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Preface

These are the proceedings of the 10th International Conference on Advances in Computer Entertainment (ACE 2013), hosted by the Human Media Interaction research group of the Centre for Telematics and Information Technology at the University of Twente, The Netherlands.

The ACE series of conferences, held yearly since 2004, has always been lively and interactive events. There are not just mainly paper presentations, but also many creative showcases, demonstrations, workshops, and often a game competition as well. For ten years now, ACE has shown itself to be a strong and vibrant community. Throughout the years, there has been a common element that ties together many of the different types of work presented at ACE. In their contributions, authors not only present solutions to known problems, or observe and describe aspects of the technological reality that is out there, but also actively explore what new things they can make, and why these new things might be important or interestingly different.

During ACE 2011, held in Lisbon (Portugal), Hiroshi Ishii challenged the ACE community by asking for the real value of entertainment computing, and especially the relevance of research in this field. At ACE 2012, held in Kathmandu (Nepal), this question was raised again during the panel session. We can try to address this question through some viewpoints on entertainment technologies. Clearly, entertainment can be a valuable goal in itself. People need to experience fun, engagement, social connectedness, and many other things achieved through entertainment. Entertainment can also be used as a powerful means for changing people’s perceptions, ideas, and behavior. Entertainment with and through computers is a fact of daily life. It is there, and it has a huge economic impact that is not likely to decrease.

At ACE, we look at entertainment computing as the subject of our research. We look at changing perceptions and behaviors using serious games and other persuasive technologies. We try to analyze and understand various aspects of computer entertainment: besides “making new things”, we “analyze the things that we find in the world of computer entertainment”, how people use technology or play games. We explore the creative design space to find new forms of beauty, experience, and fun. Also, we attempt to re-create existing human experiences in an interestingly new way. New developments in multimodal interactive technology are used to re-create certain experiences as faithfully as possible; subsequently, we attempt to find out whether we can fundamentally enhance the experience, due to the technological innovation. What can we do better, differently, in a more interesting way, because we implemented technology for this particular experience?

The latter is also reflected in the theme of this anniversary edition, which was “Making New Knowledge”. As already noted in last year’s introduction to
the proceedings of ACE 2012, creating has always been an important form of entertainment. People paint for a hobby, play music, build model airplanes, or write amateur poetry in their free time. Just for the fun of designing and creating their own entertainment; the final result may be less important than the process. Tinkering can also be a strong source of learning, something that has been known at least since the seminal work of Seymour Papert. In a video lecture on Carnegie Commons, John Seely Brown suggests that the role of a teacher partly shifts from imparting knowledge to building a learning community. Clearly, tools for programming and physical computing can serve as tinkering materials in such a community, and maybe there are further roles that computer entertainment technology can play in building and facilitating such a learning community.

These thoughts are not only reflected in a number of papers and extended abstracts in these proceedings, but also in several of the additional activities that were organized during this year’s conference. There were panels, workshops in which the participants sit down together to actively make things or to discuss the role (and challenges!) of tinkering in scientific education, the Kids’ Workshop Track featuring activities for children making stories, animations, and elements for games, and there were special efforts to include more students at various levels in their education in the conference. All this took place at the beautiful resort Bad Boekelo, situated in the pastoral countryside of Twente.

Of course, there cannot be a conference without the submission of many good papers. This year, 133 papers were submitted to the various tracks. With an acceptance rate of 22% for long regular presentations, and 54% for all contributions including extended abstracts for the poster presentations, these proceedings represent the very interesting and relevant work currently carried out by the ACE community.

Like every year, many people worked hard to make this 10th edition of ACE a success. To the Program Committee, reviewers, authors, track chairs, workshop organizers, delegates visiting the conference, and the sponsors supporting the conference in various ways: Thank you! We are proud to have served as this year’s general and program chairs to bring everything together in the lovely countryside of Boekelo, The Netherlands!

November 2013

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ACE 2013 at the University of Twente, The Netherlands, was organized in partnership with the Centre for Telematics and Information Technology, The Netherlands Organisation for Scientific Research (NWO), the SIKS Graduate School, and Springer Publishing.
Keynote Talks
“Mindful or Mindless Entertainment?”

Yvonne Rogers

University College London

Abstract. We are increasingly living in our digital bubbles. Even when physically together – as families and friends in our living rooms, outdoors and public places – we have our eyes glued to our own phones, tablets and laptops. The new generation of ‘all about me’ health and fitness gadgets, wallpapered in gamification, is making it worse. Do we really need smart shoes that tell us when we are being lazy and glasses that tell us what we can and cannot eat? Is this what we want from technology – ever more forms of digital narcissism, virtual nagging and data addiction? In contrast, I argue for a radical rethink of our relationship with future digital technologies. One that inspires us, through shared devices, tools and data, to be more creative, playful and thoughtful of each other and our surrounding environments.

Yvonne Rogers is the director of the Interaction Centre at UCL and a professor of Interaction Design. She is internationally renowned for her work in HCI and ubiquitous computing. She has been awarded a prestigious EPSRC dream fellowship to rethink the relationship between ageing, computing and creativity. She is known for her visionary research agenda of user engagement in ubiquitous computing and has pioneered an approach to innovation and ubiquitous learning. She is a co-author of the definitive textbook on Interaction Design and HCI now in its 3rd edition that has sold over 150,000 copies worldwide.
Abstract. Haptics is an emerging field for enhancing interactivity and immersion. As a result, many new haptic technologies are developed and introduced in recent years for entertainment, education, communication, surgical, therapeutic and sensory substitution. In the last decade, there exists a buzz for haptics to be a ‘game-changer’ for gaming, mobile and VE applications, however, the main-stream consumers have yet to see compelling and popular haptic products. We have identified two main factors which must be addressed for success of haptics in gaming and entertainment markets. These are (1) novel haptic technologies and (2) new tools to create haptic content.

In this talk, I will present the background and vision for recent haptic technologies developed in the Disney Research labs (such as Tesla Touch, Surround Haptics, Aireal haptics devices) and our on-going efforts towards producing haptic products and content. I will highlight the challenges for us to generate interests and strategies for successful transfer of technology from research to product.

Ali Israr is a Haptic Researcher and Engineer working in Disney Research, The Walt Disney Company. He holds a doctoral degree in Mechanical Engineering and has been working in haptics research for the last 12 years. His research has been published in premium conferences and journals, presented in elite forums and has been successfully transferred in to consumer and amusement park product lines. Dr. Ali Israr obtained his Bachelors of Science from University of Engineering and Technology, Lahore Pakistan.
Introduction to the Special Session on Serious Game Technology

Arjan Egges * and Kaśka Porayska-Pomsta **

1 Session Overview

Over the last decade serious gaming has become a prominent and important field of research. Serious games are increasingly used to support learning of and training in diverse and traditionally unrelated domains. These domains range from formal learning of traditional subjects such as mathematics, vocational training for professions such as air pilots or dentists, coaching individuals in acquiring better job interview skills, to therapeutic applications which aim to support the development of skills associated with socio-emotional coping, e.g. in schizophrenia or autism. Serious games leverage both the intrinsic motivation associated with playing computer games as well as a serious intent to furnish their players with skills that are useful in the real world. As such, these games present their own set of challenges to game designers and developers. First, as most serious games will have some sort of educational goal, the design of a game should ensure that these educational goals are reached when someone plays the game. Second, a serious game should be able to measure the success of the player within the game itself. Although tracking a player’s progress is something that any game should do, for serious games this is even more important to get right, since the quality of the training in part determines the performance of the trainee in the real world.

Serious games are also challenging from the technological and engineering point of view. In many cases, serious games use specific hardware such as 3D screens, plates that can measure exerted forces, motion trackers, or 3D sound generators. Incorporating all of these modalities into a coherent and seamless game environment is complex. Designing and developing serious games becomes even more challenging when one wants to incorporate capabilities such as tracking of individual players over different sessions, allowing for simultaneous participation of multiple players over a network connection. Furthermore, games often need to be adapted to different languages and cultures—this process is

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commonly referred to as localization. Finally, serious games increasingly require the availability of authoring tools for creating scenarios by users who are not game designers, which imposes the demand on the serious games technology to be robust and transparent in its design.

Much research is presently done on serious game technology in Europe. This special session will focus on a variety of current work related to serious game technologies, showcasing examples of research concerned with the challenges that are unique to serious games. The goal of the session is to bring serious gaming professionals together in an informal way, and to promote collaboration and exchange of experiences and future directions in this rapidly emerging field. Specifically, the session presents the ongoing work conducted within three European projects concerned with the development of serious games: TARDIS (EU-FP7), SHARE-IT (UK-EPSRC), and MASELTOV (EU-FP7). Each project has contributed a paper to the session.

The first paper is titled ‘The TARDIS framework: intelligent virtual agents for social coaching in job interviews’ and it describes the TARDIS serious game framework for building an intelligent training and coaching environment for young adults at risk of social exclusion from unemployment through which they can practice and improve their social interaction skills needed for conducting successful job interviews.

The second paper: ‘Building Intelligent, Authorable Serious Game for Autistic Children and Their Carers’ introduces the SHARE-IT project, which creates a serious game for children with Autism Spectrum Disorders through which they can learn and explore skills which are important to engaging in social communication with others. The paper focuses on the SHARE-IT game’s architecture which enables the engineering of an intelligent game (in the AI sense) that is also authorable by parents and teachers.

The third paper is entitled: ‘Advances in MASELTOV Serious Games in a Mobile Ecology of Services for Social Inclusion and Empowerment of Recent Immigrants’. As part of a comprehensive suite of services for immigrants, the MASELTOV game seeks to develop both practical tools and innovative learning services via mobile devices, providing recent immigrants across Europe with readily usable resource that would help in their integration within their adopted cultures and countries.

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