Editorial

Teresa Romão*

Faculdade de Ciências e Tecnologia,
Universidade Nova de Lisboa,
2829-516, Caparica, Portugal
Email: tir@fct.unl.pt
*Corresponding author

Anton Nijholt

Faculty EEMCS,
University of Twente,
P.O. Box 217, 7500 AE Enschede, The Netherlands
Email: A.Nijholt@utwente.nl

Adrian David Cheok

City University London,
St. John Street, EC1V 4PB, London, UK
Email: adriancheok@mixedrealitylab.org

Biographical notes: Teresa Romão is an Assistant Professor at the Faculdade de Ciências e Tecnologia, Universidade Nova de Lisboa (FCT/UNL), where she teaches and develops research work in the area of HCI. She is a member of the Research Center for Informatics and Information Technologies (CITI-FCT/UNL) and was a Researcher at the Vrije Universiteit, Amsterdam. She studied computer science at FCT/UNL and received her PhD degree from the same university in 2001. She has been involved in several EU and national funded research projects related with computer entertainment, augmented reality, mobile storytelling, ubiquitous computing and persuasive technology. She has many publications in books, peer reviewed journals and top conferences. She has been involved in the organisation and served on the program committees of various national and international conferences. She is also a member of the Steering Committee of the International Conference on Advances in Computer Entertainment (ACE).

Anton Nijholt studied computer science at the Technical University of Delft and received his PhD from the Vrije Universiteit Amsterdam in 1980. He has held positions at various universities in and outside the Netherlands. His main research interests are entertainment computing, multimodal interaction, affective computing and brain-computer interfacing. He has numerous publications, including (edited) books on natural language processing, brain-computer interfacing, and playful user interfaces. He has served as program chair and general chair for the main international conferences on affective computing and entertainment computing. He is Series Editor of the Springer book series *Gaming Media and Social Effects*.

Adrian David Cheok is the Chair Professor of Pervasive Computing at City University London. He is the Director of the Mixed Reality Lab. Amongst numerous high quality academic journals, keynotes and exhibitions, he was featured in worldwide broadcasts on his research such as CNN and Discovery Channel. In addition, he was the recipient of numerous prestigious awards and prizes such as the A-STAR Young Scientist of the Year, Hitachi Fellowship, SCS Singapore Young Professional of the Year, Microsoft Research Award in Gaming and Graphics, C4C Children Competition Prize, Integrated Art Competition Prize, Creativity in Action Award, Mindtrek Award, and was awarded Young Global Leader 2008 by the World Economic Forum. He graduated from the University of Adelaide with a Bachelor of Engineering (Electrical and Electronic) with First Class Honours in 1992 and an Engineering PhD in 1998.

This special issue of the *International Journal of Arts and Technology* comprises a selection of papers from ACE 2012, the 9th International Conference on Advances in Computer Entertainment (Nijholt et al., 2012). ACE is the leading scientific forum for the dissemination of cutting-edge research results in the area of entertainment computing. The main goal of ACE is to stimulate discussion in the development of new and compelling entertainment computing and interactive art concepts and applications. Interactive entertainment is one of the most vibrant areas of interest in modern society and is amongst the fastest growing industries in the world. The 2012 edition of this conference was organised in Kathmandu, Nepal, and its theme was 'Entertaining the Whole World'.

Technology has been increasingly providing us with tools to create interactive systems that can be exploited for entertaining and artistic purposes. Art and entertainment are important vehicles for people's education and amusement, possibly enabling changes in thoughts, feelings and behaviours. This way, the design and creation of interactive art and entertainment involve many concerns, including: How to influence user experiences and engage people in specific activities or remote events? How to enhance accessibility to art performances? How to facilitate the design and creation of art and entertainment tools? The papers compiled in this special issue contribute towards giving further insight into these issues.

Authors of some of the best papers from ACE 2012 were invited to update and improve their papers to be included in this special issue. Six representative papers, which fit with the mission of the *International Journal of Arts and Technology*, have been selected.

Two studies with the aim of evaluating playability in social games and identifying domain specific playability problems are presented in the paper by Paavilainen, Alha and Korhonen. These studies also contribute to validate the adequacy of a set of social game heuristics previously proposed for the evaluation of social games. Moreover, the paper discusses the design characteristics that cause the identified playability problems and suggests possible solutions on how to overcome these problems.

The second paper, by Hachisu and Kajimoto, presents a novel feedback technique for tooth brushing consisting of modulating tooth brush sounds to increase people's motivation, comfort and sense of accomplishment, which may ultimately help to prevent various tooth diseases. In the described experiments, brushing sounds are recorded by a microphone built into the toothbrush, manipulated and presented to the users in real-time.

The results show that it is possible to motivate users by interactively manipulating the frequency of brushing sounds.

A new paradigm, which explores affective computing and persuasive technologies to remotely recreate the venue atmosphere during broadcasted sports events, is presented in the paper by Centieiro, Romão and Dias. The authors propose some multiplayer mobile games aiming at engaging remote fans in live sports by stimulating them to participate in the actions happening at the venue. New technologies are explored to enhance remote spectators' experience and to make them feel involved in the venue atmosphere. User studies were conducted and the corresponding results are reported in the paper.

Konya and Siio describe a caption presentation system that enables both hearing impaired and unimpaired people to enjoy theatrical performances. To enhance the hearing impaired user experience when attending theatrical performances, the system supports dialogues, sound effects and audience response. It uses directional dialogue balloons to help the hearing impaired to locate the speakers and indicators of laugh and applause sounds from the audience, at the bottom of the caption display area, to help the hearing impaired perceive the audience reactions. The application was tested during theatrical performances and the audience feedback is presented in the paper.

Choi and Cheok propose two multisensory fashion accessories intended for managing the impression one makes in face-to-face encounters, sound perfume and light perfume. The former uses auditory and olfactory stimulation to help people to express their identity and personality. The latter uses visual and olfactory stimulations to strengthen the users' bond with their partners. The paper also describes the preliminary study conducted to test both systems.

In the last paper, Takegawa, Fukushi, Machover, Terada and Tsukamoto propose a prototyping support system for the creation of painted musical instruments. It enables users to define input interfaces to control the sound output through the use of conductive ink. The paper describes the system's design and implementation, as well as the evaluation procedures conducted during exhibitions and workshops.

Acknowledgements

We thank the Editor-in-Chief of the *International Journal of Arts and Technology*, Athanasios Vasilakos, for giving us the opportunity to put together this special issue and we also wish to thank all the authors and anonymous reviewers who made this special issue possible.

References

Nijholt, A., Romão, T. and Reidsma, D. (Eds.) (2012) *Proceedings 9th International Conference on Advances in Computer Entertainment (ACE 2012)*, Lecture Notes in Computer Science 7624, Springer Verlag, Heidelberg, Berlin.