PROCEEDINGS eNTERFACE’05
Summer Workshop on Multimodal Interfaces
July 18 - August 12, 2005
Faculté Polytechnique de Mons - Belgium
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I take this opportunity to mention how the idea of eNTERFACE came to life in mid 2003, when the core committee of SIMILAR (the European Network of Excellence on Multimodal Interfaces), was busy establishing its list of workpackages. It is basically a three acts piece.

Act 1. I have been a researcher for 18 years now. It is therefore becoming hard to navigate in the “conferences” directory of my laptop. Small to big, short to long, close to far away, I think I have tried them all. One of them, however, will last forever in my memory as the most productive meeting I have ever attended. It was a summer school on Prosody, in July 1993, organized by the ELSNET (already a scientific network). I spent two weeks there, at UCL London, attending lectures and, more importantly, taking labs with my fellow PhD students from all over the world. I must say this is simply the place where I met most of my friends for life!

Act 2. In 1996, I had the opportunity to work for AT&T at Bell Labs for 1.5 years, in the TTS group. This was set about 2 years after I finished my PhD (i.e., 2 years after I had signed with Kluwer for writing the “3-months-of-work” book in TTS I took 3 years to complete; I finished it at AT&T…). It was clear to me that I was then about to meet the greatest gurus in speech processing (yet I had underestimated the number of famous people who were working in this lab), and that I would work with the best maintained software archive in the world (you snap your finger, and you get what you were looking for; this, I had overestimated..). I did meet all these people, and the atmosphere was such that meeting each other was really easy, but I also realized something I had never imagined: research in the US is a huge network thing. “Network” in terms of “you seldom work on your own on a problem”, but also in terms of “Be with the network; the network will take care of you”. In other words, research is very much advertised and supported by your employer, by all sorts of professional organizations, and even among the general public. Hence its dynamics.

Act 3. I was aware of the successful DARPA workshops on speech recognition organized yearly by Prof. Fred Jelinek at Johns Hopkins University. Funded by the Defence Agency (which implies a strong financial support), these workshops have progressively become a “must” for researchers in the field, who come from all around the world to participate. One of our researchers took part to it, and my ex-colleague Hervé Bourlard, now the Director of IDIAP in Switzerland, was an active member of it. I have always envied this event, and dreamt of finding money to organize something SIMILAR.

Thanks to EU financing, and with special care from SIMILAR, this dream has come true.

With its 55 researchers from 15 countries all around the world working together for four weeks on seven pre-selected projects, eNTERFACE’05 has been a total success.

Long life to eNTERFACE workshops!
See you next year in Dubrovnik for eNTERFACE’06!
What are eNTERFACE workshops?

The eNTERFACE summer workshops (www.enterface.net), organized by the SIMILAR European Network of Excellence, are a new type of European workshops. They aim at establishing a tradition of collaborative, localized research and development work by gathering, in a single place, a group of senior project leaders, researchers, and (undergraduate) students, working together on a pre-specified list of challenges, for 4 weeks. Participants are organized in teams, attached to specific projects related to multimodal interfaces, working on free software.

eNTERFACE’05 was held at Faculté Polytechnique de Mons, Belgium, in July-August 2005 (see next article). The eNTERFACE’06 workshop will be organized in Dubrovnik, Croatia, in July-August 2006.

What do eNTERFACE workshops produce as results?

At the end of the workshop, a public presentation day is organized, in which the team leaders explain and demonstrate the results of their project. A press conference is also organized, to maximally publicize the event.

All results, codes and data, are then made publicly available with an MIT-like open source license.

Last but not least, the workshop proceedings are produced 6 weeks after the end of the workshop, in which each team contributes a 15pp. paper on the project they had to study, the related state-of-the-art-of-the art, the problems encountered, and the solution(s) proposed and implemented.

But still more importantly, eNTERFACE workshops create a real transfer of know-how among participants, who continue to work together after the workshop has closed. They actively contribute to building the European Research Area, by establishing a tradition of
localized collaborative research.

The eNTERFACE funding model

No funding is provided by the organizers for researchers, but no registration fees are asked for either. Participants therefore have to pay for their travel, lodging, and catering expenses, using their SIMILAR finances or other EU, national, or regional funding. Catering and lodging is available from the University organizing the workshop, at minimal student rates. Some grants are available from scientific societies.

A limited number of undergraduate students (typ. 10) are also selected (based on their CV and recommendations from professors), whose travel and accommodation expenses are paid by the organizers.
The eNTERFACE’05 workshop was the first of a series of eNTERFACE workshops, held at Faculté Polytechnique de Mons, Belgium, from July 18th to August 12th, 2005. Following the general organization process of eNTERFACE workshops, seven projects were first selected on the basis of an international call for projects. From this list of projects, a call for participation was then launched internationally, and participants were selected, on the basis of their CV and potential input in the projects. This call resulted in the selection of 55 researchers from 15 countries all around the world (but mostly Europe), organized in 7 teams.

Each team worked for a complete month on one of the following 7 challenges:

   This project included the preparation of a database, the study of correlations between speech features and gesture units, the modeling of gesture units, and the adaptation of units for specific speakers.

2. **Multimodal Caricatural Mirror** (Coordinator: Prof. B. Macq, UCL Louvain La Neuve).
   This project aimed at creating a caricatural mirror where people could see their own emotions amplified (image+speech) by an avatar, on a wide screen facing them. It includes
multimodal face tracking, multimodal emotion recognition, and multimodal emotion synthesis.

3. **Biologically-driven musical instrument** (Coordinator: Prof. Benoît Macq, UCL Louvain La Neuve).
   The goal was to build a virtual musical instrument driven by EMGs, EEGs, Heart beats, video, etc.

4. **Multimodal Focus Attention Detection in an Augmented Driver Simulator** (Coordinators: Profs. Laurent Bonnaud & Alice Caplier, INPG_LIS, Grenoble; Prof. B. Macq, TELE Lab, UCL Louvain La Neuve).
   This project proposed to use physiological signals, the analysis of facial expression as well as tracking of the user’s focus (eye tracking) in an augmented reality driver simulator able to appropriately react to hypovigilence.

5. **Multilingual Multimodal Biometric Identification/Verification** (Coordinator: Prof. Yannis Stylianou, University of Crete)
   This project involved the recording of a multilingual multimodal (face, lips, speech, writing, body movement) database for biometric identification/verification. It then performed on site tests of the various scenarios of fusion between various modalities and under various noise conditions.

6. **Speech Conductor** (Coordinator: Prof. C. D’Alessandro, LIMSI-CNRS, Paris)
   The Speech Conductor project aimed at developing a gesture interface for driving (“conducting”) a text to speech synthesis system. Then, automatic speech synthesis was modified in real time according to the gestures of a “Speech Conductor”. The Speech Conductor adds expression and emotion to the speech flow using speech signal modification algorithms and gesture interpretation algorithms.

7. **A Multimodal (Gesture+Speech) Interface for 3D Model Search and Retrieval Integrated in a Virtual Assembly Application** (Coordinator: Prof. Dimitrios Tzovaras ITI-CERTH, Thessaloniki).
   The goal of the project was the development of a multimodal interface for content-based search of 3D objects based on sketches. This user interface will integrates gesture and speech modalities to aid the user in sketching the outline of the 3D object he/she wants to search from a large database.

All projects were presented to the press on August 12th; this press conference led to multiple appearings in the national TV and radio news, as well as to several articles in national newspapers.

All project results are available from the workshop web site: [www.enterface.net](http://www.enterface.net)
The eNTERFACE’05  Scientific Committee

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