

Newsletter

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News

SLT 2006

The first International Workshop on Spoken Language Technology (SLT), sponsored by IEEE and ACL, will be held at the Aruba Marriot, December 10-13, 2006

Additional information:
<http://www.slt2006.org/>

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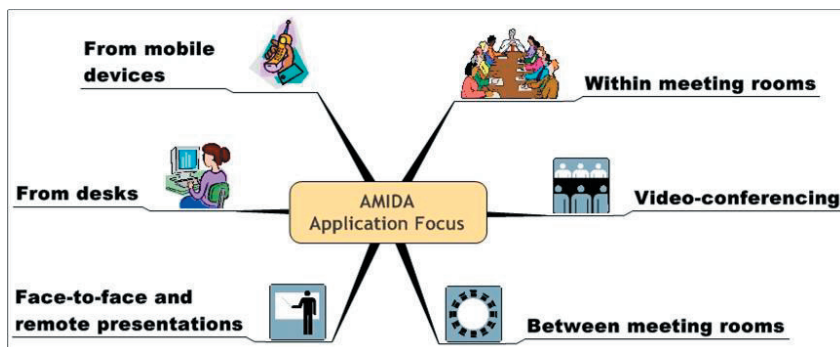
AMIDA, a project of the AMI Consortium, starts on October 1, 2006

AMIDA (Augmented Multi-party Interaction with Distance Access), a new European Integrated project (FP6-IST) of the AMI consortium, and a direct follow-up project of AMI, starts on October 1, 2006, for a new duration of 36 months. Submitted to the FP6-2005-IST-5 call for proposals, and submitted on 21 September 2006 at 16:31:36 CEST (for an official closure time at 17:00), AMIDA was positively evaluated, followed by an hearing on 14 November 2005, resulting in a very positive evaluation report, issued by the European Commission on 12 December 2005, and an invitation for contract negotiation on 24 February 2006. The AMIDA Technical Annex and contract negotiation were finalized in August 2006, with an official start of

the project on 1 October 2006.

AMIDA is a direct follow-up of the AMI project, although focusing on even more challenging tasks related to remote communication (instead of face-to-face communication in AMI), especially targeting remote meeting assistants, online meeting aid, chair person's assistant, and enhanced videoconferencing. Compared to AMI, AMIDA is thus moving from:

- Archived to live meetings
- Face-to-face to remote
- Expensive to commodity (low quality) recording devices and bandwidth constraints
- Offline processing to online processing.



This new focus obviously raises many new challenges that will have to be addressed within AMIDA, including:

- Commodity hardware (sensors) and lower bandwidth make speech recognition, computer vision, etc, much harder
- Communication behaviors, differ between remote interaction and face-to-face interaction, and depending on group size.
- Large amounts of unannotated data: while still relying on the AMI corpus for formal evaluation, we will also face a large amount of new (remote) data, which will have to be processed.

We shall investigate how this large amount of unannotated data can be used (in an unsupervised way) to further improve state-of-the-art systems.

- Study of long-term collaboration patterns, while AMI was mainly focusing on single, or short sequences of, face-to-face meetings.
- Realtime audio-video processing
- Integrating additional sensors
- Full integration of all the information available

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Cover Story

AMIDA, a project of the AMI Consortium, starts on October 1, 2006 (CONTINUED FROM PAGE 1)

In addition to the above fundamental issues, the following research and development challenges will also be addressed in AMIDA:

- Human-computer interfaces and systems with anticipatory behaviors (e.g., adapting to the individual, the project, the time and other circumstances).
- Easily customized/personalized environments that simulate face-to-face experiences.
- Systems for automatic creation and rapid query (searching and browsing) of large and expanding repositories of multimodal information based on collaborative experiences or individual memories that are appropriate to the challenge or task facing a group.

To achieve these objectives, AMIDA will directly leverage upon the successful achievements of the AMI project (ending on 31 December 2006) in multiple disciplines, including unconstrained speech recognition, visual scene analysis, modeling individuals and groups through the joint processing of multiple information channels, and structuring, indexing and summarizing the multimodal communication scenes.

AMIDA has also raised the exploitation transfer potential through genuine integration of the AMIDA industrial partners collaborating on common prototypes and applications. Finally, further building upon the AMI "Community of Interest" (CoI), AMIDA will also actively engage beyond the consortium to spread awareness and knowledge.

To reflect the continuity (and complementarity) of the AMI and AMIDA efforts, the web site www.amiproject.org has been redesigned to present AMI as an overarching community of research partners and associated organizations united by a common vision of enhancing human-human (group) communication through advanced modeling and understanding of communication scenes

- To enable meetings to have better outcomes.
- To support collaboration during team meetings.
- To enable more efficient remote meetings and more efficient series of meetings of the same group.
- To determine how well technology improves access to audit information, such as the decisions made in previous meetings.

Embracing AMI technologies – RMA (REAL-TIME/REMOTE MEETING ASSISTANT)

Our design of the Real-time/Remote Meeting Assistant, RMA in short, started with a series of user studies; followed up by several



conceptual designs; and concluded with an initial design. The above photo offers a general impression of our design. In the following paragraphs, we will introduce the functions of the RMA in details. All the functions we mentioned are not implemented yet. The design is open to any further refining and modifications.

Platform and GUI

To minimize the distance between cognitive space and action space, we decided to overlap the augmenting information onto the (real-time) video of the meeting. Furthermore, we enhanced the co-located party's sense of presence by 1) stitching three large displays together with certain angle, and 2) scaling the size of the attendants as close to the reality as possible. With advanced video processing technique, it is possible to "cut" people out of the background and process separately.

Project Browser

We discovered from our user studies that during one meeting, decisions, solutions, discussions from previous meetings can be very important and influential. In other words, the system should support not only one meeting but also the history of the whole project. That is the reason for us to design a project browser, PB in short. As illustrated in figure 1, the PB supports meeting contents retrieval and project document sharing. Under each selected project, there are three panels: 1) meeting minutes, 2) action points and 3) meeting video. All the three panels are correlated and synchronized. For instance, from one particular action point on the action point panel, users can retrieve the source of the action point: 1) the discussion led to the action point in the correspondent meeting minutes, or 2) the video clip of the conversation led to the action point.

Meeting Browser

Based on the JFerret browser and the user studies, we selected six most frequently used or wanted information during meetings: 1) meeting minutes, 2) slides, 3) agenda, 4) eye-contact view of the meeting attendants, 5) scratch, and 6) shared documents. It is limited by human capacities that people can only focus on one thing at a time. Showing all the information at the same time is not necessary. From the online survey, we also concluded that participants preferred the control of shared information. Therefore, we decided that user should have the full control of what to present, when and how. As illustrated in the above photo, Users can choose which panels to open in which size and at which location on the screens.

Newsletter

Success of AMI partners in NIST 2006 Speaker recognition evaluation

AMI partners BUT (Czech republic) and TNO (Netherlands) recorded important success in NIST speaker recognition evaluations organized in spring 2006. Their system scored among the best in tough competition of 37 academic and industrial laboratories from all over the world (NIST rules prohibit to disclose the exact position of their system).



Pavel Matejka (BUT), David van Leeuwen (TNO), Niko Brummer (Spescom Data Voice), Petr Schwarz and Lukas Burget (both BUT) on Puerto-Rico beach.

The system was developed within «STBU» consortium - BUT and TNO in cooperation with South-African partners: company Spescom Data Voice and Stellenbosch University. It included a combination of 3 acoustic classification techniques: Gaussian

mixture models (GMM) classifying directly speech features, Support vector machines (SVM) processing super-vectors of GMM means and a third sub-system based on SVM-classification of MLLR adaptation matrices from LVCSR system.

Great care was given to transmission channel compensation and score normalization: the successful system includes techniques such as feature mapping, eigen-channel adaptation and nuisance attribute projection (NAP). The scores are normalized by classical t-norm technique and fusing of systems was performed using logistic linear regression.

Speaker identification and recognition has primary use in security and defense (for example for detecting a suspect in hundreds of telephone recordings) but is also useful for mining information in huge audio archives of meetings, or TV and radio broadcasts.

Work on the system was primarily supported by European AMI project (IST 6th framework programme) with contribution of Czech Ministry of Defence and Dutch Ministry of Defence. Powerful computing resources in Brno were supported by CESNET - non-profit organization unifying Czech Universities, responsible for high-speed University backbone and for research in network- and media-related technologies.

The developers of the system are: Pavel Matejka, Lukas Burget, Petr Schwarz and several students from BUT, David van Leeuwen from TNO, Niko Brummer from SDV and Albert Strasheim from Stellenbosch University.

* Honza Cernocky, responsible of BUT Speech@FIT group, August 28th 2006

New White Paper about Applications for AMI Technologies

In order for companies to purchase the products which incorporate and leverage core AMI technologies, the employees and users of these new solutions, the people who are working with meetings every day, need to experience productivity increases. A true return on investment analysis needs to be based on use cases in real world settings.

The goal of this white paper is to take what is currently known about meetings and to overlay the AMI vision of the future. It begins with a short description of the project and our research approach with statistical machine learning. Through the user scenarios, the paper illustrates how AMI technologies can have a positive impact on meetings.

Applications using AMI technology covered by this document include the ability:

- to prepare better for upcoming meetings,
- to review parts of meetings in progress or past meetings missed,
- to analyze behaviors and positions taken by individuals or groups, and
- to attend multiple meetings without missing critical elements in any.

At a management level, having technologies which analyze verbal and non-verbal content and communications could be integrated with other enterprise managements systems to:

- be the basis of meeting behavior/methods training programs, even permitting self-analysis by participants,
- improve team construction based on team members' past meeting behaviors,
- reduce risk of disclosures and delays caused by underlying conflicts, and
- recommend strategies for human resource utilization across multiple projects and teams.

Printed copies of the white paper are being distributed at industry events this fall and an electronic version (PDF) is available at http://www.amiproject.org/business-portal/pdf/Applications_AMI_Technologies.pdf.



News and Upcoming Events

The Future with the Club of Amsterdam

On October 5, 2006, the AMI Project and the University of Sheffield's Institute of Work Psychology will be featured at the first Club of Amsterdam 2006-2007 Season event. The theme of the special event is The Future of Meetings.

- **John Grüter**, Change Agent and Principal of Digital Knowledge (Amsterdam), will be the evening's host and moderator. The evening will open with presentations.
- **Christine Perey**, AMI technology transfer specialist
Introduction
- **Des Leach**, Research Fellow, Institute of Work Psychology, University of Sheffield
Meetings and their Participants - the Balancing Act between Business and Personal Factors
- **Pierre Wellner**, Senior Scientist, IDIAP Research Institute, Martigny, Switzerland
The Whole Meeting in Half the Time
- **Wilfried Post**, Researcher, TNO Human Factors
Join Multiple Simultaneous Meetings Without Neglecting Your Personal Priorities

Demonstrations of AMI technology and an interactive panel discussion will follow.

For more information, go to <http://www.clubofamsterdam.com/event.asp?contentid=631>

About the Club of Amsterdam

The Club of Amsterdam is an independent, international, future-oriented think tank involved in channelling *preferred futures*. It involves those who dare to think out of the box and those who don't just talk about the future but actively participate in shaping outcomes.

The Club of Amsterdam organizes events, seminars and submits on relevant issues and publish findings & proceedings through various off-line and online media channels. Their goal is to become a global player and catalyst for innovation in industries, science and society.

The Club of Amsterdam is a not-for-profit foundation registered in The Netherlands.

HCM 2006

1st International Workshop on Human-Centered Multimedia October 27, 2006, Santa Barbara, USA - in conjunction with ACM Multimedia 2006

General information

Human-Centered Computing (HCC) lies at the crossroads of multiple disciplines and research areas that are concerned both with understanding human beings and with the design of computational methods. Researchers and designers of HCC methods and systems include engineers, scholars in psychology, cognitive science, sociology, and graphic designers, among others. Research in HCC deals with understanding humans, both as individuals and in social groups, by focusing on the ways that human beings adopt, adapt, and organize their lives around computational technologies, and on how the development of computational technologies can be informed by human aspects (culture, social setting, human abilities, etc.). Human-Centered Computing addresses problems that the field of Human Computer Interaction (HCI) does not generally address. In HCC the focus is not only on interaction, but also on the design of algorithms and systems with a human focus from start to finish.

This multidisciplinary workshop will focus on the multimedia aspects of HCC and introduce key concepts, discuss theoretical frameworks and technical approaches, challenges, research opportunities, and open issues in multimedia interaction, content analysis, and content production. We invite researchers and designers from various disciplines to submit original technical contributions and position statements to explore and define radical ways in which Human-Centered Multimedia can revolutionize computing. In order to break away from the traditional workshop format, a strong emphasis will be placed on discussions leading to specific goals set by the workshop organizers.

Workshop chairs

- Daniel Gatica-Perez, IDIAP, Switzerland (gatica_at_idiap.ch)
- Alejandro Jaimes, FXPAL Japan, Fuji Xerox (ajaimes_at_ee.columbia.edu)
- Nicu Sebe, University of Amsterdam, The Netherlands (nicu_at_science.uva.nl)

More informations: <http://staff.science.uva.nl/~nicu/HCM2006/>

UIST 2006

The nineteenth annual ACM Symposium on User Interface Software and Technology will be held on October 15 - 18 in Montreux, Switzerland.

UIST is the premier forum for innovations in the software and technology of human-computer interfaces. Sponsored by ACM's special interest groups on computer-human interaction (SIGCHI) and computer graphics (SIGGRAPH), UIST brings together researchers and practitioners from diverse areas that include traditional graphical & web user interfaces, tangible & ubiquitous computing, virtual & augmented reality, multimedia, new input & output devices, and CSCW. The intimate size, the single track, and comfortable surroundings make this symposium an ideal opportunity to exchange research results and implementation experiences.

This year UIST is co-located with the IEEE Wearables symposium ISWC 2006 which runs the week before.

A welcome reception will be held Sunday evening October 15th after the Doctoral Symposium, and the technical program starts on Monday the 16th, featuring full-length papers, technotes, posters, and demonstrations.

More informations : <http://www.acm.org/uist/uist2006/>

NEW AMI WEBSITE

Communications must never rest. In order to convey the latest AMI Consortium, AMIDA launch and AMI project conclusion, a new web site has been launched. The web site has four mini portals: the Business Portal, two scientific portals (AMI and AMIDA) and a portal with descriptions of technologies being demonstrated and screen movies in some cases.

The site also has a new look and feel and has been built on a content management system which reduces the overhead associated with posting new content, permitting more frequent updates and to establish a living information repository about the AMI research partners and for the different target audiences. Feedback on the web site is always welcome. Send e-mail to cperey@amiproject.org



www.amiproject.org