



AMI Newsletter

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2005-02-20

MLMI'04 - The workshop recordings are now available on-line at : <http://mmm.idiap.ch/mlmi04/>

2005-02-25

The MLMI'04 proceedings are now available online at <http://www.springeronline.com>

2005-03-24

The 5th issue of the AMI Newsletter, the first with the new layout, is online.

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Workshop organized by AMI Focuses on transfer of emerging technology to commercial products

BRUSSELS, 7-8 MARCH 2005

On March 7 and 8, the AMI project united a group of over 50 people with very different but complementary skills to learn about and to foster the technology transfer process. Through a series of presentations and panel discussions, AMI researchers, technology transfer specialists and business managers with a common interest in the enhancement of technology-assisted meetings and communications compared experiences and offered their recommendations to one another.

Delegates at the first AMI Technology Transfer Workshop learned about the latest research developments from subject matter experts such as Dr. Jun Miyazaki of Fuji Xerox who described the research he is involved with in Japan. University of Edinburgh Professor and AMI co-manager, Dr. Steve Renals summarized the progress of AMI research in the first year. Representing the community of people currently offering new technologies for enhanced multimedia meetings to the North American market, Stan Rosenchein, president of Quindi, described why and how it was decided that the original solution the company prototyped, a meeting capture appliance and server technology, would not be commercialized. Instead, Quindi has developed and is currently selling Meeting Companion, a Windows software application for personal meeting capture. Jim Crabtree, president of Wave3 Software, shared his experience in two very different and important positions: as an investor in new technology ventures and as the senior executive of a young company dedicated to the commercialization of a real time multimedia communications solution. In an equally fascinating and well-delivered presentation, Chuck House, Director of Intel's Collaboratory and formerly manager with HP Laboratories, explained how, based on his experience, research and product development groups can profoundly change a company's direction. The experiences shared by Dave Martin, co-founder and president of SMART Technologies, illustrated how important it is for new products (or existing products with new technologies) to have appropriate



The whole workshop was recorded, to provide further raw material for meeting processing.

distribution channels in order for them to reach their ultimate customers.

There were also several contributions by people who are actively building bridges between research and product communities. Boris de Ruyter from Philips described how the concepts for incorporating new technologies into a home environment are implemented in a simulated Home Laboratory. Bernard Gander, Vice President of Corporate Business Development at Logitech spoke about his company's current collaboration with small as well as large companies and research institutes around the world. The program put in place by Logitech helps groups with promising concepts or technologies gain exposure to developers of commercial Logitech products. A panel of participants including AMI project advisor Jim Flanagan of Rutgers University and moderated by Pierre Kladny, deputy director of LODH, concluded the event with an animated discussion of their experiences with the financial challenges of technology transfer.

In addition to high quality presentations and large group discussions, the workshop provided a time for small group demonstrations of AMI-related technologies and opportunities for workshop participants to casually network among themselves. We believe the workshop helped some previous acquaintances rekindle their collaboration and marks the beginning of what we anticipate will be many new and mutually-beneficial relationships. For more information on the workshop, the list of participants and supporting materials, please visit the workshop web site at <http://www.amiproject.org/tw05/index.php>

Cover Story



The University of Twente (UT)

CENTRE FOR TELEMATICS AND INFORMATION TECHNOLOGY (CTIT)



The University of Twente (UT) is located in the eastern part of the Netherlands, close to the German border and near the city of Enschede with its 152.000 inhabitants. The University of Twente is an entrepreneurial research university. It was founded in 1961 and offers education and research in areas ranging from public policy studies and applied physics to biomedical technology. The UT is the Netherlands' only campus university. In cooperation with IBM/Cisco Systems and Intel, the University of Twente has built a Wireless LAN (WLAN) infrastructure of unparalleled dimensions in Europe. It consists of 650 wireless access points, is used by more than 8,500 staff and students and covers all of the 140 hectares of the university campus.

The research of the university is concentrated in research institutes. Among them is the Centre of Telematics and Information Technology (CTIT) with over 325 researchers. Integration of technology-based research and its application in specific domains is a clear focus of CTIT. From this research institute the HMI (Human Media Interaction) group participates in the AMI project. The group is working on issues regarding multimedia systems and multimodal interaction. The core of the research looks at different modalities that can be used to provide input, at the intelligent interpretation and smart response of the system and at different modalities in which this response is provided. Crucial in this scenario is the user as the one who provides the input (intentionally or not) and who is provided with the output.

The research on multimodal media covers a broad range of media and scenario's of use (desktop, mobile, VR and ambient) but the focus is always placed on natural forms of interaction that relate to new ways of using computing devices. In the Human Media Interaction group, inhabited physical and augmented reality environments where users can interact with intelligent agents using multiple modalities (speech, natural language, haptics and gestures) form an important domain of research. Multi-modal retrieval and information extraction is also an important theme that has been worked out the last couple of years. Themes that more recently emerged are embodied conversational agents and research into the modeling of emotions during interaction.

Apart from UT and CTIT funding HMI research is made possible by participating in various Dutch and European research projects. AMI is one of them, but there are also important projects on multimodal question-answering systems, embodied presentations, virtual storytelling, information retrieval and extraction, machine learning, personalization and interface design. Recently acquired projects, developments in interest and vision of the future make it clear that in the near future HMI research will address issues that arise in the context of multi-party interaction in smart environments, where no real difference can be made between party members that are human or artificial (virtual humans, intelligent agents, humanoid robots, smart objects). HMI is also member of two European Networks of Excellence: HUMAINE (Research on Emotions and Human-Machine Interaction) and INTUITION (Research on Virtual Reality and its Applications).



Some educational activities that need to be mentioned are HMI's responsibility for a Minor on "Media, Art, & Technology" in the UT's education programme and, something we are very proud of, the UT Master's study "Human Media Interaction". In this Masters the AMI research themes are introduced to our students.

International workshops are (co-)organized on a rather regular basis, both in Twente and as part of major conferences. The workshops are very much related to AMI themes. Recently a workshop on Social Intelligence Design was organized and in the Spring of 2005 a workshop on Multi-party Interaction is organized during the ACM CHI (Computer Human Interaction) conference. For more information about the Human Media Interaction (HMI) group of the University of Twente contact Anton Nijholt (anijholt@cs.utwente.nl) and/or visit our website: <http://hmi.ewi.utwente.nl/>.

RealVNC

CAMBRIDGE, UK

Company profile

RealVNC is a UK company founded in 2002 by a team from the world-leading AT&T Laboratories in Cambridge. The company was established to commercially develop, enhance and promote VNC. VNC (Virtual Network Computing) software makes it possible to view and fully-interact with one computer from any other computer or mobile device anywhere on the Internet.



VNC software is cross-platform, allowing remote control between different types of computer. For ultimate simplicity, there is even a Java viewer, so that any desktop can be controlled remotely from within a browser without having to install software.

Commercial strategy

RealVNC was formed during the startup ice-age of the early 21st Century. At a time of reluctant venture capital investment and rock-bottom company valuations, RealVNC settled on an old-

fashioned business strategy. Disillusioned with the whole startup lifecycle, with its often false requirement for an early return for investors, the company decided to make something, sell it and then re-invest profits for long-term growth.

The RealVNC strategy is paying off, with a profitable company which has grown to a staff of 10 by the end of its third year. This has been possible because a version of VNC was made freely available under GPL open source license in 1998. Since then it has been downloaded many millions of times, and the current user-base is estimated at over 50 million.

The software has also appeared on numerous magazine cover disks, and for several years all popular versions of Linux have included VNC. It is in active use by many millions in industry, commerce, education and at home. Virtually all Fortune 500 companies use VNC, and installations of VNC across thousands of workstations are commonplace. These users form a ready-



made source of market analysis and customer requirements. More importantly, they form a ready and willing source of revenue.

RealVNC Products

The RealVNC team has re-designed and re-implemented the VNC system. Compatible with the original protocols, the system is now an extremely flexible, modular and scalable platform for vertical development, integration and licensing. VNC Enterprise Edition is a robust security enhanced version for commercial sale. Complete with sophisticated deployment tools, many thousands of enterprises have so far chosen to enjoy the benefits of this product.

The AdderLink IP unit is a KVM-over-IP product developed jointly with Adder. Market leading KVM (Keyboard, Video, Mouse) technology is combined with the flexibility and security of VNC, creating a best-of-class product.

AMI project

RealVNC is pleased to take part in the AMI project, which has allowed it to explore an aspect of VNC at an earlier stage than it might have otherwise been able to. Recording a live VNC session and later replaying or browsing it has many applications, from call-

centre monitoring, product demonstration, debugging and testing, security audit and many more.

In the context of the AMI project, RealVNC is developing this technology to record any computer screen which is used, shared, displayed or broadcast within the context of a meeting. Keystrokes and mouse-events are also recorded, and can be used to build a searchable word index into the recording. This provides another context and searchable query into the meeting scenario.

The RealVNC component of the AMI project is modest, amounting to a little over 1% of the project costs over the first three years. However, much has been achieved through the use of undergraduate internships to complement the effort of full-time staff assigned to the project. RealVNC has already identified two possible exploitation paths for the VNC recording and replay technology, and is jointly developing a prototype with a major supplier of Bluetooth technology.



Scientific Progress Report

THE FOLLOWING GIVES A SUMMARY OF PROGRESS MADE ON SEVERAL FRONTS OVER THE PAST QUARTER.

Data Collection

Collection of the scenario-based meetings for the AMI Hub Corpus is now complete, with about 40 series of meetings being recorded across the 3 sites. Approximately 60-70 hours of this will be selected for inclusion in the Hub Corpus. The scenario-based data is now being supplemented with a variety of other real meetings, and it is anticipated that the full 100 hours of Hub data will be collected by June.

Annotation

Work has commenced on annotating the Hub data as it becomes available. In particular, speech transcription work is rapidly progressing, with transcripts coming online in the NXT CVS repository. Updates on progress are regularly posted on the project Wiki pages (<http://wiki.idiap.ch/ami>). Annotation of other phenomena, including named entities, topics and emotion has also commenced.

User Requirements

A workgroup has been formed to define a set of use cases and corresponding functional requirements for the meeting browser and remote meeting assistant. The group is coordinated by WP6 members, but also comprises representatives of the other technical work-packages to ensure that requirements remain relevant to AMI technologies. The group has decided to focus on a memory aid use case for the browser, in which the browser is used in the context of a new meeting to recall details of past meetings, and a remote meeting monitor, which allows a user to set up real-time filters that alert them when an ongoing meeting becomes relevant to them. Researchers interested in following the discussion of user requirements can subscribe to a new mailing list:

wp6-user@amiproject.org.

NIST Rich Transcription Meeting Recognition Evaluation

The AMI ASR workgroup has decided to enter their system in the 2005 NIST Rich Transcription Meeting Recognition Evaluation. In addition, the project has contributed approximately 10 hours of data from the AMI Hub Corpus for use in the evaluations. The evaluations will be conducted during May, and discussed in the NIST workshop being held in conjunction with MLMI in July.

Software Toolkit for Multimedia Browser Development

A Java software toolkit has been developed to facilitate the rapid prototyping of multimedia presentation interfaces, such as meeting browsers. The toolkit implements a plug-in architecture which simplifies integration of new multimedia presentation components. Screen layout and component communication is controlled via a simple XML configuration file. The toolkit will be released internally during April at <http://mmm.idiap.ch/jferret>.

Work-package Meetings

Over the past quarter, work-package meetings were held for WP5 and WP6. The WP5 meeting focused on finalising annotation definitions, planning for common evaluation, and discussing the relationship between user requirements and the development of technology components. The WP6 meeting mainly concerned the issue of user requirements and the integration of presentation components.



Philips Wireless Presenters and Connected Displays

As the implementation the Philips Wireless Presenter product is now complete, Philips will start focusing on new interactive products that can enhance the meeting effectiveness at the office but, maybe a less common approach, also to attend a meeting at home! The Philips CE Business Group Connected Displays envisages that in the future people will increasingly want to work from their home environment in order to prevent long travel times to meetings and also to have more flexible ways to attend a meeting. During the coming 18 months, the Philips CE Innovation Lab will start focusing on a new TV application based on a LINUX platform, potentially opening up new business cases thanks to the open platform. The new prototype will implement video call (video over IP) demonstrators from TV-TV or TV-PC, with web cam and microphone as input devices and large LCD flat display and speakers as output.



Upcoming Events

MLMI 05

July 11-13, 2005

Following the highly successful MLMI-04 workshop held last summer in Martigny, we are delighted to announce that MLMI-05 will take place in Edinburgh from 11-13 July 2005. The workshop will be supported by several projects in the EU Multimodal Interfaces sector (AMI, CHIL, PASCAL, HUMAINE, SIMILAR), as well as the Swiss NCCR (IM)2. Like MLMI-04 there will be no registration fees for members of these projects.



Submission Requirements

All participants in the sponsoring projects, as well as external contributors, are invited to submit full papers for oral or poster presentation (see guidelines below), or extended abstracts for poster presentation in the following areas of interest, related to the context of multimodal interaction:

- human-human communication modeling
- speech and visual processing
- multi-modal processing, fusion and fission
- multi-modal dialog modeling
- human-human interaction modeling
- multi-modal data structuring and presentation
- multimedia indexing and retrieval
- meeting structure analysis
- meeting summarizing
- multimodal meeting annotation
- machine learning applied to the above

The form papers should follow the Springer LNCS format and be 12 pages maximum per full paper. Extended abstracts, 2 pages maximum. The best papers will then be published in an edited book.

Submission deadline - 13 May 2005

Accept/reject decisions - 13 June 2005

ICMI 2005

October 3-7, 2005

The Seventh International Conference on Multimodal Interfaces (ICMI 2005) will take place in Trento, Italy October 3-7, 2005, with the theme of multimodal input and output interfaces through mobile technologies and applications. The main aim of ICMI 2005 is to further scientific research within the broad field of multimodal interaction & systems. The conference will focus on major trends and challenges in this area, including distilling a roadmap for future research and commercial success. We are very pleased to announce this Call

for Papers that invites experts from both research and industry to actively participate in ICMI 2005. ICMI 2005 will feature a main conference Oct. 4-6, with keynote speakers, plenary sessions for technical paper, presentations and discussion, a doctoral spotlight paper session highlighting top student research, poster sessions, panel discussions, and demonstrations of state-of-the-art multimodal concepts and systems. To further stimulate discussion and interaction within emerging important topic areas, ICMI 2005 also will host joint workshops and tutorials on October 3 and October 7.

Topics of special interest include multimodal input and output interfaces, fusion techniques & hybrid architectures, processing of language and action patterns, gaze and vision-based interfaces, speech & conversational interfaces, pen-based interfaces, haptics interfaces, cognitive modelling of users, artificial intelligence techniques, adaptive multimodal interfaces, multibiometric interfaces, multimodal-ultisensor interfaces, interfaces for attentive and intelligent environments, multimodal interfaces that support cooperation and teamwork within groups, mobile, tangible and virtual/augmented multimodal interfaces, universal access interfaces, multimodal applications and demonstrations, and multimodal system infrastructure and tools for data collection, design, development, and evaluation of multimodal interfaces.

Submission Requirements

The ICMI'05 proceedings will be published by ACM Press. For the first time, this year's conference will honour the highest quality and most innovative papers in both regular and student categories with ICMI Outstanding Paper Awards. We invite interested researchers to submit to any of the following categories:

- FULL PAPER describing original research in multimodal interfaces (8 pages).
- DOCTORAL SPOTLIGHT PAPER featuring emerging student research (4 pages).
- PANEL PROPOSAL that presents, debates, or provokes discussion (2 pages).
- DEMO PROPOSAL that displays related concepts or implementations (2 pages).
- WORKSHOP proposal that explores newly emerging, challenging, or important multimodal themes (2 pages).
- TUTORIAL proposals that disseminate knowledge on more consolidated multimodal topics (2 pages).

Full paper and doctoral spotlight contributors are kindly requested to send an abstract (no more than 200 words) by April 25, 2005.

More information about the conference, including details concerning the submission of papers, and instruction for workshop and tutorial proposers can be found at the following URL: <http://icmi05.itc.it/>

W3C Seminar Multimodal Web Applications for Embedded Systems

W3C is developing standards that support multiple modes of interaction: aural, visual and tactile. The Web then becomes accessible by using voice or hands via a key pad, keyboard, mouse or stylus. One can also listen to spoken prompts and audio, and view information on graphical displays.

W3C wishes to bring Web technologies to new environments such as mobile devices, automotive telematics and ambient intelligence. Already, many innovative multimodal Web applications have been developed, some of which will be showcased at the W3C seminar on multimodal Web applications for embedded systems, on 21 June 2005 in Toulouse, France.

W3C wishes to coordinate closely with regional industrial and research communities present in Toulouse such as in aeronautics, automotive, telecommunications and electronics.

This seminar is funded by the Multimodal Web Interaction (MWeb) project, financed by the European Commission's FP6 IST Programme (unit INFISO-E1: Interfaces). Attendance to the seminar is free and open to the public.

W3C Seminar page:

<http://www.w3.org/2005/03/MWeb-seminar.html>