

2nd European Machine Vision Forum

Where research meets industry



Next generation vision systems for industry – computational imaging, machine learning & more

September 6-8, 2017
AIT Austrian Institute of Technology
Tech Gate Vienna, Austria



Program

The 2nd European Machine Vision Forum is kindly sponsored by the AIT Austrian Institute of Technology (host), the HCI Heidelberg University, Carl Zeiss IMT GmbH, Stemmer Imaging GmbH and Edmund Optics GmbH



Venue

Tech Gate Vienna – Sky Stage 19th floor
Donau-City-Straße 1
1220 Vienna / Austria

Attendance fees (before July 14, 2017 / after)

Industry / commercial research institutes:	490,00 EUR / 590,00 EUR
EMVA members (industry):	350,00 EUR / 450,00 EUR
Members from university or nonprofit research organizations:	350,00 EUR / 450,00 EUR
EMVA members (university /nonprofit research organizations):	290,00 EUR / 390,00 EUR
Students (up to PhD students, with student card):	190,00 EUR / 240,00 EUR
(fees except 20% Austrian VAT)	

Cancellation

Free cancellation of registration is possible only in early bird period (before July 14, 2017) with full refund. 50% of the participation fee will be reimbursed if cancellation is made before August 11, 2017. Afterwards, no refund is possible. In all cases a replacement person can be named.

Program

Wednesday, September 6, 2017

17:00 **Registration open**

18:00 **Welcome and introduction**

Jochem Herrmann, *President EMVA*

Bernd Jähne, *Chair*

18:15 **Panel discussion on „Next Generation Vision Systems“**

Stefan Schönegger, *CMO Bernecker + Rainer Industry Electronics, Eggelsberg (Austria)*

Dr. Dietmar Ley, *CEO Basler AG, Ahrensburg (Germany)*

Dr. Wolfgang Eckstein, *MVTec, Munich (Germany)*

Jochem Herrmann, *Chief Scientist Adimec (The Netherlands) & President of EMVA*

Prof. Dr. Jürgen Beyerer, *Fraunhofer IOSB, Karlsruhe (Germany)*

Prof. Dr. Horst Bischof, *TU Graz (Austria)*

Andreas Vrabl, *Head of Center for Vision, Automation & Control, AIT, Vienna (Austria)*

19:30 **Evening get together with finger food and networking**

Thursday, September 7, 2017

08:00 **Registration open**

08:45 **Welcome from local host**

Andreas Vrabl, *HoC for Vision, Automation & Control, AIT, Vienna, Austria*

Session I: Novel Image Acquisition Techniques and Computational Imaging

09:00 **Image sensors for next generation vision systems?**

Prof. Dr. Albert J. P. Theuwissen, *Harvest Imaging, Belgium*
[invited talk](#)

09:40 **Cognitive sensors for nondestructive monitoring along the product life cycle**

Prof. Dr. Ralf Hanke, *Fraunhofer Development Center for X-Ray Technology, Fürth, Germany*
[invited talk](#)

10:20 **Coffee break / exhibition / posters & demos**

11:00 **Hybrid depth sensing using high-speed multi-line scan technology**

Dr. Svorad Štolc, *High Performance Image Processing, AIT, Austria*
[invited talk](#)

11:40 **A sensitive dynamic and active pixel vision sensor for color or neural imaging applications**

Dr. Diederik Paul Moeys, *Institute of Neuroinformatics, University of Zurich and ETH Zurich, Switzerland*

12:00 **Multimode logarithmic sensor for smart vision systems**

Prof. Dr. Yang Ni, Nicolas Baroan, Dr. Christian Bouvier, *New Imaging Technologies SA, Verrières le Buisson, France*

12:20 **Poster & demo teasers to Session I***

12:30 **Lunch break / exhibition / posters & demos**

**for details, see end of program*

14:00 Light field movie acquisition
Dr. Maximilian Diebold, Hendrik Schilling, Marcel Gutsche, Hamza-Aziz Ahmad, Prof. Dr. Bernd Jähne, *Heidelberg Collaboratory for Image Processing, Germany*

14:20 A comprehensive comparative study of high-end CMOS cameras using the EMVA1288 standard
Prof. Dr. Bernd Jähne, *HCI, Heidelberg University, Germany*, and Dr. Helmut Herrmann, *AEON, Hanau, Germany*

Session II: Platforms, Programming, Integration (Industry 4.0)

14:40 Addressing the challenges of high performance low power real-time computer vision systems with the TULIPP platform
Ben Rodriguez, *HIPPEROS and Université Libre de Bruxelles, Belgium*
[invited talk](#)

15:20 **Coffee break / exhibition / posters & demos**

16:00 Manycore embedded processors for portable, optimized and power-efficient processing of methods for vision algorithms
Prof. Dr. Jean-François Nezan, *INSA, Université de Rennes, France*
[invited talk](#)

16:40 Fully automatic inline measurement using collaborative robot systems equipped with fast high resolution 3D sensor
Dr. Reinhard. Danzl, T. Lankmair and F. Helmlí, *Alicona, Raaba, Austria*

17:00 Towards more flexible image sensors for multi-modal in-line image acquisition
Dr. Ernst Bodenstorfer, Dr. Svorad Štolc, Andreas Vrabl, *AIT Austrian Institute of Technology, Vienna, Austria*, Christian Nitta, *Fraunhofer IMS, Duisburg, Germany*, Laurin Ginner, Christian Doppler, *Medical University of Vienna, Austria*

17:20 **Announcement of location and focal topic of the 3rd European Machine Vision Forum in 2018**

17:30 **Poster & demo teasers to Session II***

17:40 **Evening get together with fingerfood / exhibition / posters & demos**

18:45 **VIENNA SIGHTSEEING-TOUR (OPTIONAL), Duration approx. 1.5 h**

Friday, September 8, 2017

Session III: Image Processing Algorithms and Machine Learning

- 09:00 Industrial hyperspectral imaging
Markus Burgstaller, *CEO, Head of R&D, Perception Park, Graz, Austria*
[invited talk](#)
- 09:40 Snapshot hyperspectral imaging with RGB sensors
Boaz Arad and Prof. Ohad Ben-Shahar, *Department of Computer Science, Ben-Gurion University of the Negev and HC Vision, Be'er Sheva, Israel*
- 10:00 VOLA: A compact volumetric format for 3D mapping and embedded systems
Dr. Jonathan Byrne, Sam Caulfield, David Moloney, *Computer Vision and Machine Learning Group, Movidius / Intel, Ireland*
- 10:20 **Coffee break / exhibition / posters & demos**
- 11:00 Deep learning: Success stories, open challenges and future outlook
Prof. Sergios Theodoridis, *University of Athens, Greece, and Soterios Chatzis, Cyprus University of Technology, Cyprus*
[invited talk](#)
- 11:40 Polimago - Using machine vision classifiers for accurate scale and rotation in variant object detection
Frank Orben, *Stemmer Imaging, Puchheim, Germany*
- 12:00 Learning and recognising objects on demand
Dr. Michael Zillich, Markus Vincze, Johann Prankl, *TU Wien, Automation and Control Institute, Vienna, Austria*
- 12:20 **Poster & demo teasers to Session III***
- 12:30 **Closing remarks**
- 12:40 **Farewell lunch / exhibition / posters & demos** (end at approx. 14:00 h)

**for details, see end of program*

Poster & Demo Teasers – Details

Session I: Novel Image Acquisition Techniques and Computational Imaging

Metaphase's SWIR LED Illumination (Poster and demo)

James Gardiner, *Metaphase Lighting Technologies, Bristol, USA*

On the urgent need of an open camera to lens communication standard for vision systems (Poster with open problem)

Bernd Jähne, *HCI Heidelberg University, Germany*

Demonstrator „xposure high-speed multi-line-scan camera with linerates up to 600 kHz“ (Demo)

Ernst Bodenstorfer, *Austrian Institute of Technology, Vienna, Austria*

Multi-Mode Logarithmic Sensor for Smart Vision Systems (Demo)

Yang Ni, Christian Bouvier, Nicolas Baroan, *New Imaging Technology, Verrières le Buisson, France*

Time-of-Flight Camera with enhanced imaging modes (Demo)

Thomas Maier, *BECOM BLUETECHNIX, Vienna, Austria*

Simulation and lossless compression of linear image sensor signals with a high dynamic range of more than 16 bits (Poster)

Martin Schwarzbauer, *PCO AG, Kelheim, and Bernd Jähne, HCI Heidelberg University, Germany*

Instrumentation and software for camera characterization according to the EMVA 1288 standard (Demo)

Helmut Herrmann, *AEON, Hanau, and Bernd Jähne, HCI Heidelberg University, Germany*

Full BRDF Reconstruction Using CNNs from Partial Photometric Stereo-Light Field Data (Poster)

Doris Antensteiner, Svorad Štolc, *Austrian Institute of Technology, Vienna, Austria*

Robust 3D Reconstruction from Circular Light Fields with Specular Surfaces (Poster)

Alessandro Vianello, *HCI Heidelberg University, Jens Ackermann, Robert Bosch GmbH, Stuttgart, Maximilian Diebold, HCI Heidelberg University, and Bernd Jähne, HCI Heidelberg University, Germany*

Inline Computational Imaging (Demo)

Svorad Štolc, Bernhard Blaschitz, Dorothea Heiss, *Austrian Institute of Technology, Vienna, Austria*

Poster & Demo Teasers – Details

Session II: Platforms, Programming, Integration (Industry 4.0)

Is your „Next Generation Vision System“ ready for real-time? (Poster)

Oliver Barz, *Imago Technologies GmbH, Friedberg, Germany*

Possibilities of optical imaging, inspection and measurement in the machine vision business (Poster)

Jens Krauß, *First Sensor AG, Dresden, Germany*

Lubricant Detection: A Case Study in NIR Spectral Imaging (Poster)

Christoph Heckenkamp, Christian Günther, Frank Friehl, *Hochschule Darmstadt, Germany*

Keeping Track of Object Trajectories in Sensor-based Sorting (Poster)

Georg Maier, Robin Gruna, Thomas Längle, *Fraunhofer IOSB, Karlsruhe, Germany*

The HCI Benchmark Suite: Stereo And Flow Ground Truth With Uncertainties for Urban Autonomous Driving (Poster)

Oliver Zendel, Karsten Krispin, Katrin Honauer, Alexander Brock, *HCI Heidelberg University, Germany*

The 4D Light Field Benchmark: A Dataset and Evaluation Methodology for Depth Estimation on 4D Light Fields (Poster)

Katrin Honauer, *HCI, Heidelberg University*, Ole Johannsen, *University of Konstanz*, Daniel Kondermann, *HCI, Heidelberg University (Alumnus)*, Bastian Goldluecke, *University of Konstanz*

Poster & Demo Teasers – Details

Session III: Image Processing Algorithms and Machine Learning

Classification of SURF Image Features by Selected Machine Learning Algorithms

Karel Horak, Jan Klecka, Ondrej Bostik, and Daniel Davidek, *Brno University of Technology, Czech Republic*

Photogrammetric 3D Reconstruction of the Old Slaughterhouse in Budapest

András Majdik, László Tizedes, Máté Bartus, and Tamás Szirányi, *MTA SZTAKI, Budapest, Hungary*

Model-based Tracking for Industry 4.0 (Software demo)

Axel Weissenfeld, Walter Kumbeiz, Julia Simon, Elisabeth Broneder, and David Schreiber, *Austrian Institute of Technology, Vienna, Austria*

Polimago - Portable turntable demo

Frank Orben, *Stemmer Imaging GmbH, Puchheim, Germany*

nVision - Machine Vision Development Software - Demonstration Stand

Peter Schregle, *Impuls Imaging GmbH, Türkheim, Germany*

The Perception STUDIO for easy industrial use of hyperspectral imaging (Demo)

Markus Burgstaller, *Perception Park, Graz, Austria*

Scientific Advisory Board

Prof. Dr. Bernd Jähne, Chair / EMVA board member

HCI, Heidelberg University (Germany)

Jochem Herrmann, President EMVA

Adimec, Eindhoven (The Netherlands)

José Angel Gutiérrez Olabarria

Tecnalia, Special Machinery B.A. - Industry & Transport Div. , Derio
(Bizkaia, Spain)

Prof. Dr. Michael Heizmann

Fraunhofer IOSB / Institute for Industrial Information Technics at KIT,
Karlsruhe (Germany)

Prof. Aytül Erçil

VISPERA Bilgi Teknolojileri A.S. / Sabanci University, Istanbul (Turkey)

Prof. Ludovic Macaire

Université de Lille (France)

About EMVA

Founded in Barcelona in May 2003, the [European Machine Vision Association](#) is an industry-driven networking framework providing a constant source of exchange, information and inspiration on machine vision technology in Europe. More than 100 companies, some national machine vision associations and several research organizations are members – representing more than 20 countries. More information can be found at www.emva.org.

Address:

Gran Via de Carles III, 84 (3rd floor)
08028 Barcelona, Spain

Phone: +34 931 807060

Fax: +34 931 807060

E-mail: info@emva.org

Website: <http://www.emva.org>

Notes



©Foto: A. Tischler

Event Organization

AEON Verlag & Studio GmbH & Co. KG
Alter Rückinger Weg 31
63452 Hanau, Germany

Phone: +49 61 81 520 51-0
Fax: +49 61 81 520 51-90
E-Mail: info@emva-forum.org
Internet: www.emva-forum.org

Venue

Tech Gate Vienna – Sky Stage 19th floor
Donau-City-Straße 1
1220 Vienna / Austria

www.techgate.at
www.the-stage.at