

IM2 Newsletter

Contents

COVER STORY

- Swiss - Japanese Workshop on Multimedia Content Structuring and Access 1

FOCUS

- IM2 Scientific Advisory Board met on September 24 2
- IM2 met the NCCR for Affective Sciences 2
- 2007 Call for Proposals Results 3
- CHORUS 3
- GOOGLE Portrait 3

INSIDE IM2

- Upcoming Events 4
- Partner News 4
- Awards 4
- Selected publications 4

News

November 15-16

Site Visit of the IM2 Review Panel

Venue:

University of Geneva

Review Panel members:

Prof. Angelika Steger (Chair)

Dr. Giordano Bruno Beretta

Dr. Bill Byrne

Prof. Shih-Fu Chang

Prof. Tat-Seng Chua

Prof. Béat Hirsbrunner

Prof. Ramesh Jain

Prof. Helen Mei-Ling Meng

Prof. Claudia Opitz-Belakhal

Prof. Yu-Jin Zhang

Cover Story

Swiss - Japanese Workshop on Multimedia Content Structuring and Access

IDIAP, EPFL, UNIGE, 3-5 SEPTEMBER 2007

This 3-day workshop took place at IDIAP (1st day), EPFL (2nd day), University of Geneva (3rd day), September 3-5. The main objectives of the seminar were to bring together two leaders (National Japanese project, «Large-Scale Knowledge Resources» managed by Prof. Furui, <http://www.coe21-lkr.titech.ac.jp/> and IM2) in the field of Multimedia Content Structuring and Access to:

1. Share the current status of their research in this key multi-disciplinary area.
2. Identify research themes of common interest, as well as complementary expertise.
3. Discuss possible areas of collaboration.



As a key research theme in Information and Communication Technologies, the workshop served as a forum for the dissemination of state-of-the-art research, development, and implementations of multimedia systems, technologies and applications, also included overviews of current large project initiatives involving some of the workshop participants. Presentations and panel discussions encompassed the following research themes and project overviews:

- Speech and audio processing
- Video processing
- Joint audio and video (multimedia) processing
- Multimedia structuring and indexing, also including multimedia (hierarchical, multi-tier) annotation standards.
- Retrieving and accessing multimedia information
- Next-generation multi-modal search in

- multimedia data collections
- Multi-lingual issues in all the above
- Annotated multimedia corpora for research

The Swiss and Japanese participants are recognised as the leaders in their fields in the EU and Asia, respectively, and their work and experience to a large extent complement each other. Indeed, the Japanese institution involved has been awarded centre of excellence status in Japan and has been involved with large projects in multimedia content and large-scale knowledge organisation for a considerable time.

The 3 days workshop gave all the participants the opportunity to present their best research results and discuss possible synergies. It is without doubt that meeting and discussing each side's projects and research achievements face-to-face will foster joint cooperation between all the participating groups and an excellence in future research that can exploit the strengths and knowledge of each side.

Final report, slides of the talks, recordings and more information can be found on the following website dedicated to this workshop:



<http://www.im2.ch/jp-ch-workshop-2007/>

Discussions are now in progress to develop formal collaborative activities

IM2 Scientific Advisory Board met on September 24

As announced during the last panel review (November 2006), a new Advisory Board was planned for 2007 and has indeed been realised early 2007. After having nominated around 20 potential candidates, the members of the Technical and Steering Committees decided to setup a Scientific Advisory Board composed of five people. For continuity reasons, it is composed of two previous review panel members (Prof. Steve Renals and Prof. Gerhard Rigoll) and three new (female) prominent scientists more oriented (to further accommodate some of the panel's remarks) towards multimodal interaction and user-centric computing (Dr. Carol Peters, Dr. Sharon Oviatt, and Dr. Catherine Pelachaud). This Advisory Board was already activated for the review of the last round of White Papers. It also met on 24 September 2007 to review current progress, and to discuss the current report, as well as the last panel review report. The meeting included an overview of the IM2 NCCR given by Prof Bourlard, a short overview and discussion of each IP (given by the IP heads), three more detailed technical talks (given by Dr A Liskowska, Dr A Popescu-Belis and Dr J-M Odobez), and a lengthy period of discussion about the future plans and directions for IM2.

SAB Overview Report

The advisory board agreed that IM2 is a high quality project which has made, and continues to make, a major impact both structurally and scientifically:

- Scientific. The project is a major player internationally in the broad area of multimodal processing. This has been manifested primarily through a very large number of high quality papers and the public release of an annotated multimodal corpus of human interaction in meetings unprecedented in its size and quality.
- Structural. The structural impact is extremely impressive—IDIAP has grown substantially during the period of the NCCR, while continuing to increase research quality. IDIAP's new facility highlights the exceptional growth stimulated by the NCCR.

An additional measure of the impact of IM2 is the growing number of IM2 PhD graduates at leading institutions worldwide.

IM2 has carved out a research area in the multimodal processing of human communication. During the course of IM2 this area has grown in importance, in terms of the increasing number of scientific teams researching and publishing in the area, and IM2 has maintained a place at the forefront. The aspects of IM2 research are of particular note:

1. Strong unimodal technologies (speech recognition, vision, etc.) that underpin multimodal processing and content extraction
2. Multimodal processing approaches based on state-of-the-art machine learning
3. A strong focus on evaluation at all levels, including HCI and browsing

Finally, IM2 has a clear and consistent research vision, based on the multimodal capture, analysis and interpretation of human-human communication, which strongly leverages the IM2/AMI corpus. This is one of the strongest aspects of the project. The main aspects covered in the discussion between the Advisory Board and the IM2 representatives concerned multimodal processing, the multimodal database, user centric research and management issues.

The full SAB report, the recordings of the IP reviews and talks are available on the IM2 intranet:

- <http://www.im2.ch/intranet/ips/im2sab07-videos> and
- <http://www.im2.ch/intranet/ips/documents/SAB-Report-2007.pdf>

Reminder of the IM2 Scientific Advisory Board Mission

The primary mission of the IM2 Scientific Advisory Board (SAB) is to offer advice to the IM2 Management team on the NCCR activities, including general scientific issues, research orientations, and also potential technology transfer issues. The main task of the IM2 SAB is thus the assessment of the IM2 activities and, on this basis, the counselling of the IM2 management with regard to an innovative development of the IM2 research work. The opinions and the recommendations (report) of the Scientific Advisory Board are to be dealt with confidentially, but will be forwarded to the Swiss NSF (SNSF) for information. The IM2 SAB will also be invited to review the recommendations of the SNSF review panel and, if appropriate, to issue comments or suggest appropriate measures. When necessary, the SAB may also be consulted remotely on specific issues including the evaluation of ongoing projects and/or project proposals. The assistance of individual members may also be requested on a case by case basis by the Management team when required, although this will remain occasional

IM2 Scientific Advisory Board members:

1. Prof. Carol Peters, Italian National Research Council (ISTI-CNR), Institute for Information Science and Technologies, Pisa, Italy
2. Prof. Gerhard Rigoll, Technischen Universität München, Germany
3. Prof. Steve Renals, University of Edinburgh, School of Informatics, Director of the Center for Speech Technology, Research, University of Edinburgh, UK
4. Prof. Sharon Oviatt, Adapx, Headquarters Adapx, 821 Second Avenue, Seattle, WA 98104
5. Prof. Catherine Pelachaud, Professor, IUT de Montreuil, Université de Paris 8, France

IM2 meets the NCCR for Affective Sciences to discuss possible collaboration

On Monday, October 1, 2007, a delegation of researchers from the NCCR for Affective Sciences (<http://www.affective-sciences.org>) went on a day's study outing to the canton of Valais. In the course of the morning, a face-to-face meeting took place between researchers of IM2 and the Centre for Affective Sciences at IDIAP, Martigny.



The purpose of this meeting was to suggest possibilities of future collaboration, and in this it was a success. The taking into account of

emotions aroused definite interest with our IM2 scientists, who have not yet really integrated this factor into their work. Topics for common investigation were suggested, such as applying methods and categories for encoding



of body movements and vocal gestures, evaluation of the influence of emotions during business meetings, and sharing databases (GeMEP, IM2/AMI). A more detailed agreement is to be discussed shortly as part of the organization of a common workshop being planned for early 2008.

2007 Call for Proposals Results

At the end of 2006, the Technical Committee (TC) decided not to spend all the remaining money of phase I in order to open early 2007 a call for proposals focused mainly on «multimodal interaction, user evaluation and database user centric» as recommended by the Review Panel in November 2006. Despite the reduction of budget decided by the SNSF (April 2007), the TC decided to go ahead and invest the remaining money (~275'000 CHF) in this new 2007 call for proposals.

By opening this call, IM2 sought not only to attract new partners in view of optimizing the internal resources and reinforcing the IM2 themes of research for the next few years, but also wished to foster the competition inside the IM2 community.

Selection criteria focused mainly on:

- The themes of proposals: Multimodal Data Analysis and Management, Multimodal Human-Machine Interaction, Multimodal applications and their evaluation.
- The high scientific quality
- The collaborative aspects of the project across two or more groups located in different institutions.

- The generic goals of IM2: matching funds, visibility, technology transfer and advancement of women

Each project proposal was evaluated anonymously by four people (two IP heads of two different institutions and two IM2 Scientific Advisory Board members). As result, the four following projects (start in January 2007) will be funded for one year, with possibility of renewal and full integration within IM2, conditional on: (1) Performance, (2) Integration in IM2, and (3) Internal competition:

1. A.Drygajlo, LIDIAP, "Temporal reliability of features and models for multimodal person recognition".
2. V.Pallota, University of Fribourg and F.Kaplan, EPFL, "ACTIMEET: Active participation in meeting meta-data production through wearable sensors and interactive artifacts and furniture".
3. J-P.Thiran, EPFL, John Dines, IDIAP, "Multimodal audio-visual speech recognition: IM2 database acquisition and system development and integration".
4. A.Billard, EPFL, "Analysis of the modalities regulating shift of visual attention in listener and speaker during dyadic and triadic conversations"

IM2 invited to the Chorus Event on National Initiatives with the Support of the European Commission, Geneva, October 2007



This highly successful Workshop was organised in cooperation with the European Commission. The event brought together the technical,

administrative and financial representatives of the various national initiatives (included IM2), which have been established recently in some European countries to support research and technical development in the area of audio-visual content processing, indexing and searching for the next generation Internet using semantic technologies, and which may lead to an internet-based knowledge infrastructure.

The objective of this workshop was to provide a platform for mutual information and exchange between these initiatives, the European Commission and the participants.

Top speakers were present from each of the national initiatives. There was time for discussions with the audience and amongst the European National

Initiatives. The challenges, communalities, difficulties, targeted/expected impact, success criteria, etc. were tackled. This workshop addressed how these national initiatives could work together and benefit from each other.

The Chorus event on National Initiatives took place in Geneva, Switzerland on 10th of October 2007. The meeting was held at the headquarters of the European Broadcasting Union (EBU).

The presentations from this event are available online:
<http://www.ist-chorus.org/geneva---october-10th-07.php>

CHORUS is a European Coordination Action which aims at creating the conditions of mutual information and cross fertilisation between the European projects dealing with Multimedia Content Search Engines. National and international initiatives are also included in Chorus action.

GOOGLE Portrait

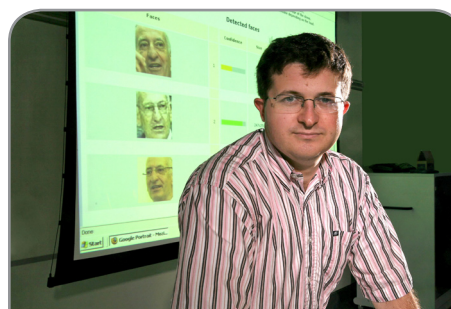
SNSF SELECTS IDIAP AND IM2 AS PICTURE OF THE MONTHS FOR SEPTEMBER 2007

Software detects faces in digital images

Searching for a picture of someone on the internet using search engines such as Google Image does not always deliver the expected results because the engines rely on the text accompanying the pictures to generate their results. Scientists working on the IM2 National Centre of Competence in Research, which is based at the IDIAP research institute in Martigny, have found a solution. They have developed a software capable of detecting faces in digital images. Their system, which has been christened Google Portrait, was launched in February, several months before a face detector bearing the Google name first appeared on the Internet. Google Portrait is suitable for biometric, videoconferencing and surveillance applications.

End of September, GOOGLE Portrait was the SNSF Picture of the month. More than 25 Swiss newspapers and 25 websites published an article describing this new IM2 tool.

Try Google Portrait: <http://www.idiap.ch/googleportrait/>



Sébastien Marcel führt seine Software «Google Portrait» vor.
Foto: © Alain Herzog / SNF
Abdruck mit Autorenangabe und nur zu redaktionellen Zwecken.
Sébastien Marcel effectue une démonstration du logiciel Google Portrait.
Photo: © Alain Herzog / SNSF
Reproduction autorisée avec mention de l'auteur et uniquement dans un but rédactionnel.



Upcoming Events

IM2 will be actively involved in the organization of CIVR 2009

The 8th International Conference on Image and Video Retrieval (CIVR 2009), the premium event in the Multimedia Information Retrieval domain, will be organized in July 2009 on the island of Santorini, Greece. Stéphane Marchand-Maillet (UniGE, Viper – head of IM2.MCA) will be general co-chair with Dr. Yiannis Kompatsiaris (ITI, Greece). Eric Bruno (UniGE, Viper) will be Special Session co-chair and Daniel Gattica-Perez (IDIAP) will be Program co-chair.

CIVR 2009 will seek a co-sponsorship agreement with the ACM. It will feature original sessions such as the VideOlympics initiated this year. We hope to see a strong participation of IM2 members to the conference.

<http://www.civr2009.org/> - <http://www.civr.org/>

Partner News

Flying colours on a blue Monday...

We have already reported in a previous (N°40) Newsletter about the ETH spin-off Kooaba. Kooaba turns real objects into hyperlinks via the mobile phone's camera. Taking a picture of selected objects suffices to get more information about these objects or about related products. October saw the first critical test for the application. 'Le Matin Bleu' ran a digital slapstick, where readers could win prizes, by photographing the corresponding products on a page in the magazine. In the case of '20 minutes', downloaded multimedia galleries enhanced the paper article of interest. Given that mobile phone cameras are not always of the best quality, and that many of the photos taken were noticeably blurred and taken with occlusions and irrelevant clutter, the test was a big success. More than double the number of people participated than what the advertisement departments of the journals had expected. Yet another piece of IM2 technology seems set for the market.

School on multimedia search engines

Denis Lalanne from the DIVA group of the University of Fribourg, organized in October 2007 a school on multimedia search engines (part of the 3ème cycle romand in Computer Science). The major goal of this school was to brush the state-of-the-art on the current research trends in multimedia indexing and retrieval techniques and to bring out the major challenges related to the creation of multimedia search engines. Audio and video analysis, indexing and evaluation frameworks, speech driven information retrieval, music information

retrieval, social signal analysis, human factors in image indexing, and multimedia browsing and visualization techniques, were among the main topics tackled during these two days. This event was a success thanks to the tutorials given by internationally recognized researchers: Georges Quenot, Marcel Worring and Andreas Raubers. Numerous other talks have been given during these 2 days events, from Fabio Crestani, Alex Jaimes, Alessandro Vinciarelli, Robert van Kommer and Maurizio Rigamonti. The full program and slides are available on:

<http://diuf.unifr.ch/diva/3emeCycle07/>

Awards

EPFL/LIDIAP

October 3, the European Biometrics Forum announced that the EBF European Biometric Research Award 2007, which recognizes the significant contributions made in the field of biometrics research in Europe, has been awarded to Mr Krzysztof Kryszczuk, a postgraduate student from the Swiss Federal Institute of Technology Lausanne (EPFL) in Switzerland and involved in IM2.MPR.RELIABLE.

The winning Research Paper by Mr Kryszczuk was titled "Improving biometrics verification with class-independent quality information" and focused on a new, holistic view on the role of signal quality information on biometric classification. The winner of the EBF European Biometric Research Award 2007 received a €5,000 honorarium and a commemorative medal.

EPFL/STI

Effrosyni Kokiopoulou (EPFL/LTS4) is one of the 8 top PhD students selected for the 2007 Watson Emerging Leaders in Multimedia Workshop organized by IBM Research.

<http://domino.research.ibm.com/comm/research.nsf/pages/r.multimedia.workshop2007.html>

UniFr

Dominique Guinard from the University of Fribourg received the Fritz Kutter prize (<http://www.kutter-fonds.ethz.ch/>), awarded to the best Swiss master thesis in computer Science in 2007. His master thesis was performed in collaboration with the University of Lancaster and was entitled: "RelateGateways: An Architecture to Enable Spontaneous Mobile Spatial Interaction with Pervasive Services".

Selected publications

Non-linear spectral stretching for in-car speech recognition

W. Li and H. Bourlard

Proc. Interspeech 2007 Eurospeech, pp. 1122-1125, Antwerp, Belgium, 2007

An Analysis of Sentence Segmentation Features for Broadcast News, Broadcast Conversations, and Meetings

S. Cuendet, E. Shriberg, B. Favre, J. Fung, and D. Hakkani-Tür

SIGIR Workshop on Searching Conversational Spontaneous Speech, Amsterdam, Netherlands, 2007

Quasi text-independent speaker verification based on pattern matching

M. Gerber, R. Beutler, and B. Pfister

In Proceedings of Interspeech, pages 1993-1996, ISCA, 2007

Hidden Markov Models for Spoken Signature Verification

A. Humm, J. Hennebert and R. Ingold

In proc. of IEEE Conference on Biometrics: Theory, Applications and Systems (BTAS'07), Washington DC (USA), September 27 - 29 2007

Using audio and video cues to classify the most dominant person in a group meeting

H. Hung, D. Jayagopi, C. Yeo, G. Friedland, S. Ba, J.-M. Odobez, K. Ramchandran, N. Mirghafori, and D. Gatica-Perez

Proc. ACM Int. Conf. on Multimedia (ACM MM), Augsburg, Sep. 2007

Broadcast News Story Segmentation Using Social Network Analysis and Hidden Markov Models

A. Vinciarelli and S. Favre

Proceedings of ACM International Conference on Multimedia, pp. 261-264, Augsburg (Germany), 2007

Efficient Mining of Frequent and Distinctive Feature Configurations

T. Quack, V. Ferrari, B. Leibe and L. Van Gool

ICCV 2007

Combining multimodal preferences for multimedia information retrieval

E. Bruno, J. Kludas, and S. Marchand-Maillet

In Proc. of International Workshop on Multimedia Information Retrieval, Augsburg, Germany, September 2007

International Workshop on Human-Centered Multimedia: Overview

A. Jaimes and N. Sebe

proceedings ACM Multimedia 2007 workshop on Human-Centered Multimedia, Augsburg, Germany, Sept. 2007

An ego-centric and tangible approach to meeting indexing and browsing

D. Lalanne, M. Rigamonti, F. Evequoz., B. Damas, R. Ingold

in Popescu-Belis A., Bourlard H. & Renals S. (eds.), Machine Learning for Multimodal Interaction IV, LNCS, Springer-Verlag, Berlin/Heidelberg, 12 p.

Visuo-Spatial Attention Frame Recognition for Brain-Computer Interfaces

F. Galán, J. Palix, R. Chavarriga, P.W. Ferrer, E. Lew, C.A. Hauert, and J. del R. Millán

1st International Conference on Cognitive Neurodynamics. Shanghai, China