Editorial

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Biographical notes: Dennis Reidsma is an Assistant Professor at the Human Media Interaction Group and a Lecturer of the Creative Technology Curriculum at the University of Twente (Enschede, The Netherlands). His current research activities focus on two main topics. He works on interaction with virtual humans, and consolidated the results of this joint work with Herwin van Welbergen in the release of AsapRealizer, a state-of-the-art open source software platform for generating continuous interaction with virtual humans. In addition, he works on various topics in computational entertainment and interactive playgrounds, runs several research projects in this area, and is regularly involved in the organisation of conferences such as INTETAIN and ACE.

Gualtiero Volpe is an Assistant Professor at the University of Genoa, Italy, where he teaches multimodal systems and foundations of computer engineering. His research interests include intelligent and affective human-machine interaction, sound and music computing, modelling and real-time analysis of expressive content in human full-body movement, social signal processing, and multimodal interactive systems for performing arts, cultural heritage, and education. He participated as a local Project Manager in European projects and is the author of more than 100 scientific publications. He is currently the President of AIMI (Italian Association for Musical Informatics).

Antonio Camurri is an Associate Professor at the University of Genova where he teaches human-computer interaction and multimodal systems. His research interests include multimodal intelligent interfaces, interactive systems, sound and music computing, computational models of non-verbal expressive gesture, emotion, and social signals; interactive multimodal systems for performing arts and culture, therapy and rehabilitation. He is a Coordinator and local Project Manager of European projects in IST FP5 and FP6, ICT FP7, Culture 2007, Erasmus IPs, Cost Action (see http://www.infoms.org), co-owner of patents on software systems, and scientific responsible of industry contracts.

Anton Nijholt is a Professor in the Human-Media Interaction Research Group of the University of Twente. He studied Mathematics and Computer Science at the Delft University of Technology and he received his PhD research from the Vrije Universiteit in Amsterdam. Since then, he held positions as Post-doc and Professor at universities in Canada, The Netherlands and Belgium, before he took a permanent position in 1989 as a Full Professor at the University of Twente, The Netherlands. In Twente, he initiated the Human-Media Interaction Research Group and supervised close to 50 PhD students. He has hundreds of scientific publications, including many (edited) books. He chaired many conferences and workshops on intelligent agents, affective computing, and entertainment computing.

This special issue brings together selected, extended contributions from the Fourth Conference on Intelligent Technologies for Interactive Entertainment (INTETAIN 2011), with a special focus on research concerning the application of new technologies in the field of arts and culture.

Since 2005, the INTETAIN conferences provide an international forum for researchers in the field of interaction technologies, with a special focus on entertainment. The conference aims at enhancing the understanding of recent and anticipated advances in interactive technologies, and their applications to entertainment, education, culture, and the arts. The way users consume and interact with media and applications, both locally and over the internet, are continually changing. The explosion of natural, multimodal, and touch based interfaces, and their access to the general public, has made new interaction paradigms a reality.

In this tradition, INTETAIN 2011, held in Genova, Italy, May 2011, included the presentation of research works on virtual/mixed/augmented reality, hardware technologies for interaction and entertainment, devices, animation and virtual characters, non-verbal full body interaction, storytelling, affective user interfaces, social interaction and children interaction.

In this work we see a change of perspective concerning the role of new technology in entertainment applications. Rather than using entertainment applications as a drive to develop new advanced technology, many researchers take off-the-shelf components and use these to explore the question *what new things can we make possible*? The field of entertainment computing is very well suited to building new kinds of engaging experiences for users, based on existing technology. So what are these new experiences? What developments do we see in technology for entertainment? One thing that stands out is a move from *entertainment for consumption* to *co-production*. More and more, users do not get a finished end product that they only have to enjoy, but are invited to join in the process of creation. Open source software and hardware, open APIs, and hardware components for easy tinkering blur the distinction between developer and end user. The

papers in this issue show this trend as well: in each of them one will find that the user has a highly active role in the process of creation and assigning meaning to the interaction.

The papers gathered in this issue follow a common thread. Although they use different technologies and have different goals and applications each of them concerns the design and evaluation of 'systems that tell a story'.

For the first paper by Alofs et al., this is quite literally the case: the paper concerns a system for interactive story generation. The end result, however, is not only determined by rules and patterns in the system. They extend earlier work on automatic story generation, in which the user had no influence on how the story goes, to a multi person, social, interactive experience. Their system now allows users to make active choices for emotions and actions that happen in the story. Furthermore, the social setting (several players around an interactive table), allows the players to not only collaboratively change the story, but also to join in the telling and expressing of the story as it unfolds, giving a new meaning to the story as generated by the system.

The paper by van Dijk et al. is more based on *helping the user construct their own story* than on automatic generation of a story by a machine. In a museum environment, the authors explore how children can be supported to construct their personal guided tour, based on their interests, leading to an optimised museum going experience. Their specific interest in this application is to develop a model for designing tangible user interfaces, specifically for children that focuses mainly on the user experience during interaction and on how to design interactions.

The third paper by Piman et al. reports on their efforts in the area of cultural heritage preservation. In their research, they explore how to keep the ancient storytelling techniques of Wayang Kulit alive, through accessible tools with which non-expert users can experience playing this type of theatre themselves. The tools include a storyline creating interface in which the users can describe actions and dialogue.

Finally, the last paper by Mader et al., concern the smallest stories possible: single value devices are made to express one personally relevant piece of information, so concisely and expressively that the user understands its import immediately, without having to think about it. The authors start by describing the concept of single value devices based on a survey of examples. In the rest of the paper, they explore the various conceptual and technological dimensions involved, and discuss some of the design choices that one has to consider when realising such devices. Taken together, the papers gathered in this issue show the various roles that storytelling can play in entertainment technology. Awareness of this will help us maintain the connection between the technology that we make and the users for whom the technology is meant: they are the participants in and the audience of the stories.