IM2 Newsletter

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IM2 Summer Institute 2011 and Idiap 20th Anniversary

September 1st - 2nd 2011, Idiap Research Institute (Martigny)

http://www.im2.ch/summer-institute-2011

Cover Story

Tracking gaze and facial expression

NEW SOFTWARE ALLOWS YOU TO INFER WHICH PART OF THE COMPUTER SCREEN IS CURRENTLY LOOKED AT.

IM2 researchers have recently developed a software that automatically captures and analyses eye movements. This opens up new avenues for market research. The work was presented in Hannover, April 4-8 2011, at the world's largest industrial trade fair.
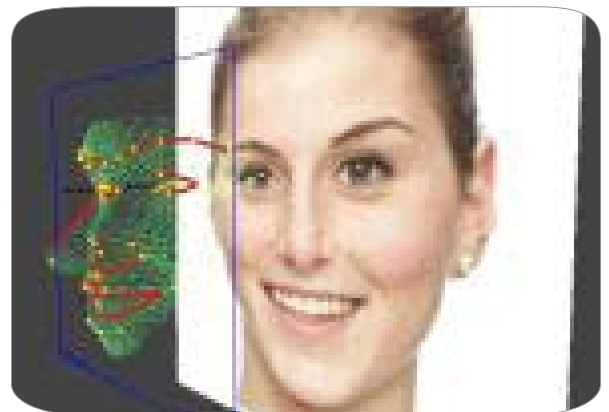
It takes a few seconds to interpret what a person's facial expression or eyes say about their feelings. However, for participants in market surveys entering responses on a computer, this has only been possible in the market research lab so far.

The scientists have developed a software to detect which part of the screen is currently being looked at. This is based on the person's eye movements, which are recorded by simple webcam. "Technically, this was a major challenge," says Matteo Scorci, a researcher at the EPFL, "because eye movements are minute, but they occur within seconds."

At the moment, the researchers are striving to combine their new software with another application that can gauge the person's feelings based on the facial expressions recorded by a webcam. "If we succeed in performing automated evaluations on both sets of information, namely facial expression and eye movements," Sorci explains, "we would be able to deduce what a person was seeing and feeling at the time." Up until now, psychologists have observed test subjects in the market research lab and interpreted their feelings. Despite professional working methods, an element of subjectivity can never be ruled out here. If the gaze and facial expression are interpreted by a computer, the market researchers would gain a more objective understanding of the interviewee's emotional response. It would also make it possible to conduct interviews with focus groups on the Internet.

The EPFL team has developed the new software in collaboration with nViso, a start-up company that emerged from the NCCR IM2. The research project is one of 28 projects that got underway in autumn 2009 in the context of strategic measures to stabilise the Swiss economy.

Adapted news from the SNSF website 04/07/2011
http://www.snf.ch

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INTERACTIVE MULTIMODAL INFORMATION MANAGEMENT

IM2 Summer Institute 2011 AND Idiap 20th Anniversary
SEPTEMBER 1-2 2011, MARTIGNY

This year, the IM2 Summer Institute will be organized jointly with the Idiap 20th anniversary celebration. This major and public event will take place at the Idiap Research Institute in Martigny, on September 1-2 2011.

Invited researchers from IM2 and from the Idiap Research Institute will give talks on Thursday September 1st. The IM2 Advisory Board and the Idiap Advisory Board will attend public parallel sessions on Friday September 2nd. It will be a great and unique opportunity to meet these researchers during the poster session on Friday afternoon.

The program of the scientific talks on Thursday is the followings:

MOBILE MULTIMEDIA
09:30 – 10:00 Person authentication using face and voice on a mobile phone: from research to reality
Dr. Sébastien Marcel (Idiap)

10:00 – 10:30 Mobile multimedia services based on user attention profiles
Francesca De Simone (EPFL)

SOCIAL MEDIA
11:00 – 11:30 Vlogcast yourself: exploring nonverbal behavior in social media speaker
Joan-Isaac Biel Tres (Idiap)

11:30 – 12:00 Driving media engagement
Dr. Roelof van Zwol (Yahoo! Research)

LARGE SCALE MULTIMEDIA INDEXING
13:00 – 13:30 Large-scale multimedia retrieval: distributing multimodal interactive learning
Dr. Stéphane Marchand-Maillet (UNIGE)

13:30 – 14:00 Large scale image annotation: learning to rank with joint word-image embeddings
Dr. Samy Bengio (Google, USA)

14:00 – 14:30 Automatic content linking: a speech-based real-time retrieval system using semantic search
Dr. Andrei Popescu-Belis (Idiap)

INTERFACES AND INTERACTIONS
15:00 – 15:30 Cross lingual speaker adaptation
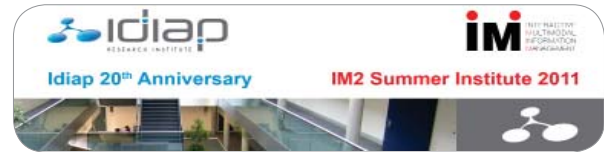*Phil Garner, Dr. John Dines and Hui Liang (Idiap)*

15:30 – 16:00 Epoch-based analysis of speech and its applications
Prof. Bayya Yegnanarayana (International Institute of IT, Hyderabad, India)

16:00 – 16:30 Measuring gaze behavior in real environments: applications to research and industry
Dr. Basilio Noris (EPFL)

EVALUATION AND USABILITY
16:30 – 17:00 The importance of evaluation for multilingual information access
Prof. Carol Ann Peters (Institute for Information Science and Technologies, Italy)

17:00 – 17:30 What is beautiful is usable - aesthetics and other factors that influence the outcomes of usability tests
Dr. Andreas Sonderegger and Prof. Juergen Sauer (UNIFR)

On Friday morning, the scientific talks presented during the ***Idiap Advisory Board*** session are:

08:00 – 08:30 *Executive summary*
Prof. Hervé Bourlard (Idiap)

08:30 – 09:00 An information theoretic approach to speaker diarization
Dr. Fabio Valente (Idiap)

09:00 – 09:30 Natural language processing (almost) from scratch
Dr. Ronan Collobert (Idiap)

09:30 – 10:00 Reality mining for real: large-scale human behavior and smart phone data
Dr. Daniel Gatica-Perez (Idiap)

10:30 – 11:00 Life long learning of semantic spatial concepts
Dr. Barbara Caputo (Idiap)

11:00 – 11:30 What's going on? Discovering temporal motifs from sensors logs
Dr. Jean-Marc Odobez (Idiap)

11:30 – 12:00 The MASH project: toward the collaborative design of hyper-complex learning software
Dr. François Fleuret (Idiap)

In parallel, the scientific talks presented during the session of the ***IM2 Advisory Board*** are:

08:30 – 08:45 Executive summary
Prof. Touradj Ebrahimi (EPFL)

08:45 – 09:20 Human centered design and evaluation (IP2)
Dr. Denis Lalanne (UNIFR), Dr. Andrei Popescu-Belis (Idiap)

09:20 – 10:00 Integrated multimodal processing (IP1)
Prof. Aude Billard (EPFL), Dr. Stéphane Marchand-Maillet (UNIGE)

10:30 – 11:15 Social signal processing (IP3)
Dr. Alessandro Vinciarelli (GLA), Dr. Fabio Valente (Idiap)

11:15 – 12:00 Structural impact and activities beyond the NCCR (AIM2)
Prof. Touradj Ebrahimi (EPFL)

Then, on Friday afternoon, about 25 scientists will present the progress of their work during a poster session.

The registration to attend the scientific talks and the poster session will close on August 25 2011. More information and registration at: *http://www.im2.ch/summer-institute-2011*

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IM2 Newsletter

INTERACTIVE MULTIMODAL INFORMATION MANAGEMENT

Idiap Research Institute, IM2 leading house, celebrates its 20th Anniversary
20 YEARS OF SUCCESS

Different events will be available to a large audience by the end of 2011 to celebrate the 20 years of success of the Idiap Reserach Institute.

August 30 - September 20
Exhibition of Idiap activities at the "Restoroute - Relais du Saint-Bernard" on the highway next to Martigny.

August 31 - September 2
20th anniversary scientific workshop organised jointly with IM2 Summer School.

September 9 (15h-20h) and September 10 (9h-15h)
Idiap Open Doors: The visitors will be invited to walk in the premises of the institute to discover the Idiap various activities through demonstrations, posters, video screen and personal contact.

September 24
Idiap Challenge: A contest will be organised in collaboration with the State Police with a prize money of CHF 10'000. The description of challenge is however kept secret until the official launch of the game.

More information will be available early September at:
http://www.idiap.ch

Céline Aymon
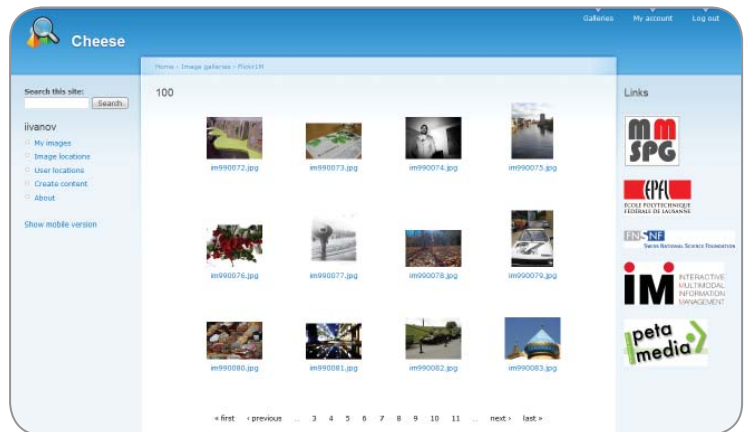*celine.aymon@idiap.ch*

Swiss Cheese
AN ADVANCED IMAGE MANAGEMENT PLATFORM

Within the frame of IM2 (IP1), MMSPG (EPFL) has developed Cheese, an advanced image management platform for online use and mobile devices. Beside standard features such as image upload, tagging and keyword based search, it offers the user visual similarity based search, object based tagging and semi-automatic tag propagation. For improved interoperability between different image repositories and applications, the platform supports the export and import of image files with embedded metadata in JPSearch - Part 4 compliant format.

The platform was presented at the 55th JPEG meeting which was held on July 11-15, 2011, in Berlin, Germany. All that are interested in image search are welcome to use this site which is offered for free use.

Link to the platform *http://cheese.epfl.ch*
YouTube demo: *http://www.youtube.com/watch?v=hFFjQ7-YxJ4*
http://www.youtube.com/watch?v=ucnYBrJ2OTU

Prof. Touradj Ebrahimi
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Cheese, an advanced image management platform

Social game "Epitome"
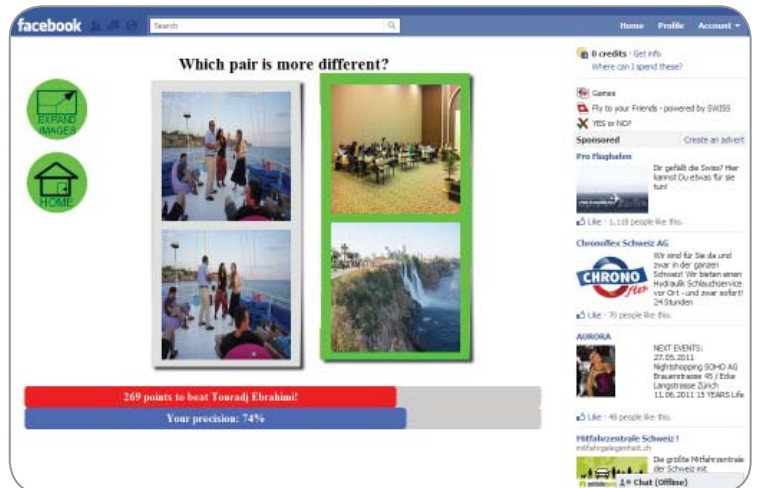### A FACEBOOK GAME FOR PHOTO ALBUM SUMMARIZATION

MMSPG (EPFL) has created a novel social game "Epitome" for photo album summarization as an Android and Facebook application. "Epitome" is a social application, which provides many pleasant hours while playing it and enjoying photos. At the same time, it summarizes photo albums and provides useful research data.

Users play with photos of their Facebook friends through two games. In these games, the user has to select either better of two photos or pair of photos that is more different. Results of these two games are integrated to produce a summarization for a Facebook photo album. These photos can be used to create a collage of an album, a cover for an album, or to be included in a photo book.

Link to the game: *http://apps.facebook.com/epitome*
YouTube demo: *http://www.youtube.com/watch?v=C5f6qYFJl3Q*

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Social game "Epitome" for photo album summarization

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IM2 Newsletter

INTERACTIVE
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News

ETH-CVL and kooaba start a new CTI project

Computer Vision Laboratory of ETHZ

The Computer Vision Laboratory of ETHZ and its spin-off kooaba have received a CTI project that will allow kooaba to further strengthen its product portfolio. The project is titled "intelligent photo management for the smartphone age". It mainly aims at the organisation of personal photo collections. Personal background and network to a large extent determine what is of interest to a user. Finding this out automatically is one of the project's goals. This in term helps to better retrieve, sort, and crop images.

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IEEE Awards for Idiap researchers

MDM 2011, ISWC 2011, ICASSP'2011

Trinh-Minh-Tri DO got the Best Paper Runner-Up Award for presenting the paper called "Contextual grouping: discovering real-life interaction types from longitudinal Bluetooth data" at IEEE International Conference on Mobile Data Management, Sweden, June 6-9, 2011 .

Two papers were nominated for the Best Paper Award at the IEEE International Symposium on Wearable Computers, San Francisco, CA, June 12-15, 2011: "GroupUs: Smartphone Proximity Data and Human Interaction Type Mining" by Trinh-Minh-Tri Do and Daniel Gatica-Perez; and "Who's Who with Big-Five: Analyzing and Classifying Personality Traits with Smartphones" by Gokul Chittaranjan, Jan Blom and Daniel Gatica-Perez. The first paper got the Best Paper Award.

At the International Conference on Acoustics, Speech and Signal Processing (ICASSP), May 22-27 2011, Prague, Afsanei Asaei received the Spoken language processing student travel grant for her paper on "Model-based Compressive Sensing for Distant Multi-party Speech Recognition" co-authored with Hervé Bourlard and Volkan Cevher.

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IM2 members involved in the organisation ICMI '11

November 14-18, 2011, in Spain

Five researchers from the Idiap Research Institute and involved in IM2 - Herve Bourlard (General Chairs, Advisory Board), Daniel Gatica-Perez (Program Chairs), Jean-Marc Odobez (Area Chairs), Alessandro Vinciarelli (Area Chairs), Andrei Popescu Belis (Advisory Board) - are member of the organizing committee of the next International Conference on Multimodal Interaction (ICMI 2011) which will take place, November 14-18, 2011, in Alicante, Spain, *http://www.acm.org/icmi/2011*.

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Best Poster Award for IM2 researchers

S3MR, July 1, 2011

Peter Vajda, Ivan Ivanov and Touradj Ebrahimi, from MMSPG at EPFL, received the Best Poster Award at the 2nd Summer School on Social Media Retrieval (S3MR), Antalya, Turkey, June 26 – July 1, 2011, for their poster entitled "Swiss Cheese for visual search".

In this poster, Swiss Cheese is presented as an interactive online platform compatible with JPSearch - Part 4 standard that is capable of collecting and annotating image database. It further provides search for similar images and tag propagation.

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Selected publications

Emotion Assessment from Physiological Signals for Adaptation of Games Difficulty.
G. Chanel, C. Rebetez, M. Bétrancourt, T. Pun
In IEEE Transactions on Systems, Man and Cybernetics, Part A: Systems and Humans, issue 41, 2011.

Short-term emotion assessment in a recall paradigm.
G. Chanel, J. J. M. Kierkels , M. Soleymani, T. Pun
In Journal International Journal of Human-Computer Studies, Volume 67, issue 8, pages 607-627, 2009.

Audio-visual synchronization recovery in multimedia content.
J.-S. Lee and T. Ebrahimi
In Proceedings of the International Conference on Acoustics, Speech and Signal Processing (ICASSP), Prague, pp.2280-2283, May 2011.

Social Game Epitome versus Automatic Visual Analysis.
JP. Vajda, I. Ivanov, L. Goldmann and T. Ebrahimi
In Proceedings of IEEE International Conference on Multimedia and Expo (ICME), July 2011.

An integrated framework for multi-channel multi-source localization and voice activity detection.
M. J. Taghizadeh, Ph. Garner, H. Bourlard and H. R. Abutalebi
In In Proceedings of The Third Joint Workshop on Hands-free Speech Communication and Microphone Arrays, Edinburgh, UK, May 2011.

A Just-in-Time Document Retrieval System for Dialogues or Monologues.
A. Popescu-Belis, M. Yazdani, A. Nanchen and Ph. Garner
In proceedings of SIGDIAL 2011 (12th annual SIGDIAL Meeting on Discourse and Dialogue), Demonstration Session, Portland, OR, p.350-352, 2011.

A Fitt of distraction: measuring the impact of distracters and multi-users on pointing efficiency.
D. Lalanne and A. Lisowska Masson
In Proceedings of the 2011 annual conference extended abstracts on Human factors in computing systems (CHI EA '11). ACM, New York, NY, USA, pp. 2125-2130, 2011.

Continuous Emotion Detection in Response to Music Videos.
M. Soleymani, S. Koelstra and Ioannis Patras and T. Pun
In International Workshop on Emotion Synthesis, rePresentation, and Analysis in Continuous spacE (EmoSPACE), Santa Barbara, US, March 2011.

A Speech-based Just-in-Time Retrieval System using Semantic Search.
A. Popescu-Belis, M. Yazdani, A. Nanchen and Ph. Garner
In Proceedings of the 49th Meeting of the ACL-HLT, Systems Demonstrations, Portland, OR, p. 80-85, 2011.