Immersive Media Experiences

(ImmersiveMe 2013 Workshop at ACM Multimedia)

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ABSTRACT

Immersive media has the potential for strong impact on users' emotions and their sense of presence and engagement. The main objective of this workshop is to bring together researchers, students, media producers, service providers and industry players in the area of emergent immersive media. The workshop will provide a platform for a deep discussion on ongoing work, recent achievements and experiences. It is expected not only to consolidate experiences but also to identify aspects where strong collaboration among all the interested players is needed and to point towards future working directions.

Categories and Subject Descriptors

H.5.1 [**Information Interfaces and Presentation**]: Multimedia Information Systems; I.2.10 [**Artificial Intelligence**]: Vision and Scene Understanding; H.3.3 [**Information Storage and Retrieval**]: Information Search and Retrieval

Keywords

Immersive media; multisensory interaction; user participation; personalization.

1. INTRODUCTION

Immersive media has the potential for strong impact on users' emotions and their sense of presence and engagement. Increasingly, technology is supporting their involvement by capturing, producing, sharing and accessing information based on their perspectives and experiences, over the Internet, in social media, and through video on demand services using iTV. We have been witnessing an increase in the amount of content and number of devices for capturing, viewing and sensing, many of them portable and offering tremendous opportunities for immersion, user participation and personalization. The integration of different

media formats, including 3D content, panoramic displays, multiview, as well as the possibility of delivering and accessing content through different communication vehicles, promote the development of a new participatory paradigm and enable new perceptual user experiences that provide more realistic and immersive involvement.

Immersion may be influenced by sensory modalities, surround effect, and vividness through resolution, and it conveys the user's conscious feeling of being inside the virtual world and the sense of belonging. It has an impact on the users and may be augmented by personalized and context-aware environments and content. Given the complexity of emerging media environments, researchers have begun to grapple with the dynamics of contemporary media usage to face the challenges for the design and development of technology and applications that effectively support and realize this immersion potential.

This workshop takes place in the middle of a media revolution where users are expecting to take part in the action by interacting with and generating content and to experience immersive and personalized environments. Its goal is to bring together researchers and practitioners in this interdisciplinary and transversal emerging field and to foster discussion of ongoing work and future directions of related topics by providing a forum for focused exchanges on new ideas, developments, and results.

2. TOPICS OF INTEREST

The workshop covers a broad set of topics related to the concept of Immersive Media Experiences in terms of 1) the user's perceptual experience; 2) the consumer's participation; 3) context-aware service personalization; 4) new media formats, including 3D, multiview and panoramic video and interaction approaches; 5) the integration of technology to make media more realistic, and production more efficient. Papers presented at the workshop make contributions in one or more of the following areas:

- Perceptual Immersion and multisensory interaction (including smell, taste and touch)
- Audiovisual Immersion: 3D, panoramic, multiview, and holographic video, spatial and stereoscopic audio
- Immersive TV, film and cinema
- Multisensory telecommunication
- Participatory media experiences, including user generated content, collaborative scenarios and crowdsourcing

- Personalization and context-aware adaptation in immersive scenarios
- Enabling technologies and formats
- Immersive media applications
- Quality of experience in multiview environments
- Emotions and affective interaction for immersive media
- Social aspects in new media services
- Field trials and user studies of immersive media
- Design and evaluation of immersive media experiences

3. WORKSHOP CONTRIBUTIONS

This first edition of the workshop attracted high quality submissions from research labs around the world. Many of the papers presented at the workshop were motivated by real-life use cases and concrete application contexts, indicating practical relevance and applicability. These papers cover a broad number of relevant aspects that enable the creation of immersive experiences, including work in Perceptual Immersion aspects, Participatory and Collaborative approaches, Enabling Technologies, Applications and Field Trials in different areas. Authors describe work that deal with different formats of video and audio streams (360º video, 3D and multiview), the use of different senses to enhance media experiences, transmission and streaming approaches, experiments in fields that include performing arts, sports, and participatory and collaborative scenarios. All these visions brought an interesting Immersive Media Experience to the workshop.

4. WORKSHOP CHAIRS

Dr. Teresa Chambel is a professor at Faculty of Sciences, University of Lisbon (FCUL) in Portugal, and a senior researcher of the Human Computer Interaction and Multimedia group at the LaSIGE Lab. Her research interests include multimedia and hypermedia, with a special emphasis on video and hypervideo, human-computer interaction (HCI), creativity, immersion, visualization, accessibility, cognition and emotions, interactive TV, elearning, digital talking books and digital art. Along with her students, she received the best paper award at EuroiTV'2011.

Dr. V. Michael Bove, Jr. holds a Ph.D. in Media Technology, from MIT, where he is head of the Object-Based Media Group at the Media Lab, and co-directs the Center for Future Storytelling and the consumer electronics working group CE2.0. He has authored papers on digital TV systems, video processing HW/SW design, multimedia, scene modeling, visual display technologies, and optics. He holds patents relating to video recording, hardcopy, iTV, and medical imaging. He is co-author with the late Stephen A. Benton of the book Holographic Imaging (Wiley, 2008). He is on the Board of Editors of the SMPTE Journal, and served as associate editor of Optical Engineering. Bove is a fellow of SPIE and of the Institute for Innovation, Creativity, and Capital. He was a founder of and technical advisor to WatchPoint Media, Inc. and is technical advisor to One Laptop Per Child.

Dr. Sharon Strover is the Philip G. Warner Regents Professor in Communication at the University of Texas where she teaches communications and telecommunications courses and directs the Telecommunications and Information Policy Institute. Her research investigates the relationship between economic outcomes, policy and investments in digital media programs; social media; the digital divide; rural broadband deployment; e-government; and market structure and policy issues for international audiovisual industries.

She has worked with several government agencies on telecommunications policy matters. She recently stepped down from Chairing her Department, to work on a national broadband infrastructure program with the federal government in Washington, D.C.

Dr. Paula Viana is a Coordinator Professor at the Polytechnic of Porto and a Senior Researcher at INESC Porto, a research institute with more than 25 years of research results in the area of Telecommunications and Multimedia Services. She has authored papers in the areas of Digital TV, Multimedia Information Systems and Content Management. Her long collaboration with broadcasters and Industries enables an integrated vision of both future research topics as well as new applications for finished research. She has been serving as an expert for the European Commission on the evaluation of research proposals and on the assessment of project results.

Prof. Graham Thomas leads Immersive & Interactive Content Section at BBC R&D. Whilst the current work in his section spans both audio and video, his background is in image processing, computer vision and their application to 3D virtual graphics. He was involved in a number of projects that have gone on to commercial success, e.g. free-d camera tracking system, retro-reflective chroma-key cloth, and sports graphics systems. Prior to 3D graphics, he worked on video compression, PAL coding, and motion estimation based on phase correlation (in his PhD), commercialized in a standards converter, which won an Emmy award and a Queen's Award to Industry. Graham holds over 20 patents and is a Visiting Professor at the University of Surrey.

5. PROGRAMME COMMITTEE

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