

# IM2 Newsletter

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## News

### ICMI 2011

November 14-18, 2011,  
in Alicante, Spain

<http://www.acm.org/icmi/2011>

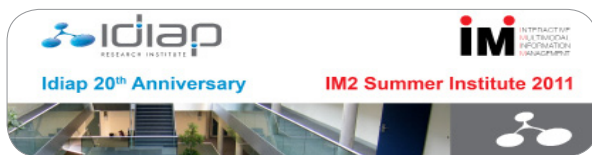
Cover Story

## IM2 Summer Institute 2011 and Idiap 20<sup>th</sup> Anniversary SEPTEMBER 1-2 2011, MARTIGNY

This year, the IM2 Summer Institute was organized jointly with the Idiap 20<sup>th</sup> anniversary celebration. This public event took place at the Idiap Research Institute in Martigny, on September 1-2 2011.

Keynotes speakers gave a talk on Thursday September 1<sup>st</sup>. Amongst them were:

- Dr. SAMY BENGIO, Google, CA, USA
- PROF. CAROL PETERS, Institute for Information Science and Technologies, Italy
- PROF. BAYYA YEGNANARAYANA, International Institute of IT, Hyderabad, India
- DR. ROELOF VAN ZWOL, Yahoo! Research Silicon Valley, CA, USA



The IM2 Advisory Board and the Idiap Advisory Board attended public parallel sessions on Friday September 2<sup>nd</sup>.

Scientists had the opportunity of presenting the progress of their work during a poster session on Friday afternoon.

All the talks on Thursday were recorded by Klewel and are available at:

<http://klewel.com/20years-idiap-2011>

More information like slides, list of posters and pictures of the event are available at: <http://www.im2.ch/summer-institute-2011>

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## Klewel launches a new product: "Triskel"

TRISKEL: A MULTIMEDIA CAPTURE STATION ALONG WITH AN ONLINE PUBLISHING PORTAL.

The company Klewel announces the launch of Triskel. Klewel showcased its new product Triskel at the international exhibition of audiovisual IBC 2011 in Amsterdam on September



9-13, 2011. Firstly intended for audiovisual professionals and event service agencies, Triskel is a comprehensive webcasting platform to record and publish presentations given at events such as international conferences.

Triskel consists of an audio-visual recording station associated with a web portal. The Triskel station can be used with a microphone (or the output of a mixing console) and a camera (or the output of the audiovisual control room). Recording of each event starts and stops at the simple press of a button. Once recording is complete, data is automatically uploaded

to a server. The Klewel station is available as a portable computer or it may be delivered in a customised form to meet conference organizers' needs. Triskel's web portal makes it possible to automatically reference, edit and publish content (audio, video, slide shows) in total simplicity. One click and it's online! In addition, the content of each presented slide is also indexed for search purpose. Each event is accessible anytime, anywhere (at home, at the office or elsewhere) and can be viewed on all types of media: computer, mobile phone, tablet, etc.

Klewel benefits from Idiap's OCR (optical character recognition) technology to index the recorded conferences. More information at <http://www.klewel.ch>

*From an Idiap website news*

## ISO IEC 3D Video Quality Subjective Evaluation Tests

EPFL, OCTOBER 26-31, 2011

During the month of October, the Multimedia Signal Processing Group (MMSPG) of EPFL, as part of the QUALINET Network of Excellence, and related to the IM2 project, has been involved in the preparation

of the ISO IEC formal subjective test campaign for the evaluation of the proponent technologies for 3D video coding. The subjective test for 3D video quality evaluation has been carried out at the 3D visual lab of MMSPG during the last two weeks of October, involving approximately 100 people taking part to the test campaign.



The results of the experiments will be presented at the next MPEG meeting, which will take place in Geneva from November 28th till December 2nd. Based on the outcome of the tests, the best performing technologies will be selected to define the future 3D video coding standard.

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## Completed Thesis, Peter Vajda – MMSPG, EPFL OBJECT DUPLICATE DETECTION

On October 14th 2011, Peter Vajda successfully defended his PhD thesis at the Doctoral program in computer, communication and information sciences of the École Polytechnique Fédérale de Lausanne – EPFL, supervised by Prof. Touradj Ebrahimi.

With the technological evolution of digital acquisition and storage technologies, millions of images and video sequences are captured every day and shared in online services. One way of exploring this huge volume of images and videos is through searching a particular object depicted in images or videos by making use of object duplicate detection. Therefore, need of research on object duplicate detection is validated by several image and video retrieval applications, such as tag propagation, augmented reality, surveillance, mobile visual search, and television statistic measurement.

Object duplicate detection is detecting visually same or very similar object to a query. Input is not



restricted to an image, it can be several images from an object or even it can be a video.

This dissertation describes the author's contribution to solve problems on object duplicate detection in computer vision. A novel graph-based approach is introduced for 2D and 3D object duplicate detection in still images and video. Graph model is used to represent the 3D spatial information of the object based on the local features extracted from training images so that an explicit and

complex 3D object modeling is avoided. Therefore, improved performance can be achieved in comparison to existing methods in terms of both robustness and computational complexity. This method is shown to be robust in detecting the same objects even when images containing the objects are taken from very different viewpoints or distances.

In this dissertation, several mobile applications are described for object duplicate detection such as object recognition based museum guide, money recognition or flower recognition. General object duplicate detection may fail to detect chess figures. However considering context, like chess board position and height of the chess figure, detection can be more accurate.

It is also demonstrated that user interaction further improves image retrieval compared to pure content-based methods through a novel social game called Epitome:

<http://apps.facebook.com/epitome>.

Peter Vajda  
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## News

### New collaborative project between Idiap and NTT, Japan

#### NISHA (NTT-Idiap Social beHavior Analysis Initiative).

Daniel Gatica-Perez (Idiap) and Kazuhiro Otsuka (Senior Researcher at NTT Communication Science Labs, Japan) have started a joint research project, called NISHA (NTT-Idiap Social beHavior Analysis Initiative).

The project consolidates a collaboration started in 2010 with Dr. Otsuka's sabbatical visit to Idiap. NISHA addresses the recognition of social characteristics that emerge when small teams solve tasks together, and aims at inferring relationships among team members from dyadic nonverbal behavior.

Dinesh Babu Jayagopi (Idiap) is the postdoctoral researcher working on the project, which extends some of the ideas developed as part of his IM2-funded PhD work.

Daniel Gatica-Perez  
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### Best Impact Paper Award for ETH

#### BMVC 2012, in Dundee

The ETH Computer Vision Lab received the Best Impact Paper Award at the British Machine Vision Conference, held in Dundee this year, for the paper: Alain Lehmann, Peter Gehler, and Luc Van Gool Branch & Rank: Non-Linear Object Detection.

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### ETH start-ups amongs the best of the year 2011

#### kooaba, Procedural, and VirtaMed

A list of the 100 best Swiss start-ups of the year 2011 has been published, among which all three spin-offs of the ETH Computer Vision Lab figure (kooaba at rank 16; Procedural, recently acquired by ESRI, at rank 27; and VirtaMed at rank 30).

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### IM2 IP head awarded

#### Prestigious ERC Advanced Grant

Prof. Luc Van Gool, head of the Computer Vision Lab at ETH, has been awarded a prestigious ERC Advanced Grant for his proposal "VarCity: Variation & the City", starting in 2012.

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### NCCRs – Special Call for Transfer Projects

#### Up to 10 Million CHF for NCCR transfer projects

In fall 2011, the Swiss Parliament has decided to launch an initiative on the mitigation of the effects of the strong Swiss franc of about CHF 870 mios. The main objective is to strengthen the Swiss economy.

The Swiss Confederation has allocated CHF 10 mios for NCCR transfer projects. This funding is part of the package of measures for the mitigation of the negative effects of the strong Swiss franc. It is a great success of the NCCRs that they were chosen to be part of this action.

The NCCRs are invited to submit proposals to the SNSF by the 15th of February 2012.

*News from the SNSF*

### Selected publications

Subjective quality evaluation of foveated video coding using audio-visual focus of attention.

*J.-S. Lee, F. De Simone and T. Ebrahimi*

In IEEE Journal of Selected Topics in Signal Processing, 5(7), 1322-1331 (2011).

Performance analysis of VP8 image and video compression based on subjective evaluations.

*F. De Simone, L. Goldmann, J.-S. Lee and T. Ebrahimi*

In SPIE Optics and Photonics, Applications of Digital Image Processing XXXIV, 8135, August 2011.

You Are Known by How You Vlog: Personality Impressions and Nonverbal Behavior in YouTube.

*J.-I. Biel, O. Aran, and D. Gatica-Perez*

In Proc. AAAI Int. Conf. on Weblogs and Social Media (ICWSM), Barcelona, Jul. 2011.

Subjective quality evaluation via paired comparison: application to scalable video coding.

*J.-S. Lee, F. De Simone and T. Ebrahimi*

In IEEE Transactions on Multimedia, 13(5), 882-893 (2011).

A Graphical UIDL Editor for Multimodal Interaction Design Based on SMUIML.

*B. Dumas, B. Signer, and D. Lalanne*

In Proc. of Int. Workshop on User Interface Description Language, UIDL 2011, Lisbon, Sept. 6 2011.