastern University; James Reh, Georgia Institute of Technology*
43. Pose Filter Based Hidden-CRF Models for Activity Detection, *Prithviraj Banerjee, Ram Nevatia, University of Southern California*
44. Action Recognition Using Super Sparse Coding Vector with Spatio-temporal Awareness, *Xiaodong Yang, YingLi Tian, City College of New York, CUNY*
45. HOPC: Histogram of Oriented Principal Components of 3D Pointclouds for Action Recognition, *Hossein Rahmani, Arif Mahmood, Du Huynh, Ajmal Mian, University of Western Australia*
46. Natural Action Recognition Using Invariant 3D Motion Encoding, *Simon Hadfield, Karel Lebeda, Richard Bowden, University of Surrey UK*
47. Detecting Social Actions of Fruit Flies, *Eyrun Eyjolfssdottir, Steven Branson, Xavier P. Burgos-Artizzu, Eric Hooper, Jonathan Schor, David J. Anderson, Pietro Perona, California Institute of Technology*
- 48-52 Papers from Oral Session 1C

1030-1115 Coffee Break

1115-1230 Oral Session 2A: Structure from Motion and Feature Matching (Kongresssaal)

Chairs: Jan-Michael Frahm (*UNC Chapel Hill*)

Sameer Agarwal (*University of Washington*)

Format (15 min. for presentation + 3 min. for questions)

1. Progressive Mode-Seeking on Graphs for Sparse Feature Matching, *Chao Wang, Lei Wang, Lingqiao Liu, University of Wollongong*
2. Globally Optimal Inlier Set Maximization With Unknown Rotation and Focal Length, *Jean-Charles Bazin, ETH Zurich; Yongduek Seo, Songang University; Richard Hartley, Australian National University; Marc Pollefeys, ETH Zurich*
3. Match Selection and Refinement for Highly Accurate Two-View Structure from Motion, *Zhe Liu, Pascal Monasse, Renaud Marlet, Ecole des Ponts ParisTech*
4. LSD-SLAM: Large-Scale Direct Monocular SLAM, *Jakob Engel, Thomas Schöps, Daniel Cremers, TU Munich*
(These papers will also be presented in Poster Session 2B)

1230-1400 Lunch Break

1400-1645 Demos (Panoramasaal-Foyer)

- LSD-SLAM: Large-Scale Direct Monocular SLAM, *Jakob Engel, Thomas Schöps, Daniel Cremers, TU Munich*
- 3D Pedestrian Detection via Random Forest, *Gabriel Villalonga, Universitat Autònoma de Barcelona; Sebastian Ramos, Germán Ros, Computer Vision Center (CVC) and Universitat Autònoma de Barcelona; David Vázquez, CVC; Antonio M. López, CVC and Universitat Autònoma de Barcelona*
- The DAVIS Vision Sensor, *T. Delbruck, R. Berner, C. Brandli, V. Villeneuve, L. Longinotti, S.C. Liu, UZH-ETH Zurich*
- In-air Gestures Around Unmodified Mobile Devices, *Jie Song, Gábor Sörös, Fabrizio Pece, Sean R. Fanello, Shahram Izadi, Cem Keskin, Otmar Hilliges, ETH Zurich*
- GoCARB - A computer vision approach for counting carbohydrates, *M. Anthimopoulos, J. Dehais, S. Shevchik,*

R. Botwey, P. A. Fiave, University of Bern; D. Duke, Roche Diagnostics Operations Inc, A. Greenburg; P. Diem, S. Mougiakakou, University of Bern

1400–1645 Exhibits (Tagungszentrum)

- Same as Monday afternoon Exhibits (see pg.25)

1400–1645 Swiss Computer Vision Start-Up Event (Vestibul K)

1400–1645 Poster Video Spotlight Loop (Kongresssaal)

1400–1645 Poster Session 2B

(Gartensaal 1-24)
(Panoramasaal 25-52)

- The 3D Jigsaw Puzzle: Mapping Large Indoor Spaces, *Ricardo Martin-Brualla, Yanling He, Bryan Russell, University of Washington; Steve Seitz, Washington/Google*
- Pipe-Run Extraction and Reconstruction from Point Clouds, *Rongqi Qiu, University of Southern California; Qian-Yi Zhou, Stanford University; Ulrich Neumann, University of Southern California*
- Image-based 4-d Reconstruction Using 3-d Change Detection, *Ali Osman Ulusoy, Joseph Mundy, Brown University*
- VocMatch: Efficient Multiview Correspondence for Structure from Motion, *Michal Havlena, Konrad Schindler, ETH Zurich*
- Robust Global Translations with 1DSfM, *Kyle Wilson, Noah Snavely, Cornell University*
- Comparing Salient Object Detection Results without Ground Truth, *Long Mai, Feng Liu, Portland State University*
- RGBD Salient Object Detection: A Benchmark and Algorithms, *Houwen Peng, Bing Li, Weihua Xiong, Weiming Hu, Institute of Automation, CAS; Rongrong Ji, Xiamen University*
- Saliency Detection with Flash and No-flash Image Pairs, *Shengfeng He, Rynson Lau, City University of Hong Kong*
- Alpha Matting of Motion-Blurred Objects in Bracket Sequence Images, *Heesoo Myeong, Seoul National University; Stephen Lin, Microsoft Research Asia; Kyoung Mu Lee, Seoul National University*
- An Active Patch Model for Real World Texture and Appearance Classification, *Junhua Mao, Jun Zhu, Alan Yuille, UCLA*
- Material Classification based on Training Data Synthesized Using a BTF Database, *Michael Weinmann, Juergen Gall, Reinhard Klein, University of Bonn*
- Déjà Vu: Motion Prediction in Static Images, *Silvia Pntea, Jan van Gemert, Arnold Smeulders, University of Amsterdam*
- Transfer Learning Based Visual Tracking with Gaussian Process Regression, *Jin Gao, Institute of Automation, CAS; Haibin Ling, Temple University; Weiming Hu, Institute of Automation, CAS; Junliang Xing, NLP, IACAS*
- Separable Spatiotemporal Priors for Convex Reconstruction of Time-Varying 3D Point Clouds, *Tomas Simon, CMU; Jack Valmadre, CSIRO; Iain Matthews, Yaser Sheikh, CMU*
- Highly Overparameterized Optical Flow Using PatchMatch Belief Propagation, *Michael Hornáček, TU Vienna; Frederic Besse, Jan Kautz, University College London; Andrew Fitzgibbon, Microsoft Research; Carsten Rother, TU Dresden*
- Local Estimation of High Velocity Optical Flow with Correlation Image Sensor, *Hidekata Hontani, Go Oishi, Tomohiro Kitagawa, Nagoya Institute of Technology*
- Rank Minimization with Structured Data Patterns, *Viktor Larsson, Carl Olsson, Erik Bylow, Fredrik Kahl, Lund University*
- Duality and the Continuous Graphical Model, *Alexander Fix, Cornell University; Sameer Agarwal, Google*
- Spectral Clustering with a Convex Regularizer on Millions of Images, *Maxwell D. Collins, University of Wisconsin-Madison; Ji Liu, University of Rochester; Jia Xu, University of Wisconsin-Madison; Lopamudra Mukherjee, University of Wisconsin Whitewater; Vikas Singh, University of Wisconsin-Madison*
- Riemannian Sparse Coding of Positive Definite Matrices, *Anoop Cherian, INRIA; Suvrit Sra, MPI Tuebingen*

21. Robust Sparse Coding and Compressed Sensing with the Difference Map, *Will Landecker, Portland State University; Rick Chartrand, Los Alamos National Laboratory; Simon DeDeo, Indiana University*
22. Object Co-Detection via Efficient Inference in a Fully-Connected CRF, *Zeeshan Hayder, ANU-Nicta; Mathieu Salzmann, Xuming He, NICTA*
23. Spatial Pyramid Pooling in Deep Convolutional Networks for Visual Recognition, *Kaiming He, Microsoft Research Asia; Xiangyu Zhang, Xian Jiaotong University; Shaoqing Ren, USTC; Jian Sun, Microsoft Research Asia*
24. Context as Supervisory Signal: Discovering Objects with Predictable Context, *Carl Doersch, Abhinav Gupta, CMU; Alexei Efros, UC Berkeley*
25. Learning to Hash with Partial Tags: Exploring Correlation Between Tags and Hashing Bits for Large Scale Image Retrieval, *Qifan Wang, Luo Si, Purdue University; Dan Zhang, Facebook*
26. Multi-Class Open Set Recognition Using Probability of Inclusion, *Lalit Jain, University of Colorado Colorado Springs; Walter Scheirer, Harvard University; Terrance E. Boult, University of Colorado Colorado Springs*
27. Sequential Max-Margin Event Detectors, *Dong Huang, Shitong Yao, Yi Wang, Fernando De la Torre, CMU*
28. Which Looks Like Which: Exploring Inter-Class Relationships in Fine-Grained Visual Categorization, *Jian Pu, Chinese Academy Of Sciences; Yu-Gang Jiang, Fudan University; Jun Wang, IBM Research Center; Xiangyang Xue, Fudan University*
29. Object Detection and Viewpoint Estimation with Auto-masking Neural Network, *Linjie Yang, CUHK; Jianzhuang Liu, Huawei Technologies Co. Ltd.; Xiaoou Tang, CUHK*
30. Statistical and Spatial Consensus Collection for Detector Adaptation, *Enver Sangineto, DISI, University of Trento*
31. Deep Learning of Scene-Specific Classifier for Pedestrian Detection, *Xingyu Zeng, Wanli Ouyang, Meng Wang, Xiaogang Wang, The Chinese University of Hong Kong*
32. A Contour Completion Model for Augmenting Surface Reconstructions, *Nathan Silberman, New York University, Lior Shapira, Ran Gal, Microsoft Research; Pushmeet Kohli, Microsoft Research UK;*
33. Interactive Object Counting, *Carlos Arteta, University of Oxford; Victor Lempitsky, Skolkovo Institute of Science and Technology; Alison Noble, Andrew Zisserman, University of Oxford*
34. Recognizing City Identity Via Attribute Analysis of Geo-tagged Images, *Bolei Zhou, Liu Liu, Aude Oliva, Antonio Torralba, MIT*
35. A Fast and Simple Algorithm for Producing Candidate Regions, *Boyan Bonev, Alan Yuille, UCLA*
36. Closed-Form Approximate CRF Training for Scalable Image Segmentation, *Alexander Kolesnikov, IST Austria; Matthieu Guillaumin, ETH Zurich; Vittorio Ferrari, University of Edinburgh; Christoph Lampert, IST Austria*
37. A Graph Theoretic Approach for Object Shape Representation in Compositional Hierarchies using a Hybrid Generative-Descriptive Model, *Ümit Ruşen Aktaş, Mete Ozay, Aleš Leonardis; Jeremy Wyatt, University of Birmingham*
38. Finding Approximate Convex Shapes in RGBD Images, *Hao Jiang, Boston College*
39. ShapeForest: Building constrained Statistical Shape Models with Decision Trees, *Saša Grbić, Joshua Sweet, Razvan Ionasec, Siemens*
40. Optimizing Ranking Measures for Compact Binary Code Learning, *Guosheng Lin, Chunhua Shen, University of Adelaide; Jianxin Wu, Nanjing University*
41. Exploiting Low-rank Structure from Latent Domains for Domain Generalization, *Zheng Xu, Wen Li, Li Niu, Dong Xu, Nanyang Technological University, Singapore*
42. Sparse Additive Subspace Clustering, *Xiao-Tong Yuan, NUIST; Ping Li, Rutgers University*
43. Boosting VLAD with Supervised Dictionary Learning and High-Order Statistics, *Xiaojiang Peng, Southwest Jiaotong University; Limin Wang, The Chinese University of Hong Kong; Yu Qiao, Shenzhen Institutes of Advanced Technology, Chinese Academy of Science; Qiang Peng, Southwest Jiaotong University*
44. Recognizing Complex Events in Videos by Learning Key Static-Dynamic Evidences, *Kuan-Ting Lai, National Taiwan University; Dong Liu, Columbia University; Ming-Syan Chen, Academia Sinica; Shih-Fu Chang, Columbia University*

- 45. A Hierarchical Representation for Future Action Prediction, *Tian Lan, Tsung-Chuan Chen, Silvio Savarese, Stanford University*
- 46. Continuous Learning of Human Activity Models using Deep Nets, *Mahmudul Hasan, Amit Roy-Chowdhury, UC Riverside*
- 47. DaMN – Discriminative and Mutually Nearest: Exploiting Pairwise Category Proximity for Video Action Recognition, *Rui Hou, Amir Roshan Zamir, University of Central Florida; Rahul Sukthankar, Google; Mubarak Shah, UCF*
- 48. Spatio-temporal Object Detection Proposals, *Dan Oneata, Jerome Revaud, Jakob Verbeek, Cordelia Schmid, INRIA*
- 49-52 Papers from Oral Session 2A

1600–1645 Coffee Break

1645–1815 Oral Session 2B: Computational Photography and Low-Level Vision (Kongresssaal)

Chairs: Jason Corso (*SUNY Buffalo*)

Kyros Kutulakos (*University of Toronto*)

Format (15 min. for presentation + 3 min. for questions)

- 1. Depth-of-Field and Coded Aperture Imaging on XSlit Lens, *Jinwei Ye, Yu Ji, Wei Yang, Jingyi Yu, University of Delaware*
- 2. Refraction Wiggles for Measuring Fluid Depth and Velocity from Video, *Tianfan Xue, Michael Rubinstein, Neal Wadhwa, MIT; Anat Levin, Weizmann Institute of Science; Fredo Durand, William T. Freeman, MIT*
- 3. Blind Deblurring Using Internal Patch Recurrence, *Tomer Michaeli, Michal Irani, Weizmann Institute of Science*
- 4. Crisp Boundary Detection Using Pointwise Mutual Information, *Phillip Isola, Daniel Zoran, Dilip Krishnan, Edward H. Adelson, MIT*
- 5. Rolling Guidance Filter, *Qi Zhang, Xiaoyong Shen, Li Xu, Jiaya Jia, Chinese University of Hong Kong*
(These papers will also be presented in Poster Session 3A)

Wednesday, September 10

0730-1830 Registration (Vestibul K)

0830-1115 Demos (Panoramasaal-Foyer)

- Collaborative SfM Reconstruction & Accurate, Real-Time Pose Estimation for Mobile Devices, *Sven Middelberg, Ole Untzelmann, Leif Kobbelt, RWTH Aachen University; Torsten Sattler, ETH Zurich*
- Live object detection and 6D pose estimation using 3D object coordinates, *Eric Brachmann, Alexander Krull, Frank Michel, Stefan Gumhold, TU Dresden; Jamie Shotton, Microsoft Research, Cambridge; Carsten Rother, TU Dresden*
- Automatic Geometrical Model Segmentation, Façade-Parsing and LOD3 Model Generation from 3D Point Clouds, *William Ngattem, Martin Drauschke, Helmut Mayer, Bundeswehr University Munich*
- 3DAround – A Mobile App for 3D Capture Based on Dacuda SLAM Scan Technology for Real-Time Feedback, *A. Tevs, M. Werlberger, E. Fonseka, B. Köppel, A. Ilıc, Dacuda*

0830-1115 Exhibits (Tagungszentrum)

- Same as Monday afternoon Exhibits (see pg. 25)

0830-1115 Poster Video Spotlight Loop (Kongresssaal)

0830-1115 Poster Session 3A

(Gartensaal: posters 1-24)

(Panoramasaal: posters 25-51)

1. Physically Grounded Spatio-temporal Object Affordances, *Hema S. Koppula, Ashutosh Saxena, Cornell University*
2. Schwarzs: Locally Projective Image Warps Based on 2D Schwarzsian Derivatives, *Rahat Khan, Daniel Pizarro, Adrien Bartoli, Université d'Auvergne*
3. gDLS: A Scalable Solution to the Generalized Pose and Scale Problem, *Chris Sweeney, Victor Fragoso, Tobias Höllerer, Matthew Turk, UC Santa Barbara USA*

4. Generalized Connectivity Constraints for Spatio-temporal Multi-view 3D Reconstruction, *Martin Ralf Oswald, Jan Stühmer, Daniel Cremers, TU München;*
5. Passive Tomography of Turbulence Strength, *Marina Alterman, Yoav Schechner, Technion Israel; Minh Vo, Srinivas Narasimhan, CMU*
6. A Non-local Method for Robust Noisy Image Completion, *Wei Li, Lei Zhao, Duanqing Xu, Dongming Lu, Zhejiang University*
7. Improved Motion Invariant Deblurring through Motion Estimation, *Scott McCloskey, Honeywell*
8. Consistent Matting for Light Field Image, *Donghyeon Cho, Sunyeong Kim, Yu-Wing Tai, KAIST*
9. Consensus of Regression for Occlusion-Robust Facial Feature Localization, *Xiang Yu, Rutgers University; Zhe Lin, Jonathan Brandt, Adobe Research; Dimitris Metaxas, Rutgers University*
10. Learning the Face Prior for Bayesian Face Recognition, *Chaochao Lu, Xiaou Tang, The Chinese University of Hong Kong*
11. Spatio-temporal Event Classification using Time-Series Kernel Based Structured Sparsity, *László Jeni, CMU; András Lőrincz; Zoltán Szabó, University College London; Jeffrey Cohn, University of Pittsburgh; Takeo Kanade, CMU*
12. Feature Disentangling Machine - A Novel Approach of Feature Selection and Disentangling in Facial Expression Analysis, *Ping Liu, University of South Carolina; Joey Tianyi Zhou, Nanyang Technological University; Ivor Wai-Hung Tsang, University of Technology, Australia; Zibo Meng, Shizhong Han, Yan Tong, University of South Carolina;*
13. Joint Unsupervised Face Alignment and Behaviour Analysis, *Lazaros Zafeiriou, Epameinondas Antonakos, Stefanos Zafeiriou, Maja Pantic, Imperial College London*
14. Learning a Deep Convolutional Network for Image Super-Resolution, *Chao Dong, Chen Change Loy, The Chinese University of Hong Kong; Kaiming He, Microsoft Research; Xiaou Tang, The Chinese University of Hong Kong*
15. Discriminative Indexing for Probabilistic Image Patch Priors, *Yan Wang, Columbia University; Sungghyun Cho, Jue Wang, Adobe Research; Shih-Fu Chang, Columbia University*

16. Modeling Video Dynamics with Deep Dynencoder, *Xing Yan, Hong Chang, Shiguang Shan, Xilin Chen, Chinese Academy of Sciences*
17. Good Image Priors for Non-blind Deconvolution: Generic vs Specific, *Libin Sun, Brown University; Sunghyun Cho, Jue Wang, Adobe Research; James Hays, Brown University*
18. Image Deconvolution Ringing Artifact Detection and Removal via PSF Frequency Analysis, *Ali Mosleh, J.M. Pierre Langlois, Ecole Polytechnique Montréal; Paul Green, Algalux*
19. View-Consistent 3D Scene Flow Estimation over Multiple Frames, *Christoph Vogel, ETH Zurich; Stefan Roth, TU Darmstadt; Konrad Schindler, ETH Zurich*
20. Hand Waving Away Scale, *Christopher Ham, University of Queensland; Simon Lucey, CMU; Surya Singh, University of Queensland*
21. A Non-Linear Filter for Gyroscope-Based Video Stabilization, *Steven Bell, Stanford University; Alejandro Troccoli, Kari Pulli, NVIDIA*
22. Multi-modal and Multi-spectral Registration for Natural Images, *Xiaoyong Shen, Li Xu, Qi Zhang, Jiaya Jia, Chinese University of Hong Kong*
23. Using Isometry to Classify Correct/Incorrect 3D-2D Correspondences *Toby Collins, ALCoV, ISIT; Adrien Bartoli, Université d'Auvergne*
24. Bilateral Functions for Global Motion Modeling, *Wen-Yan Daniel Lin, ADSC Singapore; Ming-Ming Cheng, University of Oxford; Jiangbo Lu, ADSC Singapore; Hongsheng Yang, UNC Chapel Hill; Minh Do, University of Illinois at Urbana-Champaign; Philip Torr, University of Oxford*
25. Vcdb: A Large-Scale Database for Partial Copy Detection in Videos, *Yu-Gang Jiang, Yudong Jiang, Jiajun Wang, Fudan University;*
26. Single-Image Super-Resolution: A Benchmark, *Chih-Yuan Yang, UC Merced; Chao Ma, Shanghai Jiao Tong University; Ming-Hsuan Yang, UC Merced*
27. Well Begun is Half Done: Generating High-Quality Seeds for Automatic Image Dataset Construction from Web, *Yan Xia, USTC; Xudong Cao, Fang Wen, Jian Sun, Microsoft Research Asia*
28. Zero-Shot Learning via Visual Abstraction, *Stanislaw Antol, Virginia Tech; Larry Zitnick, Microsoft Research Redmond; Devi Parikh, Virginia Tech*
29. Discovering Groups of People in Images, *Wongun Choi, NEC Labs; YuWei Chao, University of Michigan; Caroline Pantofaru, Google; Silvio Savarese, Stanford University*
30. Untangling Object-View Manifold for Multiview Recognition and Pose Estimation, *Amr Bakry, Ahmed Elgammal, Rutgers University*
31. Parameterizing Object Detectors in the Continuous Pose Space, *Kun He, Boston University; Leonid Sigal, Disney Research; Stan Sclaroff, Boston University*
32. Jointly Optimizing 3D Model Fitting and Fine-Grained Classification, *Yen-Liang Lin, National Taiwan University; Vlad Morariu, University of Maryland; Winston Hsu, National Taiwan University; Larry Davis, University of Maryland*
33. Pipelining Localized Semantic Features for Fine-Grained Action Recognition, *Yang Zhou, UTSA; Bingbing Ni, ADSC Singapore; Shuicheng Yan, National University of Singapore; Pierre Moulin, UIUC; Qi Tian, UT San Antonio*
34. Robust Scene Text Detection with Convolution Neural Network Induced MSER Trees, *Weilin Huang, Chinese Academy of Sciences; Yu Qiao, Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences; Xiaoou Tang, CUHK*
35. Deep Features for Text Spotting, *Max Jaderberg, Andrea Vedaldi; Andrew Zisserman, University of Oxford*
36. Improving Image-Sentence Embeddings Using Large Weakly Annotated Photo Collections, *Yunchao Gong, UNC Chapel Hill; Liwei Wang, Micah Hodosh, Julia Hockenmaier, Svetlana Lazebnik, UIUC*
37. Strengthening the Effectiveness of Pedestrian Detection with Spatially Pooled Features, *Sakrapee Paisitkriangkrai, Chunhua Shen, Anton Van den Hengel, The University of Adelaide*
38. Selecting Influential Examples: Active Learning with Expected Model Output Changes, *Alexander Freytag, Erik Rodner, Joachim Denzler, FSU Jena*
39. Efficient Sparsity Estimation via Marginal-Lasso Coding, *Tzu-Yi Hung, Nanyang Technological Univ.; Jiwen Lu, ADSC; Yap-Peng Tan, NTU, Singapore; Shenghua Gao, Shanghai Tech University*

40. Continuous Conditional Neural Fields for Structured Regression, *Tadas Baltrušaitis, Peter Robinson, University of Cambridge; Louis-Philippe Morency, University of Southern California*
41. Learning to Rank using High-Order Information, *Puneet Kumar Dokania, Ecole Centrale de Paris and INRIA Saclay; Aseem Behl, IIIT, Hyderabad; C.V. Jawahar, IIIT Hyderabad; M. Pawan Kumar, Ecole Centrale Paris INRIA Saclay*
42. Support Vector Guided Dictionary Learning, *Sijia Cai, Tianjin University; Wangmeng Zuo, Harbin Institute of Technology; Lei Zhang, The Hong Kong Polytechnic University; Xiangchu Feng, Xidian University; Ping Wang, Tianjin University*
43. Video Object Discovery and Co-segmentation with Extremely Weak Supervision, *Le Wang, Xi'an Jiaotong University; Gang Hua, Stevens Institute of Technology; Rahul Sukthankar, Google; Jianru Xue, Nanning Zheng, Xi'an Jiaotong University*
44. Supervoxel-Consistent Foreground Propagation in Video, *Suyog Dutt Jain, Kristen Grauman, University of Texas at Austin*
45. Clustering with Hypergraphs: The Case for Large Hyperedges, *Pulak Purkait, Tat-Jun Chin, University of Adelaide; Hanno Ackermann, Leibniz University Hannover; David Suter, The University of Adelaide*
46. Person Re-identification by Video Ranking, *Taiqing Wang, Tsinghua University; Shaogang Gong, Xiatian Zhu, Queen Mary University of London; Shengjin Wang, Tsinghua University*
- 47-51 Papers from Oral Session 2B

1045–1115 Coffee break

1115–1230 Oral Session 3A: Vision (Kongresssaal)

Chairs: Peter Gehler (*Max Planck Institute Tuebingen*)
Jamie Shotton (*Microsoft*)

Format (15 min. for presentation + 3 min. for questions)

1. Bayesian Nonparametric Intrinsic Image Decomposition, *Jason Chang, Randi Cabezas, John Fisher, MIT*

2. Face Detection without Bells and Whistles, *Markus Mathias, KULeuven; Rodrigo Benenson, MPI-Saarbruecken, Marco Pedersoli, KULeuven; Luc Van Gool, KULeuven/ETH Zurich*
3. On Image Contours of Projective Shapes, *Jean Ponce, ENS/INRIA, Martial Hebert, CMU*
4. Programmable Automotive Headlights, *Robert Tamburo, Eriko Nurvitadhi, Abhishek Chugh, Mei Chen, Anthony Rowe, Takeo Kanade, Srinivasa Narasimhan, CMU*
(These papers will also be presented in [Poster Session 3B](#))

1230–1400 Lunch Break

1400–1645 Demos (Panoramasaal-Foyer)

- Real-Time Minimization of the Piecewise Smooth Mumford-Shah Functional, *Evgeny Strelakovsky, Daniel Cremers, TU Munich*
- Slot Car Racer, *T. Delbruck, R. Berner, C. Brandli, V. Villeneuve, L. Longinotti, S.C. Liu, UZH-ETH Zurich*
- Fast Large-Scale Convolutional Object Detection, *Judy Hoffman, Sergio Guadarrama, Jonathan Long, Jeff Donahue, Eric Tzeng, Ross Girshick, Kate Saenko, Trevor Darrell, UC Berkeley*
- SVO: Fast Semi-Direct Monocular Visual Odometry, *C. Forster, M. Pizzoli, D. Scaramuzza, University of Zurich*

1400–1645 Exhibits (Tagungszentrum)

- Same as Monday afternoon Exhibits (see pg. 25)

1400–1645 Poster Video Spotlight Loop (Kongresssaal)

1400–1645 Poster Session 3B

(Gartensaal: posters 1-24)

(Panoramasaal: posters 25-52)

1. ROCHADE: Robust Checkerboard Advanced Detection for Camera Calibration, *Simon Placht, Metrilus GmbH; Peter Fürsattel, Universität Erlangen-Nürnberg; Etienne Assoumou Mengue, Pattern Recognition Lab; Hannes Hofmann, Christian Schaller, Michael Balda, Metrilus GmbH; Elli Angelopoulou, University of Erlangen*
2. Correcting for Duplicate Scene Structure in Sparse 3D Reconstruction, *Jared Heinly, Enrique Dunn, Jan-Michael Frahm, UNC Chapel Hill*
3. Total Moving Face Reconstruction, *Supasorn Suwajanakorn, Ira Kemelmacher-Shlizerman, University of Washington; Steve Seitz, Washington/Google*
4. Automatic Single-View Calibration and Rectification from Parallel Planar Curves, *Eduardo Corral-Soto, James H. Elder, York University*
5. On Sampling Focal Length Values to Solve the Absolute Pose Problem, *Torsten Sattler, ETH Zurich; Chris Sweeney, UC Santa Barbara; Marc Pollefeys, ETH Zurich*
6. Video Registration to SfM Models, *Till Kroeger, Luc Van Gool, ETH Zurich*
7. Soft Cost Aggregation with Multi-Resolution Fusion, *Xiao Tan, UNSW; Changming Sun, Dadong Wang, Yi Guo, CSIRO; Tuan Pham, University of Aizu*
8. Inverse Kernels for Fast Spatial Deconvolution, *Li Xu, Xin Tao, Jiaya Jia, Chinese University of Hong Kong*
9. Deep Network Cascade for Image Super-resolution, *Zhen Cui, Hong Chang, Shiguang Shan, ICT, CAS; Bineng Zhong, Huaqiao University; Xilin Chen, ICT, CAS*
10. Spectral Edge Image Fusion: Theory and Applications, *David Connah, University of Bradford; Mark Samuel Drew, Simon Fraser University; Graham Finlayson, University of East Anglia*
11. Spatio-chromatic Opponent Features, *Ioannis Alexiou, Anil A. Bharath, Imperial College London*
12. Modeling Perceptual Color Differences by Local Metric Learning, *Michaël Perrot, Amaury Habrard, Damien Muselet, Marc Sebban, Université Jean Monnet*
13. Online Graph-Based Tracking, *Hyeonseob Nam, Seunghoon Hong, Bohyung Han, POSTECH*
14. Fast Visual Tracking via Dense Spatio-temporal Context Learning, *Kaihua Zhang, NUIST; Lei Zhang, The Hong Kong Polytechnic; Qingshan Liu, NUIST; David Zhang, Hong Kong Polytechnic; Ming-Hsuan Yang, UC Merced*
15. Extended Lucas-Kanade Tracking, *Shaul Oron, Tel-Aviv University; Aharon Bar-Hillel, Microsoft; Shai Avidan, Tel-Aviv University*
16. Appearances Can Be Deceiving: Learning Visual Tracking from Few Trajectory Annotations, *Santiago Manen, Junseok Kwon, Matthieu Guillaumin, Luc Van Gool, ETH Zurich*
17. Generalized Background Subtraction using Superpixels with Label Integrated Motion Estimation, *Jongwoo Lim, Hanyang University; Bohyung Han, POSTECH*
18. Spectra Estimation of Fluorescent and Reflective Scenes by Using Ordinary Illuminants, *Yinqiang Zheng, Imari Sato, National Institute of Informatics; Yoichi Sato, University of Tokyo*
19. Interreflection Removal Using Fluorescence, *Ying Fu, The University of Tokyo; Antony Lam, National Institute of Informatics; Yasuyuki Matsushita, Microsoft Research Asia; Imari Sato, National Institute of Informatics; Yoichi Sato, University of Tokyo*
20. Intrinsic Face Image Decomposition with Human Face Priors, *Chen Li, Kun Zhou, Zhejiang University; Stephen Lin, Microsoft Research Asia*
21. Recovering Scene Geometry under Wavy Fluid via Distortion and Defocus Analysis, *Mingjie Zhang, Xing Lin, Tsinghua University; Mohit Gupta, Columbia University; Jinli Suo, Qionghai Dai, Tsinghua University*
22. Human Detection using Learned Part Alphabet and Pose Dictionary, *Cong Yao, Xiang Bai, Wenyu Liu, Huazhong University of Science and Technology; Longin Jan Latecki, Temple University*
23. SPADE: Scalar Product Accelerator by Integer Decomposition for Object Detection, *Mitsuru Ambai, Ikuro Sato, Denso IT Laboratory, Inc.*
24. Detecting Snap Points in Egocentric Video with a Web Photo Prior, *Bo Xiong, Kristen Grauman, University of Texas at Austin*

25. Towards Unified Object Detection and Semantic Segmentation, *Jian Dong, National University of Singapore; Qiang Chen, IBM; Shuicheng Yan, National University of Singapore; Alan Yuille, UCLA*
26. Foreground Consistent Human Pose Estimation using Branch and Bound, *Jens Puwein, Luca Ballan, ETH Zurich; Remo Ziegler, Vizrt; Marc Pollefeys, ETH Zurich*
27. Human Pose Estimation with Fields of Parts, *Martin Kiefel, Peter Gehler, Max Planck Institute for Intelligent Systems*
28. Unsupervised Video Adaptation for Parsing Human Motion, *Haoquan Shen, Zhejiang University; Shouou-I Yu, Carnegie Mellon University; Yi Yang, University of Queensland; Deyu Meng, Xi'an Jiaotong University; Alexander Hauptmann, Carnegie Mellon University*
29. Training Object Class Detectors from Eye Tracking Data, *Dim Papadopoulos, Alasdair D. Clarke, Frank Keller, Vittorio Ferrari, University of Edinburgh*
30. Depth Based Object Detection from Partial Pose Estimation of Symmetric Objects, *Ehud Barnea, Ohad Ben-Shahar, Ben-Gurion University, Israel*
31. Edge Boxes: Locating Object Proposals from Edges, *Larry Zitnick, Piotr Dollár, Microsoft Research Redmond*
32. Training Deformable Object Models for Human Detection Based on Alignment and Clustering, *Benjamin Drayer, Thomas Brox, University of Freiburg*
33. Predicting Actions from Static Scenes, *Tuan-Hung Vu, WILLOW; Catherine Olsson, MIT CSAIL, NYU CNS; Ivan Laptev, INRIA Paris; Aude Oliva, MIT; Josef Sivic, INRIA*
34. Exploiting Privileged Information from Web Data for Image Categorization, *Wen Li, Li Niu, Dong Xu, Nanyang Technological University*
35. Multi-modal Unsupervised Feature Learning for RGB-D Scene Labeling, *Anran Wang, Nanyang Technological University; Jiwen Lu, ADSC; Gang Wang, Jianfei Cai, Tat-Jen Cham, Nanyang Technological University*
36. Discriminatively Trained Dense Surface Normal Estimation, *L'ubor Ladický, Bernhard Zeisl, Marc Pollefeys, ETH Zurich*
37. Numerical Inversion of SRNFs for Efficient Elastic Shape Analysis of Star-Shaped Objects, *Qian Xie, Florida State University; Ian Jermy, INRIA; Sebastian Kurtek, Ohio State University; Anuj Srivastava, Florida State University*
38. Non-Associative Higher-Order Markov Networks for Point Cloud Classification, *Mohammad Najafi, Sarah Taghavi Namin, NICTA - ANU; Mathieu Salzmann, Lars Petersson, NICTA*
39. Learning Where To Classify In Multi-View Semantic Segmentation, *Hayko Riemenschneider, András Bódis-Szomorú, Julien Weissenberg, Luc Van Gool, ETH Zurich*
40. Stixmantics: A Medium-Level Model for Real-Time Semantic Scene Understanding, *Timo Scharwächter, MarkusENZweiler, Uwe Franke, Daimler AG; Stefan Roth, TU Darmstadt*
41. Sparse Dictionaries for Semantic Segmentation, *Lingling Tao, Johns Hopkins University; Fatih Porikli, NICTA/ANU; René Vidal, Johns Hopkins University*
42. Video Action Detection with Relational Dynamic-Poselets, *Limin Wang, Chinese University of Hong Kong; Yu Qiao, Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences; Xiaoou Tang, Chinese University of Hong Kong*
43. Action Recognition with Stacked Fisher Vectors, *Xiaojiang Peng, Southwest Jiaotong University; Changqing Zou, Hengyang Normal University; Yu Qiao, Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences; Qiang Peng, Southwest Jiaotong University*
44. A Discriminative Model with Multiple Temporal Scales for Action Prediction, *Yu Kong, Dmitry Kit, Yun Fu, Northeastern University*
45. Seeing is Worse than Believing: Reading People's Minds Better than Computer-Vision Methods Recognize Actions, *Andrei Barbu, MIT; Daniel Barrett, Purdue University; Wei Chen, SUNY at Buffalo; Narayanaswamy Siddharth, Purdue University; Caiming Xiong, SUNY at Buffalo; Jason Corso, University of Michigan; Christiane D. Fellbaum, Princeton University; Catherina Hanson, Stephen José Hanson, Rutgers University; Sébastien Hélie, Purdue University; Evguenia Malai, University of Texas at Arlington; Barak A. Pearlmutter, National University of Ireland Maynooth; Jeffrey Mark Siskind, Thomas Michael Talavage, Ronnie B. Wilbur, Purdue University*
46. Weakly Supervised Action Labeling in Videos Under Ordering Constraints, *Piotr Bojanowski, Remi LaJugie, INRIA; Francis Bach, ENS Paris; Ivan Laptev, INRIA Paris; Jean Ponce, ENS Paris; Cordelia Schmid, Josef Sivic, INRIA*

- 47. Active Random Forests: An application to Autonomous Unfolding of Clothes, *Andreas Doumanoglou, Tae-Kyun Kim, Xiaowei Zhao, Imperial College London; Sotiris Malassiotis, CERTH*
- 48. Model-Free Segmentation and Grasp Selection of Unknown Stacked Objects, *Umar Asif, Mohammed Bennamoun, Ferdous Sohel, The University of Western Australia*
- 49-52 Papers from Oral Session 3A

1600–1645 Coffee break

1645–1815 Oral Session 3B: Segmentation and Saliency (Kongresssaal)

Chairs: Thomas Brox (*University of Freiburg*)

Carsten Rother (*TU Dresden*)

Format (15 min. for presentation + 3 min. for questions)

- 1. Convexity Shape Prior for Segmentation, *Lena Gorelick, Olga Veksler, Yuri Boykov, University of Western Ontario; Claudia Nieuwenhuis, UC Berkeley*
- 2. Pseudo-Bound Optimization for Binary Energies, *Meng Tang, Ismail Ben Ayed, Yuri Boykov, University of Western Ontario*
- 3. A Closer Look at Context: From Coxels to the Contextual Emergence of Object Saliency, *Rotem Mairon, Ohad Ben-Shahar, Ben Gurion University*
- 4. Geodesic Object Proposals, *Philipp Krähenbühl, Stanford University; Vladlen Koltun, Adobe*
- 5. Microsoft COCO: Common Objects in Context, *Tsung-Yi Lin, Cornell Tech; Michael Maire, Caltech; Serge Belongie, Cornell Tech; James Hays, Brown University; Pietro Perona, Caltech; Deva Ramanan, UC Irvine; Piotr Dollár, Larry Zitnick, Microsoft Research*

(These papers will also be presented in Poster Session 4A)

1900–2300 Conference Dinner (ETH Polyterrasse)

Options for transportation from Kongresshaus to ETH Polyterrasse

Walk (some guides will be available)



Take public transportation

- Tram 9 from **Burkliplatz** to **ETH/Unispital** (dir. Hirzenbach)
- Tram 5 from **Burkliplatz** to **Platte** (dir. Kirche Fluntern)
- Tram 6 from **Stockerstrasse** to **ETH/Unispital** (dir. Zoo)
- Tram 7 from **Stockerstrasse** to **Central** (dir. Bahnhof Stettbach), followed by **Polybahn** (funicular up to Polyterrasse, operates until 19:15)
- Tram 4/15 from **Bellevue** to **Central** (dir. Bahnhof Altstetten), followed by **Polybahn**



Thursday, September 11

0730-0830 Registration (Vestibul K)

0830-1115 Demos (Panoramasaal-Foyer)

- 3D modeling on a mobile phone, *Petri Tanskanen, Kalin Kolev, Amael Delaunoy, Marc Poffeys, ETH Zurich*
- Real-Time Scalable Edge-Based Object Detector (a light weight method on Android), *Dima Damen, Yannan Cui, Ping Wang, Teesid Leelasawassuk, Walterio Mayol-Cuevas, University of Bristol*
- Mimic-Me: Affect-Sensitive Game with Humanoid Robot, *Jie Shen, Shiyang Cheng, and Maja Pantic, Imperial College London*
- The Chameleon Tracker in 3D, *David Joseph Tan, Nassir Navab, TU München; Slobodan Ilic, Siemens CT*

0830-1115 Exhibits (Tagungszentrum)

- Same as Monday afternoon Exhibits (see pg. 25)

0830-1115 Poster Video Spotlight Loop (Kongresssaal)

0830-1115 Poster Session 4A

(Gartensaal: posters 1-24)

(Panoramasaal: posters 25-51)

1. Efficient Joint Segmentation, Occlusion Labeling, Stereo and Flow Estimation, *Koichiro Yamaguchi, David McAllester, TTI-Chicago; Raquel Urtasun, University of Toronto*
2. Robust Bundle Adjustment Revisited, *Christopher Zach, Toshiba Research Europe*
3. Accurate Intrinsic Calibration of Depth Camera with Cuboids, *Bingwen Jin, Hao Lei, Weidong Geng, Zhejiang University*
4. Statistical Pose Averaging with Non-isotropic and Incomplete Relative Measurements, *Roberto Tron, Kostas Daniilidis, University of Pennsylvania*

5. A Pot of Gold: Rainbows as a Calibration Cue, *Scott Workman, Radu Mihail, Nathan Jacobs, University of Kentucky*
6. Let There Be Color! - Large-Scale Texturing of 3D Reconstructions, *Michael Waechter, Nils Moehrl, Michael Goesele, TU Darmstadt*
7. All-In-Focus Synthetic Aperture Imaging, *Tao Yang, Yanning Zhang, Northwestern Polytechnical University; Jingyi Yu, University of Delaware; Jing Li, Xidian University; Wenguang Ma, Xiaomin Tong, Northwestern Polytechnical University; Rui Yu, University College London; Lingyan Ran, Northwestern Polytechnical University*
8. Photo Uncrop, *Qi Shan, Brian Curless, University of Washington; Yasutaka Furukawa, Washington University; Carlos Hernandez, Google; Steve Seitz, Washington/Google*
9. Solving Square Jigsaw Puzzles with Loop Constraints, *Kilho Son, James Hays, David Cooper, Brown University*
10. Geometric Calibration of Micro-Lens-Based Light-Field Cameras, *Yunsu Bok, Hae-Gon Jeon, In So Kweon, KAIST*
11. Spatio-temporal Matching for Human Detection in Video, *Feng Zhou, Fernando De la Torre, Carnegie Mellon University*
12. Collaborative Facial Landmark Localization for Transferring Annotations Across Datasets, *Brandon Smith, Li Zhang, University of Wisconsin-Madison*
13. Facial Landmark Detection by Deep Multi-task Learning, *Zhanpeng Zhang, Ping Luo, Chen-Change Loy, Xiaoou Tang, The Chinese University of Hong Kong*
14. Joint Cascade Face Detection and Alignment, *Dong Chen, Shaoqing Ren, University of Science and Technology of China; Yichen Wei, Xudong Cao, Jian Sun, Microsoft Research Asia*
15. Weighted Block-Sparse Low Rank Representation for Face Clustering in Videos, *Shijie Xiao, Nanyang Technological University; Mingkui Tan, University of Adelaide; Dong Xu, Nanyang Technological University*
16. Crowd Tracking with Dynamic Evolution of Group Structures, *Feng Zhu, University of Science and Technology of China; Xiaogang Wang, Chinese University of Hong Kong; Nenghai Yu, University of Science and Technology of China*

17. Tracking using Multilevel Quantizations, *Zhibin Hong, University of Technology, Sydney; Chaohui Wang, Max Planck Institute for Intelligent Systems; Xue Mei, Danil Prokhorov, TEMA TTC; Dacheng Tao, University of Technology, Sydney*
18. Occlusion and Motion Reasoning for Long-term Tracking, *Yang Hua, Karteek Alahari, Cordelia Schmid, INRIA*
19. MEEM: Robust Tracking via Multiple Experts using Entropy Minimization, *Jianming Zhang, Shugao Ma, Stan Sclaroff, Boston University*
20. Robust Motion Segmentation with Unknown Correspondences, *Pan Ji, Hongdong Li, Australian National University; Mathieu Salzmann, NICTA; Yuchao Dai, Australian National University*
21. Monocular Multiview Object Tracking with 3D Aspect Parts, *Yu Xiang, Changkyu Song, University of Michigan; Roozbeh Mottaghi, Silvio Savarese, Stanford University*
22. Modeling Blurred Video with Layers, *Jonas Wulff, Michael Black, Max Planck Institute for Intelligent Systems*
23. Efficient Image and Video Co-localization with Frank-Wolfe Algorithm, *Armand Joulin, Kevin Tang, Fei-Fei Li, Stanford University*
24. Non-parametric Higher-order Random Fields for Image Segmentation, *Pablo Márquez-Neila, Universidad Politécnica de Madrid; Pushmeet Kohli, Microsoft Research UK; Carsten Rother, TU Dresden; Luis Baumela, Universidad Politécnica de Madrid*
25. Co-Sparse Textual Similarity for Interactive Segmentation, *Claudia Nieuwenhuis, UC Berkeley; Simon Hawe, Martin Kleinstueber, Daniel Cremers, TU Munich*
26. A Convergent Incoherent Dictionary Learning Algorithm for Sparse Coding, *Chenlong Bao, Yuhui Quan, Hui Ji, National University of Singapore*
27. Free-Shape Polygonal Object Localization, *Xiaolu Sun, Mario Christoudias, Pascal Fua, EPFL*
28. Interactively Guiding Semi-Supervised Clustering via Attribute-Based Explanations, *Shrenik Lad, Devi Parikh, Virginia Tech*
29. Attributes make sense on segmented objects, *Zhenyang Li, Efstratios Gavves, Thomas Mensink, Cees Snoek, University of Amsterdam*
30. Towards Transparent Systems: Semantic Characterization of Failure Modes, *Aayush Bansal, Carnegie Mellon University; Ali Farhadi, University of Washington; Devi Parikh, Virginia Tech*
31. Orientation Covariant Aggregation of Local Descriptors with Embeddings, *Giorgos Tolias, Teddy Furon, Hervé Jégou, INRIA*
32. Similarity-invariant Sketch-Based Image Retrieval in Large Databases, *Sarthak Parui, Anurag Mittal, IIT Madras*
33. Discovering Object Classes from Activities, *Abhilash Srikantha, Juergen Gall, University of Bonn*
34. Weakly Supervised Object Localization with Latent Category Learning, *Chong Wang, NLP, CASIA; Weiqiang Ren, CASIA, CRIPAC; Kaiqi Huang, National Laboratory of Pattern Recognition;*
35. Food-101 -Mining Discriminative Components with Random Forests, *Lukas Bossard, Matthieu Guillaumin, Luc Van Gool, ETH Zurich*
36. Latent-Class Hough Forests for 3D Object Detection and Pose Estimation, *Alykhan Tejani, Danhang Tang, Rigas Kouskouridas, Tae-Kyun Kim, Imperial College London*
37. FPM: Fine pose Part-Based Model with 3D CAD Models, *Joseph Lim, Aditya Khosla, Antonio Torralba, MIT*
38. Learning High-level Judgments of Urban Perception, *Vicente Ordonez, Tamara Berg, UNC Chapel Hill*
39. CollageParsing: Nonparametric Scene Parsing by Adaptive Overlapping Windows, *Frederick Tung, Jim Little, University of British Columbia*
40. Discovering Video Clusters from Visual Features and Noisy Tags, *Arash Vahdat, Guang-Tong Zhou, Greg Mori, Simon Fraser University*
41. Category-Specific Video Summarization, *Danila Potapov, Matthijs Douze, Zaid Harchaoui, Cordelia Schmid, INRIA*
42. Assessing the Quality of Actions, *Hamed Pirsiavash, Carl Vondrick, Antonio Torralba, MIT*
43. HiRF: Hierarchical Random Field for Collective Activity Recognition in Videos, *Mohamed Amer, Peng Lei, Sinisa Todorovic, Oregon State University*
44. Part Bricolage: Flow-assisted Part-based Graphs for Detecting Activities in Videos, *Sukrit Shankar, Vijay Badrinarayanan, Roberto Cipolla, University of Cambridge*

45. GIS-Assisted Object Detection and Geospatial Localization, *Shervin Ardeshtir, Amir Roshan Zamir, Alejandro Torroella, Mubarak Shah, University of Central Florida*
46. Context-Based Pedestrian Path Prediction, *Julian Francisco Kooij, University of Amsterdam; Nicolas Schneider, Fabian Flohr, Daimler AG; Darius Gavrila, University of Amsterdam*
- 47-51 Papers from Oral Session 3B

1030-1115 Coffee Break

1115-1230 Oral session 4A: Context and 3D Scenes (Kongresssaal)

Chairs: Lourdes Agapito (*University College London*)
Hongdong Li (*Australian National University*)

Format (15 min. for presentation + 3 min. for questions)

1. Sliding Shapes for 3D Object Detection in Depth Images, *Shuran Song, Jianxiong Xiao, Princeton University*
 2. Integrating Context and Occlusion for Car Detection by Hierarchical And-Or Model, *Bo Li, BIT/UCLA; Tianfu Wu, Song-Chun Zhu, UCLA*
 3. PanoContext: A Whole-Room 3D Context Model for Panoramic Scene Understanding, *Yinda Zhang, Shuran Song, Ping Tan, Jianxiong Xiao, Princeton University*
 4. Unfolding an Indoor Origami World, *David Ford Fouhey, Abhinav Gupta, Martial Hebert, CMU*
- (These papers will also be presented in Poster Session 4B)

1230-1400 Lunch break

1400-1645 Poster Video Spotlight Loop (Kongresssaal)

1400-1645 Poster Session 4B

(Gartensaal: posters 1-24)

(Panoramasaal: posters 25-52)

1. Joint Semantic Segmentation and 3D Reconstruction from Monocular Video, *Abhijit Kundu, Yin Li, Frank Dellaert, Fuxin Li, James Rehg, Georgia Institute of Technology*

2. A New Variational Framework for Multiview Surface Reconstruction, *Ben Semerjian, Urban Robotics*
3. Multi-Body Depth-Map Fusion with Non-Intersection Constraints, *Bastien Jacquet, Christian Häne, ETH Zürich; Roland Angst, Stanford University; Marc Pollefeys, ETH Zürich*
4. Shape from Light Field meets Robust PCA, *Stefan Heber, Thomas Pock, TU Graz*
5. Cross-Age Reference Coding for Age-Invariant Face Recognition and Retrieval, *Bor-Chun Chen, Chu-Song Chen, Academia Sinica; Winston Hsu, National Taiwan University*
6. Reverse Training: An efficient Approach for Image Set Classification, *Munawar Hayat, Mohammed Bannamoun, Senjian An, University of Western Australia*
7. Real-Time Exemplar-Based Face Sketch Synthesis, *Yibing Song, Linchao Bao, Qingxiong Yang, City University of Hong Kong; Ming-Hsuan Yang, UC Merced*
8. Domain-Adaptive Discriminative One-Shot Learning of Gestures, *Tomas Pfister, University of Oxford; James Charles, University of Leeds; Andrew Zisserman, University of Oxford*
9. Person Re-Identification using Kernel-Based Metric Learning Methods, *Fei Xiong, Mengran Gou, Octavia Camps, Mario Sznäier, Northeastern University*
10. Saliency in Crowd, *Ming Jiang, Juan Xu, Qi Zhao, National University of Singapore*
11. Webpage Saliency, *Chengyao Shen, Qi Zhao, National University of Singapore*
12. Deblurring Face Images with Exemplars, *Jinshan Pan, DLUT; Zhe Hu, UC Merced; Zhixun Su, Dalian University of Technology; Ming-Hsuan Yang, UC Merced*
13. Sparse Spatio-spectral Representation for Hyperspectral Image Super-Resolution, *Navdeep Akhtar, Faisal Shafait, Ajmal Mian, The University of Western Australia*
14. Hybrid Image Deblurring by Fusing Edge and Power Spectrum Information, *Tao Yue, Tsinghua University; Sunghyun Cho, Jue Wang, Adobe Research; Qionghai Dai, Tsinghua University*
15. Affine Subspace Representation for Feature Description, *Zhenhua Wang, Bin Fan, Fuchao Wu, National Laboratory of Pattern Recognition, Chinese Academy of Science*

16. A Generative Model for the Joint Registration of Multiple Point Sets, *Georgios Evangelidis, Dionyssos Kounades-Bastian, Radu Horaud, INRIA; Emmanouil Psarakis, University of Patras*
17. Change Detection in the Presence of Motion Blur and Rolling Shutter Effect, *Vijay Rengarajan Angarai Pichaikuppan, Rajagopalan Ambasamudram Narayanan, Aravind Rangarajan, IIT Madras*
18. An Analysis of Errors in Graph-Based Keypoint Matching and Proposed Solutions, *Toby Collins, ALCoV, ISIT; Pablo Mesejo, University of Clermont; Adrien Bartoli, Universite d'Auvergne*
19. OpenDR: An Approximate Differentiable Renderer *Matthew Loper, Michael Black, Max Planck Institute for Intelligent Systems*
20. A Superior Tracking Approach: Building a Strong Tracker through Fusion, *Christian Bailer, Alain Pagani, Didier Stricker, DFKI*
21. Training-Based Spectral Reconstruction from a Single RGB Image, *Rang Nguyen, Dilip Prasad, Michael Brown, National university of Singapore*
22. On Shape and Material Recovery from Motion, *Manmohan Chandraker, NEC Labs America*
23. Intrinsic Image Decomposition using Structure-Texture Separation and Surface Normals, *Junho Jeon, POSTECH; Sunghyun Cho, Adobe Research; Xin Tong, Microsoft Asia; Seungyong Lee, POSTECH*
24. Multi-level Adaptive Active Learning for Scene Classification, *Xin Li, Yuhong Guo, Temple University*
25. Graph Cuts for Supervised Binary Coding, *Tiezheng Ge, The University of Science and Technology of China; Kaiming He, Jian Sun, Microsoft Research Asia*
26. Planar Structure Matching Under Projective Uncertainty for Geolocation, *Ang Li, Vlad Morariu, Larry S. Davis, University of Maryland*
27. Active Deformable Part Models Inference, *Menglong Zhu, Nikolay Atanasov, George Pappas, Kostas Daniilidis, University of Pennsylvania*
28. Simultaneous Detection and Segmentation, *Bharath Hariharan, Pablo Arbeláez, Ross Girshick, Jitendra Malik, UC Berkeley*
29. Learning Graphs to Model Visual Objects Across Different Depictive Styles, *Qi Wu, Hongping Cai, Peter Hall, University of Bath*
30. Analyzing The Performance of Multi Layer Neural Networks for Object Recognition, *Pulkit Agrawal, Ross Girshick, Jitendra Malik, UC Berkeley*
31. Learning Rich Features from RGB-D Images for Object Detection and Segmentation, *Saurabh Gupta, Ross Girshick, Pablo Arbelaez, Jitendra Malik, UC Berkeley*
32. Scene Classification via Hypergraph-Based Semantic Attributes Subnetworks Identification, *Sun-Wook Choi, Chong Ho Lee, In Kyu Park, Inha University*
33. OTC: A Novel Local Descriptor for Scene Classification, *Ran Margolin, Lih Zelnik-Manor, Ayelet Tal, Technion*
34. Multi-scale Orderless Pooling of Deep Convolutional Activation Features, *Yunchao Gong, UNC Chapel Hill; Liwei Wang, Ruiqi Guo, Svetlana Lazebnik, UIUC*
35. Expanding the Family of Grassmannian Kernels: An Embedding Perspective, *Mehrtash Harandi, Mathieu Salzmann, Sadeep Jayasumana, Richard Hartley, ANU/NICTA; Hongdong Li, ANU*
36. Image Tag Completion by Noisy Matrix Recovery, *Zheyun Feng, Michigan State University; Songhe Feng, Beijing Jiaotong University; Rong Jin, Anil K. Jain, Michigan State University*
37. ConceptMap: Mining Noisy Web Data for Concept Learning, *Eren Golge, Pinar Duygulu, Bilkent University*
38. Shrinkage Expansion Adaptive Metric Learning, *Qilong Wang, Heilongjiang University; Wangmeng Zuo, Harbin Institute of Technology; Lei Zhang, The Hong Kong Polytechnic University; Peihua Li, Dalian University of Technology*
39. Salient Montages from Unconstrained Videos, *Min Sun, Ali Farhadi, Ben Taskar, University of Washington; Steve Seitz, Washington/Google*
40. Action-Reaction: Forecasting the Dynamics of Human Interaction, *De-An Huang, Kris Kitani, Carnegie Mellon University*
41. Creating Summaries from User Videos, *Michael Gygli, Helmut Grabner, Hayko Riemenschneider, Luc Van Gool, ETH Zurich*

- 42. Spatiotemporal Background Subtraction Using Minimum Spanning Tree and Optical Flow, *Mingliang Chen, Qingxiong Yang, Qing Li, City University of Hong Kong; Gang Wang, Nanyang Technological University; Ming-Hsuan Yang, UC Merced*
- 43. Robust Foreground Detection Using Smoothness and Arbitrariness Constraints, *Xiaojie Guo, SKLOIS, IIE CAS; Xinggang Wang, Huazhong University of Science and Technology; Liang Yang, Xiaochun Cao, SKLOIS, IIE, CAS; Yi Ma, ShanghaiTech University*
- 44. Video Object Co-Segmentation by Regulated Maximum Weight Cliques, *Dong Zhang, University of Central Florida; Omar Javed, SRI International; Mubarak Shah, University of Central Florida*
- 45-52 Papers from Oral Session 4A and 4B

1600-1645 Coffee break

1645-1800 Oral Session 4B: Motion and 3D Scene Analysis (Kongresssaal)

Chairs: Shai Avidan (*Tel-Aviv University*)

Raquel Urtasun (*University of Toronto*)

Format (15 min. for presentation + 3 min. for questions)

- 1. Dense Semi-rigid Scene Flow Estimation from RGBD Images, *Julian Quiroga, INRIA; Thomas Brox, Uni Freiburg; Frédéric Devernay, James Crowley, INRIA*
- 2. Video Pop-up: Monocular 3D Reconstruction of Dynamic Scenes, *Chris Russell, Rui Yu, Lourdes Agapito, UC London*
- 3. Joint Object Class Sequencing and Trajectory Triangulation (JOST), *Enliang Zheng, Ke Wang, Enrique Dunn, Jan-Michael Frahm, UNC-Chapel Hill*
- 4. Scene Chronology, *Kevin Matzen, Noah Snavely, Cornell University*

(These papers were also presented in Poster Session 4B)

1800-1815 Closing

Friday, September 12

0730–1830 Registration (Main Hall, ETH)

W18 TASK-CV Transferring and Adapting Source Knowledge in Computer Vision

Organizers: Antonio M. Lopez
 Kate Saenko
 Francesco Orabona
 José Antonio Rodríguez
 David Vázquez
 Sebastian Ramos
 Jiaolong Xu

Location: D5.2

Schedule: Full Day

0830 **Welcome and Agenda Presentation**

0840 **Invited Talk 1:** Overcoming dataset bias: how far are we from the solution, Tinne Tuytelaars (*Katholieke Universiteit Leuven*)

0925 **Invited Talk 2:** Learning with a time-evolving data distribution, Christoph Lampert (*Institute of Science and Technology, Austria*)

1010 **Oral 1:** Domain adaptation with a domain specific class means classifier, Gabriela Csurka, Boris Chidlovskii, Florent Perronnin (*Xerox Research Center Europe*)

1030–1115 Coffee Break / Posters will be hanged during this break

1115 **Oral 2:** Nonlinear cross-view sample enrichment for action recognition, Ling Wang, Hichem Sahbi (*Institut Mines-Télécom; Télécom ParisTech; CNRS LTCI*)

1135 **Oral 3:** Automatic expansion of a food image dataset leveraging existing categories with domain adaptation, Yoshiyuki Kawano, Keiji Yanai (*The University of Electro-Communications, Japan*)

1155 **Short Oral Presentation of Workshop Posters and Invited Posters (1155–1230):**

1. Multi-task multi-sample learning, Yusuf Aytar, Andrew Zisserman (*University of Oxford*)
2. Multi-modal distance metric learning: a Bayesian non-parametric approach, Behnam Babagholami-Mohamadabadi, Seyed Mahdi Roostaiyan, Ali Zarghami, Mahdiah Soleymani Baghsha (*Sharif University of Technology*)
3. Structure-aware domain adaptation of deformable part-based models, Jiaolong Xu, Sebastian Ramos (*Computer Vision Center & Universitat Autònoma de Barcelona*) David Vázquez (*Computer Vision Center*), Antonio M. López (*Computer Vision Center & Universitat Autònoma de Barcelona*)
4. Incremental domain adaptation of deformable part-based models, Jiaolong Xu, Sebastian Ramos (*Computer Vision Center & Universitat Autònoma de Barcelona*) David Vázquez (*Computer Vision Center*), Antonio M. López (*Computer Vision Center & Universitat Autònoma de Barcelona*)
5. From virtual to reality: fast adaptation of virtual object detectors to real domains, Baochen Sun (*UMass Lowell*) Kate Saenko (*UMass Lowell*)
6. Domain-adaptive discriminative one-shot learning of gestures, Tomas Pfister (*University of Oxford*) James Charles (*University of Leeds*), Andrew Zisserman (*University of Oxford*)
7. Statistical and spatial consensus collection for detector adaptation, Enver Sangineto (*DISI, University of Trento*)

1230 Lunch Break

1400 **Invited Talk 3:** Recent theoretical and algorithmic advances in domain adaptation, Mehryar Mohri (*Courant Institute of Mathematical Sciences*)

1445 **Poster Session** / Poster authors must be in their poster location

1545 Coffee Break

- 1600 Oral 4: A testbed for cross-dataset analysis, *Tatiana Tommasi, Tinne Tuytelaars (Katholieke Universiteit Leuven)*
- 1620 **Invited Talk 4:** Domain adaptation and deep learning for large scale object recognition and detection, Trevor Darrell (*University of California, Berkeley*)
- 1705 **Invited Talk 5:** Kernel methods for domain adaptation, Boqing Gong (*University of Southern California*)
- 1750 **Best paper announcement and Workshop closing**

W19 Visual Surveillance and Re-identification

Organizers: Shaogang Gong
Steve Maybank
James Orwell
Marco Cristani
Kaigi Huang
Shuicheng Yan

Location: E5

Schedule: Full Day

- 0820 Opening Remarks
- 0830 **Invited Talk 1:** What is happening where and when in video, Prof. Cees Snoek (*University of Amsterdam*)
- Oral presentations:
- 0915 Learning Action Primitives for Multi-Level Video Event Understanding, *T.Lan, L. Chen, Z. Deng, G. T. Zhou and G. Mori*
- 0940 Learning Skeleton Stream Patterns with Slow Feature Analysis for Action Recognition, *Y. Shan, Z. Zhang, K. Huang*

1005-1020 Coffee Break

Oral presentations:

- 1020 A Novel Visual Word Co-occurrence Model for Person Re-identification, *Z. Zhang, Y. Chen, V. Saligrama*

- 1045 Joint Learning for Attribute-Consistent Person Re-Identification, *S. Khamis, C.H. Kuo, V.K. Singh, V.D. Shet and L.S. Davis*
- 1110 Person Re-Identification by Discriminatively Selecting Parts and Features, *A. Bhuiyan, A. Perina and V. Murino*
- 1135 Calibration Methodology for Distant Surveillance Cameras, *P. Gemeiner, B. Micusik, R. Pflugfelder*
- 1200 Improving Global Multi-target Tracking with Local Updates, *A. Milan, R. Gade, A. Dick, T.B. Moeslund, I. Reid*

1225 Lunch Break

- 1400 **Invited Talk:** Prof. Ming-Hsuan Yang (*University of California at Merced*)

Oral presentations:

- 1445 Saliency Weighted Features for Person Re-Identification, *N. Martinel, C. Micheloni and G.L. Foresti*
- 1510 Regularized Bayesian Metric Learning for Person Re-Identification, *V.E. Liong, J. Lu, Y. Ge*
- 1535 Investigating Open-World Person Re-Identification Using a Drone, *R. Layne, T.M. Hospedales, S. Gong*

1600 Coffee Break

- 1615 The HDA+ Data Set for Research on Fully Automated Re-Identification Systems, *D. Figueira, M. Taiana, A. Nambiar, J. Nascimento and A. Bernardino*

MCT Challenge presentation (1640-1710)

- 1640 Summary
- 1650 USC Vision
- 1710 Concluding Remarks & Awards

W20 Color and Photometry in Computer Vision

Organizers: Theo Gevers
Arjan Gijsenij
Todd Zickler
Jose M. Alvarez

Location: D7.1

Schedule: Afternoon

1330 Welcome

1335 **Keynote Talk:** Kyoung Mu Lee (*Dept. of ECE, Seoul National University*)

1420 A Variational Framework for Single Image Dehazing, Adrian Galdran (*Tecnalia Research & Innovation*), Javier Vazquez-Corral (*Universitat Pompeu Fabra*), David Pardo (*Universidad del País Vasco*), Marcelo Bertalmio (*Universitat Pompeu Fabra*)

1440 Color Barcode Decoding in the Presence of Specular Reflection, Homayoun Bagherinia (*USCS*), Roberto Manduchi (*UC Santa Cruz, USA*)

1500 Photometric Compensation to Dynamic Surfaces in a Projector-Camera System, Panagiotis-Alexandro Bokaris, Michele Gouffes, Christian Jacquemin (*University of Paris-Sud*), Jean-Marc Chomaz (*CNRS-Ecole Polytechnique*)

1520 Coffee Break

1600 **Keynote Talk:** Michael Goesele (*Dept. Computer Science, TU Darmstadt*)

1645 A Unified Model for Image Colorization, Fabien Pierre (*IMB / LaBRI*), Jean-François Aujol (*IMB - Bordeaux University*) Aurélie Bugeau, Vinh-Thong Ta (*LaBRI-Bordeaux University*)

1705 Single Image Shadow Removal via Neighbor Based Region Relighting, Tomas F Yago Vicente, Dimitris Samaras (*Stony Brook University*)

1725 Material Recognition for Efficient Acquisition of Geometry and Reflectance, Michael Weinmann, Reinhard Klein (*University of Bonn*)

1745 Shape in a Box, Graham Finlayson, Christopher Powell (*University of East Anglia*)

W21 Storytelling with Images and Videos

Organizers: Gunhee Kim
Leonid Sigal
Kristen Grauman
Tamara Berg

Location: D1.1

Schedule: Full day

0900 Introduction talk

0910 **Invited Talk 1:** TBA, Abhinav Gupta (*CMU*)

0945 **Invited Talk 2:** TBA, Mirella Lapata (*University of Edinburgh*)

1020 Coffee Break

1050 **Invited Talk 3:** TBA, Shih-Fu Chang (*Columbia*)

1125 **Invited Talk 4:** TBA, Larry Zitnick (*Microsoft Research*)

1200 Lunch Break

1400 **Invited Talk 5:** TBA, Mark Riedl (*Georgia Tech*)

1440 **Invited Talk 6:** TBA, Ira Kemelmacher-Shlizerman (*UW*)

1515 Coffee Break

1545 Spotlights for papers

[Accepted papers](#)

1. Object Discovery for Egocentric Videos Based on Convolutional Neural Network Features. Marc Bolanos, Maite Garolera, and Petia Radeva
2. Unsupervised Summarization from Simultaneous Egocentric Videos, Carolina Galleguillos and Ana Murillo.

- 3. Storytelling Patches: Predicting Tourist Spots in a City.
Aayush Bansal and Krishna Kumar Singh
[Invited paper](#)
- 1. Learning High-level Judgments of Urban Perception,
Vicente Ordonez and Tamara Berg (UNC Chapel Hill)
- 1645 **Invited Talk 7:** Youtube2Text: Large-Scale Natural
Language Generation for Arbitrary Youtube Video
Clips, *Kate Saenko (UMass Lowell)*
- 1745 Closing

W22 Assistive Computer Vision and Robotics

Organizers: Giovanni Maria Farinella
Marco Leo
Gerard Medioni
Mohan Triverdi

Location: D7.2

Schedule: Full Day

- 0800 Opening Remarks
- 0815 **Invited Talk:** prof. Roberto Manduchi (*University of California*)
- 0900 Oral Session 1: Applications of Assistive Computer Vision
 - 1. "Way to Go!" Detecting Open Areas Ahead of a Walking Person, *Boris Schaverte, Daniel Koester, Rainer Stiefelhofen, KIT*
 - 2. Road-Crossing Assistance by Traffic Flow Analysis, *Adi Perry, Nahum Kiryati, Tel Aviv University*
 - 3. Personal shopping assistance and navigator system for visually impaired people, *Paul Chippendale, Fondazione Bruno Kessler, Trento, Italy; Valeria Tomaselli, Viviana D'Alto, Giulio Urlini, STMicroelectronics; Carla Maria Modena, Stefano Messelodi, Fondazione Bruno Kessler, Trento, Italy; Mauro Strano, STMicroelectronics; Kias*

Hermansson, Günter Alce, Sony Mobile Communications, Lund, Sweden; Mathieu Razafimahazo, Thibaud Michel, INRIA, Grenoble, France; Giovanni Farinella, University of Catania

0945 Spotlights for Poster Session I

1000 Poster Session 1: Systems and Devices

- 1. Vision Correcting Displays Based on Inverse Blurring and Aberration Compensation, *Brian Barsky, Fu-Chung Huang, University of California, Berkeley; Douglas Lanman, Gordon Wetzstein, Ramesh Raskar, MIT*
- 2. 3D glasses to improve autonomous mobility of people visually impaired, *Stefano Mattoccia, Paolo Macri, University of Bologna*
- 3. A Robust Vision-Based Framework for Screen Readers *Michael Cormier, Robin Cohen, Richard Mann, Kamal Rahim, Donglin Wang, University of Waterloo*
- 4. Calculating Reachable Workspace Volume for use in Quantitative Medicine, *Robert Matthew, Gregorij Kurillo, UC Berkeley; Jay Han, UC Davis; Ruzena Bajcsy, UC Berkeley*
- 5. A Benchmark Dataset to Study the Representation of Food Images, *Giovanni Farinella, Dario Allegra, Filippo Stanco, University of Catania*
- 6. Mobile Panoramic Vision for Blind Navigation via Indexing and Localization, *Feng Hu, Jianting Zhang, Zhigang Zhu, City College of New York*
- 7. The Design and Preliminary Evaluation of a Finger-Mounted Camera and Feedback System to Enable Reading of Printed Text for the Blind, *Lee Stearns, Ruofei Du, Uran Oh, Yumeng Wang, Rama Chellappa, Leah Findlater, Jon Froehlich, University of Maryland*
- 8. High Dynamic Range Imaging System for the Visually Impaired, *Ahmed Maalej, Ecole des Mines Ales; Guillaume Tatur, Marie-Celine Lorenzini, CHU Nimes; Gerard Dupeyron, CHU Nimes + ARAMAV; Michel Dumas, ARAMAV; Isabelle Marc, Ecole des mines d'Alès*
- 9. A System for Assisting the the Visually Impaired in Localization and Grasp of Desired Objects, *Kaveri*

Thakoor, Nii Mante, Christian Siagian, James Weiland, Laurent Itti, Gerard Medioni, University of Southern California

10. Descending stair detection with low-power sensors, *Severine Cloix, Centre Suisse d'Electronique et de Microtechnique SA, Switzerland; Guido Bologna, Viviana Weiss, Thierry Pun, University of Geneva Switzerland; David Hasler, Centre Suisse d'Electronique et de Microtechnique SA, Switzerland*
11. Model-Based Motion Tracking of Infants *Mikkel Olsen, Technical University of DK; Anna Herskind, Jens Nielsen, Rasmus Paulsen*
12. A Fast and Flexible Computer Vision System for Implanted Visual Prostheses, *Wai Ho Li, Monash Vision Group*
13. An Intelligent Wheelchair to Enable Safe Mobility of the Disabled People with Motor and Cognitive Impairments, *Myeongjin Lee, Yeounggwang Ji, Eun Yi Kim, Konkuk University*

1030 Coffee Break

1145 Oral Session 2: Applications of Assistive Robotics

1. Visual interaction including biometrics information for a socially assistive robotics platform, *Marco Del Coco, CNR IRO; Dario Cazzato, Institute of Optics; Pierluigi Carcagni, CNR IRO; Marco Leo, National Research Council of Italy; Cosimo Distanto, CNR IRO*
2. Vision-based SLAM and moving objects tracking for the perceptual support of a smart walker platform, *Paschalis Panteleris, FORTH; Antonis Argyros, FORTH*
2. Real-time Emotion Recognition from Natural Bodily Expressions in Child-robot Interaction, *Weiye Wang, Georgios Athanasopoulos, Georgios Patsis, Valentin Enescu, Hichem Sahli, Vrije Universiteit Brussel*

1230 Lunch Break

1400 **Invited Talk:** dr. Yonatan Wexler (*Senior VP R&D OrCam*)

1445 Oral Session 3: Algorithms, Systems and Sensors

1. Robust Eye Blink Detection using Statistical Variance of Local Moves within the Eye Region, *Tomas Drutarovsky, Andrej Fogelton, Slovak University of Technology*
2. Detection and Modelling of Staircases Using a Wearable Depth Sensor, *Alejandro Pérez Yus, Universidad de Zaragoza; Gonzalo López Nicolás, Jose Jesús Guerrero Campo*
3. A new application of smart walker for quantitative analysis of human walking, *Ting Wang, INRIA Sophia Antipolis, France; Claire Dune, Université de Toulon; Jean-Pierre Merlet, INRIA Sophia Antipolis, France; Philippe Gorce, University of Toulon; Guillaume Sacco, Philippe Robert, Jean-Michel Turpin, Bernard Teboul, Audrey Marteu, Olivier Guerin,*

1530 Spotlights for Poster Session 2

1545 Coffee Break

1615 Poster Session 2: Algorithms and Techniques

1. A Visual SLAM system with mobile robot supporting Localization services to visually impaired people, *Nguyen Quoc Hung, MICA*
2. Scene-Dependent Intention Recognition for Task Communication with Reduced Human-Robot Interaction, *Kester Duncan, Sudeep Sarkar, Redwan Alqasemi, Rajiv Dubey, University of South Florida*
3. Egocentric Object Recognition leveraging the 3D Shape of the Grasping Hand, *Yizhou Lin, Gang Hua, Philippos Mordohai, Stevens Institute of Technology*
4. Face Recognition for the Visually Impaired Based on 3D Registration Using a RGB-D Sensor, *Wei Li, City College of New York; Xudong Li, Beihang University; Martin Goldberg, Zhigang Zhu, City College of New York*
5. Learning Pain from Emotion: Transferred HoT Data Representation for Pain Intensity Estimation, *Corneliu Florea, Laura Florea, Constantin Vertan, University Politehnica of Bucharest*
6. Neural Network Fusion of Color, Depth and Location for Object Instance Recognition on a Mobile Robot,

Louis-Charles Caron, David Filliat, Alexander Geppert, ENSTA ParisTech

7. An Experimental Analysis of Saliency Detection with respect to Three Saliency Levels, *Antonino Furnari, Università degli Studi di Catania; Giovanni Farinella, Sebastiano Battiato, University of Catania*
8. Recognizing Daily Activities in Realistic Environments through Depth-based User Tracking and Hidden Conditional Random Fields for MCI/AD support, *Dimitris Giakoumis, CERTH-ITI; Georgios Stavropoulos, CERTH-ITI / UPAT; Dimitrios Kikidis, Manolis Vasileiadis, Konstantinos Votis, Dimitrios Tzovaras, CERTH-ITI*
9. 3D layout propagation to improve object recognition in egocentric videos, *Alejandro Rituerto, Ana Murillo, Universidad de Zaragoza; Jose Jesús Guerrero Campo,*
10. Snippet Histograms for Assistive Technologies, *Ahmet Iscen, Pinar Duygulu, Bilkent University; Alex Hauptmann, Carnegie Mellon University*
11. Combining Semi-Autonomous Navigation with Manned Behaviour in a Cooperative Driving System for Mobile Robotic Telepresence, *Andrey Kiselev, Annica Kristoffersson, Amy Loutfi, Örebro University*
12. Associating Locations Between Indoor Journeys from Wearable Cameras, *Jose Rivera-Rubio, Imperial College London; Ioannis Alexiou, Queen Mary University of London; Anil Bharath, Imperial College of London*
13. Smart camera reconfiguration in assisted home environment for elderly care, *Krishna Konda, Andrea Rosani, Nicola Conci, Francesco De Natale, University of Trento*

1730 Oral Session4: Wereable Devices and Egocentric Vision

1. Multi-User Ego-centric Online System for Unsupervised Assistance on Object Usage, *Dima Damen, Osian Haines, Teesid Leelasawassuk, Andrew Calway, Walterio Mayol-Cuevas, University of Bristol*
2. Wearable RGBD indoor navigation system for the blind, *Young Hoon Lee, Gerard Medioni, Univ. of Southern California*

3. Telepresence from a Guide's Shoulder, *Don Kimber, Patrick Proppe, Sven Kratz, Jim Vaughan, Bee Liew, FXPAL; Don Severns,*

1815 Closing Remarks

W23 Computer Vision Problems in Plant Phenotyping (CVPPP)

Organizers: Hanno Scharf
Sotirios Tsafaris

Location: E1.1

Schedule: Half Day - Morning

0830 Setup

0900 Welcoming message and short introduction to plant phenotyping

0910 Results from the Leaf Segmentation Challenge

1. 3-D Histogram-Based Segmentation and Leaf Detection for Rosette Plants, *Jean-Michel Pape, and Christian Klukas (Leibniz Institute of Plant Genetics and Crop Plant Research)*

0930 Root Imaging

1. Representing Roots on the Basis of Reeb Graphs in Plant Phenotyping, *Ines Janusch, Walter Kropatsch, (Vienna University of Technology) and Wolfgang Busch, Daniela Ristova (Gregor Mendel Institute of Molecular Plant Biology)*
2. Visual Object Tracking for the Extraction of Multiple Interacting Plant Root Systems, *Stefan Mairhofer, Craig Sturrock, Malcolm Bennett, Sacha Mooney, Tony Pridmore (University of Nottingham)*

1010 Poster pitch (3min oral talks for each poster)

1030 **Coffee Break** (and Poster Session)

1030 Poster Session

1. A Crop/Weed Field Image Dataset for the Evaluation of Computer Vision Based Precision Agriculture Tasks, *Sebastian Haug (Robert Bosch GmbH), Jörn Ostermann (TNT, Leibniz University Hannover)*
2. Generation and application of hyperspectral 3D plant models, *Jan Behmann, Anne-Katrin Mahlein, Stefan Paulus, Erich-Christian Oerke, Heiner Kuhlmann, Lutz Plümer (University Bonn)*
3. 3D multimodal simulation of image acquisition by X-Ray and MRI for validation of seedling measurements

with segmentation algorithms, *Landry Benoit, Georges Semaan, Etienne Belin and François Chapeau-Blondeau (Université d'Angers), Didier Demilly, Snès-Geves, David Rousseau (University of Lyon, France)*

4. Distortion Correction in 3D-Modeling of Roots for Plant Phenotyping, *Tushar Kanta Das Nakini, Guilherme DeSouza (University of Missouri)*
5. Surface Reconstruction of Plant Shoots from Multiple Views, *Michael Pound, Andrew French, Erik Murchie, Tony Pridmore (University of Nottingham)*
6. High-Resolution Plant Phenotypes from Multi-View Stereo Reconstruction, *Maria Klodt, Daniel Cremers (Technical University Munich)*
7. Texture-Based Leaf Identification, *Milan Šulc, Jiří Matas (Czech Technical University in Prague)*
8. Hybrid Consensus Learning for Legume Species and Cultivars Classification, *Monica Larese (CIFASIS-CONICET), Pablo Granitto (CIFASIS, Argentina)*

1110 Computer Vision Solutions (Shoot / 3D from images)

1. A model-based approach to recovering the structure of a plant from images, *Ben Ward, John Bastian, Anton Van Den Hengel, Daniel Pooley (University of Adelaide), Rajendra Bari (Bayer CropScience), Bettina Berger (University of Adelaide), Mark Tester (King Abdullah University of Science and Technology)*
2. Image-based Phenotyping of the Mature Arabidopsis Shoot System, *Marco Augustin and Yll Haxhimusa (Vienna University of Technology), Wolfgang Busch (Gregor Mendel Institute of Molecular Plant Biology), Walter Kropatsch (Vienna University of Technology)*
3. 3D Plant Modeling: Localization, Mapping and Segmentation for Plant Phenotyping Using a Single Hand-held Camera, *Thiago Santos, Luciano Koenigkan, Jayme Barbedo, Gustavo Rodrigues (Embrapa)*

1210 Closing Remarks

1220 Adjourn

W24 Human Behavior Understanding

Organizers: Albert Ali Salah
 Louis-Philippe Morency
 Rita Cucchiara

Location: E1.2

Schedule: Full Day

0900 Welcome

0910 **Invited Talk:** Fei-Fei Li (*Stanford University*)

0940 **Invited Talk:** From groups to crowds: a social signal processing perspective, Marco Cristani (*University of Verona*)

1010 Learning Sparse Prototypes via Ensemble Coding Mechanisms for Crowd Perception, Yanhao Zhang, Shengping Zhang, Qingming Huang and Thomas Serre

1030 Coffee Break

1100 **Invited Talk:** David Forsyth (*University of Illinois at Urbana-Champaign*)

1130 **Invited Talk:** Social Interactions from an Egocentric Perspective, Jim Rehg (*Georgia Institute of Technology*)

1200 Dyadic interaction detection from pose and flow, Coert van Gemeren, Robby Tan, Ronald Poppe and Remco Veltkamp

1220 Lunch Break

1340 **Invited Talk:** Human Behavior Understanding in the Wild, Nicu Sebe (*University of Trento*)

1410 **Invited Talk:** Shai Avidan (*Tel-Aviv University*)

1440 Coupling Fall Detection and Tracking in Omnidirectional Cameras, Baris Evrim Demiroz, Albert Salah and Lale Akarun

1500 Coffee Break

1530 **Invited Talk:** Daniel Gatica-Perez (*Ildiap Research Institute*)

1600 **Invited Talk:** Social Signal Processing: Understanding Nonverbal Behaviour in Social Interactions, Alessandro Vinciarelli (*University of Glasgow*)

1630 How do you like your virtual agent? Human-agent interaction experience through nonverbal features and personality traits, Aleksandra Cerekovic, Oya Aran and Daniel Gatica-Perez

1650 Poster Presentations:

1. Human Involvement in E – Coaching: Effects on Effectiveness, Perceived Influence and Trust, Bart Kamphorst, Michel Klein and Arlette van Wissen
2. Just The Way You Chat: Linking Personality, Style and Recognizability in Chats, Giorgio Roffo, Cinzia Giorgetta, Roberta Ferrario and Marco Cristani
3. A New Multi – Modal Dataset for Human Affect Analysis, Haolin Wei, David Monaghan and Noel E. O Connor
4. The Role of Color and Contrast in Facial Age Estimation, Hamdi Dibeklioglu, Theo Gevers, Marcel Lucassen and Albert Salah
5. Dominant motion analysis in regular and irregular crowd scenes, Habib Ullah, Mohib Ullah and Nicola Conci

W25 ImageNet Large Scale Visual Recognition Challenge (ILSVRC)

Organizers: Olga Russakovsky
 Sean Ma
 Jon Krause
 Jia Deng
 Alex Berg
 Fei-Fei Li

Location: E7

Description: The purpose of the workshop is to present the methods and results of the ImageNet Large Scale Visual Recognition Challenge (ILSVRC) 2014. Challenge participants with the most successful and innovative entries are invited to present. The ILSVRC is sponsored in part by Google and Facebook; some computational resources are provided to participants by NVIDIA.

Schedule: Full Day

0845 Detection competition: Introduction, results and invited talks

1030 Coffee Break

1100 Classification & localization competition: introduction, results and invited talks

1230 Lunch Break

1400 Invited talks and discussion

1500 Poster and demo session with coffee break

W26 Non-Rigid Shape Analysis and Deformable Image Alignment (NORDIA)

Organizers: Alex Bronstein
 Umberto Castellani
 Maks Ovsjanikov

Location: D1.2

Schedule: Full day

0850 **Opening**

0900 **Keynote Talk:** Interactive Mesh Deformation with Reality-Inspired Constraints, Olga Sorkine (*ETH Zurich*)

S1: Oral Session 1: *Shape Analysis and matching (1000-1220)*

1000 Characterization of Partial Intrinsic Symmetries, *Aurela Shehu, Alan Brunton, Stefanie Wuhrer, Michael Wand*

1025 Coffee Break

S1: Oral Session 1 (continued): *Shape Analysis and matching (1000-1220)*

1100 Anisotropic Laplace-Beltrami Operator for Shape Analysis, *Mathieu Andreux, Emanuele Rodolà, Mathieu Aubry, Daniel Cremers*

1125 Supervised Descriptor Learning for Non-Rigid Shape Matching, *Etienne Corman, Antonin Chambolle, Maks Ovsjanikov*

1150 A bioinformatics approach to 3D shape matching, *Manuele Bicego, Stefano Danese, Simone Melzi, Umberto Castellani*

1215 Lunch Break

1400 **Keynote Talk:** Novel Algorithms for Non-Rigid 3D Shape Analysis, Daniel Cremers (*TU Munich*)

S2: Oral Session 2: *Shape Segmentation, registration and classification (1500-1705)*

1500 A Grassmannian Framework for Face Recognition of 3D Dynamic Sequences with Challenging Conditions, *Taleb Alashkar, Boulbaba Ben Amor, Mohamed Daoudi, Stefano Berretti*

1525 Coffee Break

S2: Oral Session 2 (continued): *Shape Segmentation, registration and classification (1500-1705)*

1600 A Novel Graph Embedding Framework for 3D Object Recognition, *Mario Manzo, Simone Pellino, Alfredo Petrosino, Alessandro Rozza*

1625 Multiple Alignment of Spatiotemporal Deformable Objects for the Average-Organ Computation, *Atsushi Imiya, Shun Inagaki, Hayato Itoh*

1640 Refining Mitochondria Segmentation in EM Imagery with Active Surfaces, *Anne Jorstad, Pascal Fua*

1705 Closing

W27 Video Segmentation

Organizers: Fabio Galasso
Thomas Brox
Fuxin Li
James M. Rehg
Bernt Schiele

Location: E3

Schedule: Full day

0900 Welcome and opening

0910 **Invited Talk:** Efficient hierarchical graph-based video segmentation, *Irfan Essa (Georgia Institute of Technology), Matthias Grundmann (Google Research)*

0945 Video Object Segmentation by Non-Local Consensus Voting, *Alon Faktor, Michal Irani (Weizmann Institute of Science)*

1000 **Invited Talk:** Parametric Figure-Ground Proposals and Second Order Pooling Methods for Semantic Segmentation: RGB, RGB-D and Video, *Cristian Sminchisescu (Lund University)*

1035 Coffee Break and Posters

1110 **Invited Talk:** Interactive segmentation approaches for video production, *Jue Wang (Adobe Systems)*

1145 A video representation using temporal superpixels, *J. Chang, D. Wei, and J. W. Fisher (MIT)*

1200 Video segmentation by tracing discontinuities in a trajectory embedding, *Katerina Fragkiadaki (University of California, Berkeley) and Jianbo Shi (University of Pennsylvania)*

1215 Progressive multigrid eigensolvers for multiscale spectral segmentation, *Michael Maire (California Institute of Technology/TTI Chicago) and Stella X. Yu (University of California, Berkeley)*

1230 Lunch Break and Posters

1400 **Invited Talk:** Video object segmentation helps learning object class models, *Vittorio Ferrari (University of Edinburgh)*

1435 Temporally consistent superpixels, *M. Reso, J. Jachalsky, R. Rosenhahn, J. Ostermann (Leibniz Universität Hannover)*

1450 Online video seeds for temporal window objectness, *M. Van Den Bergh, G. Roig, X. Boix, S. Manen, and L. V. Gool (ETH Zurich)*

1505 Motion Words for Videos, *E. Taralova, F. de la Torre, M. Hebert (Carnegie Mellon University)*

1520 Coffee Break and Posters

1555 **Invited Talk:** Semantic (less) Motion and Video Segmentation, *René Vidal (Johns Hopkins University)*

1630 Panel Discussions

W28 Parts and attributes

Organizers: Rogerio S. Feris
 Christoph H. Lampert
 Devi Parikh

Location: D3.2

Schedule: Full day

0840 Welcome

0845 **Invited Talk:** Serge Belongie (*Cornell Tech*)

0920 **Invited Talk:** Ali Farhadi (*University of Washington*)

0955 **Invited Talk:** Raquel Urtasun (*University of Toronto*)

1030 Coffee Break

1100 **Invited Talk:** Gregory Murphy (*New York University*)

1135 **Invited Talk:** Adriana Kovashka (*Univ. of Pittsburgh*)

1210 Lunch Break

1400 **Invited Talk:** Niloy Mitra (*University College London*)

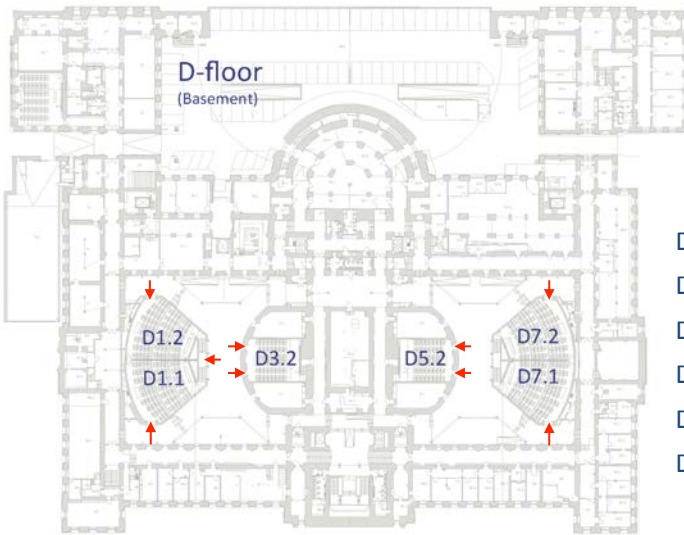
1435 **Invited Talk:** Peter Gehler (*Max Planck Institute*)

1510 Poster Session (and Coffee Break)

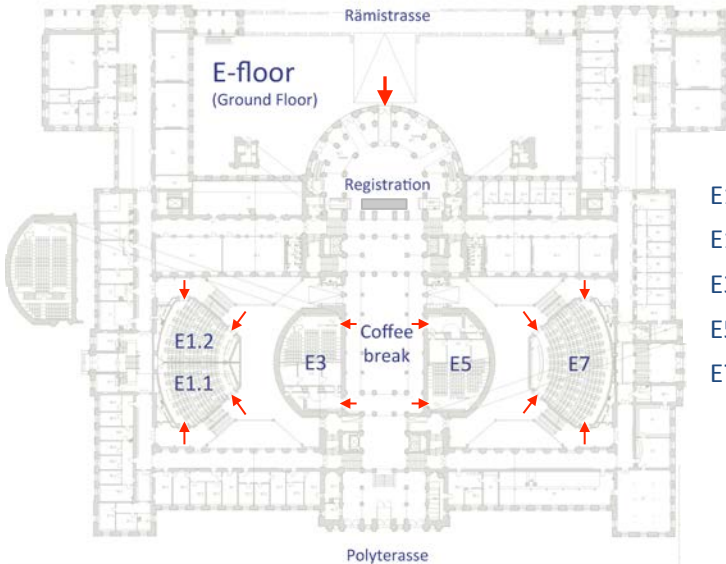
1. Optimizing Facial Landmark Detection by Facial Attribute Learning, Zhanpeng Zhang, Ping Luo, Chen Change Loy, and Xiaoou Tang
2. Transductive Multi-class and Multi-label Zero-shot Learning, Yanwei Fu, Yongxin Yang, Timothy M. Hospedales, Tao Xiang, Shaogang Gong
3. Attributes make sense on segmented objects, Zhenyang Li, Efstratios Gavves, Thomas Mensink, and Cees G. M. Snoek
4. Discovering Shades of Attribute Meaning with the Crowd, Adriana Kovashka and Kristen Grauman
5. See the reasons why 'I' fail!: Interactively Discovering Failure Modes, Aayush Bansal
6. Improving scene attribute recognition using web-scale object detectors, Frederick Tung and James J. Little
7. Detecting Strange Objects via Visual Attributes, Babak Saleh, Ahmed Elgammal, and Ali Farhadi
8. Dimensionality Reduction using Relative Attributes, Mohammadreza Babaei, Stefanos Tsoukalas, Maryam Babaei, Gerhard Rigoll, and Mihai Datcu

9. Image Retrieval using Categories, Attributes, and Locations, Xingxing Wei, Xiaojie Guo, Yahong Han
 10. Active Deformable Part Models Inference, Menglong Zhu, Nikolay Atanasov, George Pappas, and Kostas Daniilidis
 11. Human Pose Estimation with Fields of Parts, Martin Kiefel and Peter Gehler
 12. Expressive Models and Comprehensive Benchmark for 2D Human Pose Estimation, Leonid Pishchulin, Mykhaylo Andriluka, Peter Gehler, and Bernt Schiele
 13. Deformable Part Models with CNN Features, Pierre-Andre Savalle, Stavros Tsogkas, George Papandreou, Iasonas Kokkinos
 14. Deconstructing the Complexity of the Deformable Parts Model, Brigit Schroeder, Baochen Sun, Kate Saenko, and Karim Ali
 15. Scale-Invariant, Unsupervised Part Decomposition of 3D Objects, Safoura Rezapour Lakani, Mirela Popa, Antonio J. Rodriguez-Sanchez, and Justus Piater
 16. Detection of incomplete rectangles with an implicit fragment-based model, Igor Zingman, Dietmar Saupe, and Karsten Lambers
 17. Birds of a Feather Flock Together – Local Learning of Mid-level Representations for Fine-grained Recognition, Alexander Freytag, Erik Rodner, and Joachim Denzler
 18. Fine-grained recognition by sequential hypothesis rejection and foveated vision on parts, Stephane Herbin
 19. Part Detector Discovery in Deep Convolutional Neural Networks, Marcel Simon, Erik Rodner, Joachim Denzler
 20. Multi-configurations for part-based person detectors, Alvaro Garcia-Martin, Ruben Heras Evangelio, and Thomas Sikora
- 1640 **Invited Talk:** Shih-Fu Chang (*Columbia University*)
- 1715 **Invited Talk:** Lubomir Bourdev (*Facebook*)
- 1750 **Invited Talk:** Peter Belhumeur (*Columbia University*)
- 1825 Closing Remark

ETH Zurich floor plans



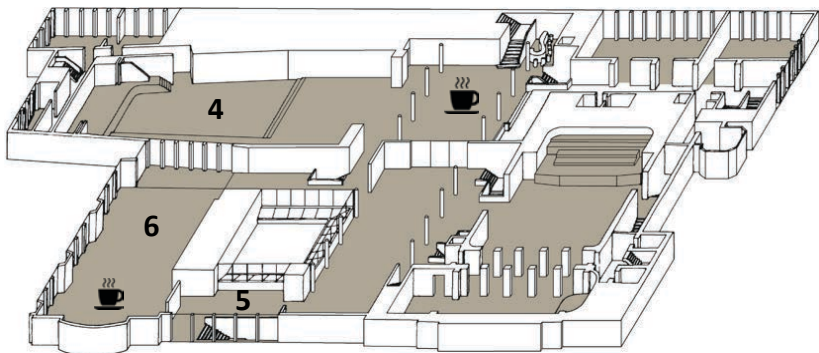
	Sat	Sun	Fri
D1.1:		W05	W21
D1.2:	W06	W15	W26
D3.2:	W03	W10	W28
D5.2:		W16	W18
D7.1:	W02	W11	W20
D7.2:	W08	W14	W22



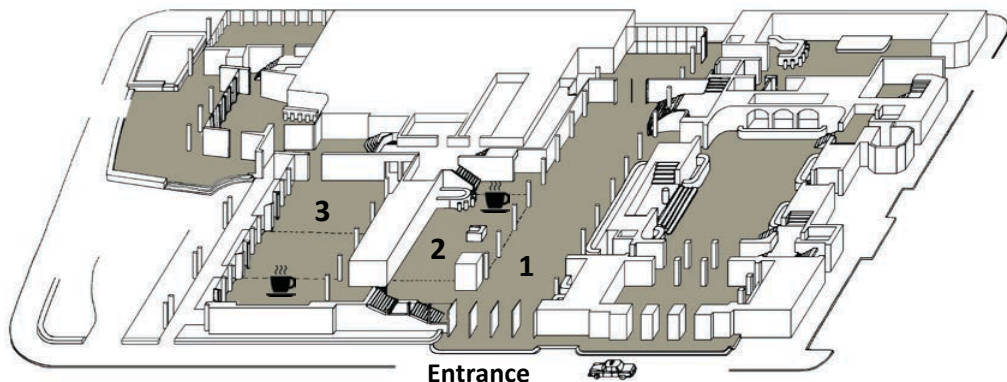
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E1.2:	T1/T3	T7	W24
E3:	W04	W12	W27
E5:		T6	W19
E7:	T4	T5/T8	W25

Zurich Kongresshaus floor plans

Meeting Room Level



Entrance Level



- 1. Vestibul K
- 2. Tagungszentrum
- 3. Gartensaal

- Registration
- Exhibits
- Posters 1-24

- 4. Kongressaal
- 5. Panoramasaal-Foyer
- 6. Panoramasaal

- Orals
- Demos
- Posters 25-52

 Coffee break locations

Wi-Fi@Kongresshaus SSID: eccv - password: eccv2014

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TIME	7:30	8:00	8:30	8:45	9:00	9:15	9:30	9:45	10:00	10:15	10:30	10:45	11:00	11:15	11:30	11:45	12:00	12:15	12:30	12:45	13:00	13:15	13:30	13:45	14:00	14:15	14:30	14:45	15:00	15:15	15:30	15:45	16:00	16:15	16:30	16:45	17:00	17:15	17:30	17:45	18:00	18:15	18:30	18:45	19:00	19:15	19:30	19:45	20:00	20:15	20:30	20:45	21:00	21:15	21:30	21:45	22:00	22:15	22:30	22:45	23:00	23:15	23:30	23:45	24:00																																																																																																																																																																																																																																																							
SATURDAY	E1 Understanding the In-3-camera Image Processing Pipeline for Computer Vision, Location: E1.2												E1.3 Capturing 2D Deformable Models from the Real World, Location: E1.3												E1.4 Higher-order Models and Inference Approaches in Computer Vision, Location: E1.4												E1.5 Where Computer Vision Meets Art (VIS&ART), Location: F1												E1.6 Computer Vision in Vehicle Technology with Special Session in Micro Aerial Vehicles, Location: D1.1												E1.7 Spontaneous Facial Behavior Analysis, Location: D1.2												E1.8 Computer Vision: A Survey for Computer Vision, Location: F1												E1.9 ChatLearn Looking at People: pose recovery, action/interaction, gesture recognition – Day 1, Location: D1.1												E1.10 Video Event Categorization, Tagging and Retrieval towards Big Data, Location: D1.2												E1.11 Person Re-identification: Metrics, Recognition Challenge (RMPC), Location: D1.2												E1.12 Visual Object Tracking Challenge, Location: E1.2												E1.13 Deep Learning for Vision: a Hands-On Tutorial, Location: E1.2												E1.14 Robust Optimization Techniques in Computer Vision, Location: E1.2												E1.15 ChatLearn Looking at People: pose recovery, action/interaction, gesture recognition – Day 2, Location: D1.1												E1.16 Computer Vision (CV) Applied Cross-disciplinary Technologies (CONAC-T), Location: D1.2												E1.17 Visual Perception of Affordances and Functional Visual Primitives for Scene Analysis, Location: D1.1												E1.18 Graphical Models in Computer Vision, Location: E1.2												E1.19 Human-Machine Communication for Visual Recognition and Search, Location: F1												E1.20 Light Fields for Computer Vision, Location: D1.2												E1.21 Computer Vision for Road Scene Understanding and Autonomous Driving, Location: D1.2 (and on parking lot for car demos)												E1.22 Soft Biomimetics, Location: D1.2												E1.23 THIMVS Challenge 2014: Action Recognition with a Large Number of Classes, Location: F1												E1.24 Exhibits, Location: Tagungszentrum Demos, Location: Panoramasaal-Foyer												E1.25 Poster Session 1A, Gartensaal, posters 1-24 Panoramasaal, posters 25-52 Video spotlighting, Location: Kongressaal												E1.26 Oral Session 1C: Learning and Inference, Location: Kongressaal												E1.27 Welcome Reception, Location: Kongressaal											
SUNDAY	E2.1 Keynote: Vision Meets Art (VIS&ART), Location: F1												E2.2 Computer Vision in Vehicle Technology with Special Session in Micro Aerial Vehicles, Location: D1.1												E2.3 Spontaneous Facial Behavior Analysis, Location: D1.2												E2.4 Computer Vision: A Survey for Computer Vision, Location: F1												E2.5 ChatLearn Looking at People: pose recovery, action/interaction, gesture recognition – Day 1, Location: D1.1												E2.6 Computer Vision (CV) Applied Cross-disciplinary Technologies (CONAC-T), Location: D1.2												E2.7 Visual Perception of Affordances and Functional Visual Primitives for Scene Analysis, Location: D1.1												E2.8 Graphical Models in Computer Vision, Location: E1.2												E2.9 Human-Machine Communication for Visual Recognition and Search, Location: F1												E2.10 Light Fields for Computer Vision, Location: D1.2												E2.11 Computer Vision for Road Scene Understanding and Autonomous Driving, Location: D1.2 (and on parking lot for car demos)												E2.12 Soft Biomimetics, Location: D1.2												E2.13 THIMVS Challenge 2014: Action Recognition with a Large Number of Classes, Location: F1												E2.14 Exhibits, Location: Tagungszentrum Demos, Location: Panoramasaal-Foyer												E2.15 Poster Session 1A, Gartensaal, posters 1-24 Panoramasaal, posters 25-52 Video spotlighting, Location: Kongressaal												E2.16 Oral Session 1C: Learning and Inference, Location: Kongressaal												E2.17 Welcome Reception, Location: Kongressaal																																																																																																																							
MONDAY	Registration, Location: Vestibul K												Opening & Awards												Oral Session 1A: Tracking and Activity Recognition, Location: Kongressaal												Coffee Break												Oral Session 1B: Recognition, Location: Kongressaal												Lunch Break												Exhibits, Location: Tagungszentrum Demos, Location: Panoramasaal-Foyer												E1.25 Poster Session 1A, Gartensaal, posters 1-24 Panoramasaal, posters 25-52 Video spotlighting, Location: Kongressaal												E1.26 Oral Session 1C: Learning and Inference, Location: Kongressaal												E1.27 Welcome Reception, Location: Kongressaal																																																																																																																																																																																																											
TUESDAY	Registration, Location: Vestibul K												E1.24 Exhibits, Location: Tagungszentrum Demos, Location: Panoramasaal-Foyer												E1.25 Poster Session 2A, Gartensaal, posters 1-24 Panoramasaal, posters 25-52 Video spotlighting, Location: Kongressaal												Coffee Break												Oral Session 2A: Structure from Motion and Feature Matching, Location: Kongressaal												Lunch Break												E1.24 Exhibits, Location: Tagungszentrum Demos, Location: Panoramasaal-Foyer												E1.25 Poster Session 2B, Gartensaal, posters 1-24 Panoramasaal, posters 25-52 Video spotlighting, Location: Kongressaal												E1.26 Oral Session 2B: Comp. Photography and Low-Level Vision, Location: Kongressaal												E1.27 Coffee Break																																																																																																																																																																																																											
WEDNESDAY	Registration, Location: Vestibul K												E1.24 Exhibits, Location: Tagungszentrum Demos, Location: Panoramasaal-Foyer												E1.25 Poster Session 3A, Gartensaal, posters 1-24 Panoramasaal, posters 25-52 Video spotlighting, Location: Kongressaal												Coffee Break												Oral Session 3A: Vision, Location: Kongressaal												Lunch Break												E1.24 Exhibits, Location: Tagungszentrum Demos, Location: Panoramasaal-Foyer												E1.25 Poster Session 3B, Gartensaal, posters 1-24 Panoramasaal, posters 25-52 Video spotlighting, Location: Kongressaal												E1.26 Oral Session 3B: Segmentation and Saliency, Location: Kongressaal												E1.27 Conference Dinner, Location: ETH Polytess																																																																																																																																																																																																											
THURSDAY	Registration, Location: Vestibul K												E1.24 Exhibits, Location: Tagungszentrum Demos, Location: Panoramasaal-Foyer												E1.25 Poster Session 4A, Gartensaal, posters 1-24 Panoramasaal, posters 25-52 Video spotlighting, Location: Kongressaal												Coffee Break												Oral session 4A: Context and 3D Scenes, Location: Kongressaal												Lunch Break												E1.24 Exhibits, Location: Tagungszentrum Demos, Location: Panoramasaal-Foyer												E1.25 Poster Session 4B, Gartensaal, posters 1-24 Panoramasaal, posters 25-52 Video spotlighting, Location: Kongressaal												E1.26 Oral Session 4B: Motion and 3D Scene Analysis, Location: Kongressaal												E1.27 Closing																																																																																																																																																																																																											
FRIDAY	W18 Transferring and Adapting Source Knowledge (TASK) in Computer Vision (CV), Location: D1.1												W19 Visual Surveillance and Re-identification, Location: E1												W20 Color and Photometry in Computer Vision, Location: D1.1												W21 Storytelling with Images and Videos, Location: D1.1												W22 Assistive Computer Vision and Robotics, Location: D1.2												W23 Computer Vision Problems in Plant Phenotyping (CVPPP), Location: E1.1												W24 Human Behavior Understanding, Location: E1.2												W25 ImageNet Large Scale Visual Recognition Challenge (ILSVRC), Location: E1.2												W26 Non-Rigid Shape Analysis and Deformable Image Alignment (NORDIA), Location: D1.1												W27 Video Segmentation, Location: E1.2												W28 Parts and attributes, Location: D1.2																																																																																																																																																																																															