



EURASIP seminar at the workshop “ Scalable and cross-media indexing” of GDR-CNRS-ISIS

Date: 26.11.2009

Place: Télécom Paris Tech, 46, rue Barrault, 75013 Paris

Speaker: Professor Riccardo Leonardi, University of Brescia, Italy

Title: The audio-visual message: structure and emotion

Abstract: Keywords, books, source code convey precise semantic messages that are spreading knowledge and governing our society. Music and video information are instead good support to peoples' emotions. In creating an audio-visual content, a goal is often to provide a strong emotional message. The essence is to steer the viewer or the listener's sensation in the composer's imaginary world or in his/her shaping of the reality. The mixture between the oral message and the temporal coherence of the audio-visual content enables new forms of information exchange and interaction. This presentation will describe the components that can be used to model the emotional and information value of audio-visual content. Once preserved, these can be optimally rearranged to match instantaneous users' preferences for diverse tasks such as skim generation or genre classification.

CV of the Speaker: Riccardo Leonardi has received his Diploma (1984) and Ph.D. (1987) degrees in Electrical Engineering from the Swiss Federal Institute of Technology in Lausanne, Switzerland (EPFL).

He spent then one year (1987-88) as a post-doctoral fellow with the Information Research Laboratory at the University of California, Santa Barbara (USA). From 1988 to 1991, he was a Member of Technical Staff at AT&T Bell Laboratories, performing research activities on visual communication systems. In 1991, he returned briefly to EPFL to coordinate the research activities of the Signal Processing Laboratory.

Since March 1992, he was appointed at the University of Brescia to establish research and teaching activities in various fields of Telecommunications. He holds there the Signal Processing Chair. He has established at the University of Brescia an undergraduate and graduate program in Telecommunication Engineering, and a Ph.D. programme in Information Engineering.

Prof. Leonardi is currently leading a group of ~20 people. Currently his main research interests cover the field of Multimedia Signal Processing applications, with a specific expertise on visual communications, and content-based analysis of audio-visual information. He has published more than a 100 papers on the topic. Prof. Leonardi introduced the concept of object based representation of images with the design of effective segmentation tools for an object based compression of visual information laying the foundation of the

video compression part of the ISO/MPEG4 standard. He has also introduced the concept of Motion-compensated interpolation for improved prediction of video information, a key concept in Digital Television compression, as of to-day standards.

He introduced the concept on how to have a multi-modal approach in analyzing temporal dependencies of audio and visual features in order to achieve semantic level descriptions of audio-visual documents.

/He is Involved in the ISO/MPEG standardisation activities and has led and/or participated to several national and international research programmes in audio-visual communications, funded by the European Commission (ESPRIT project AVIR, IST project SPATION, IST project SCHEMA,...), the Italian National Center for Research (CNR), the Italian Ministry of Education and Research (MIUR).

Prof. Leonardi has been member of various IEEE Societies: Circuits and Systems Society, Communication Society, Information Theory Society, Signal Processing Society and European Association for Signal Processing. He has been expert for project evaluation and technical auditing /of European Commission programs such as IVth framework ACTS program (1997-2000) and COST program (1998-1999), and Vth to VIIth framework IST program (2000-current) He is a member of the Editorial Board or Area Editor of various International Journals, e.g. Journal of Visual Communication and Image Representation, Signal Processing: Image Communication. He has been General Chairman of the 2001 Content Based Multimedia Indexing (CBMI 2001), of the 2002 Tyrrhenian International Workshop on Digital Communication Workshops (IWDC 2002), /of the International Very-Low Bit Rate Video Workshop (VLBV 2005), and of the next 2010 International Workshop on Image Analysis and Multimedia Interactive Services (WIAMIS 2010).