Foreword

Welcome to the proceedings of ICEC 2007

It is our honor to edit this volume of LNCS reporting the recent progress in entertainment computing. We are pleased with the solid work of all the authors who contributed to ICEC 2007. ICEC 2007 attracted 99 technical papers. Based on a thorough review and selection process by 87 international experts from academia and industry as members of the Program Committee, a high-quality program was compiled. The International Program Committee consisted of experts from all over the world: 6 from the UK, 3 from Singapore, 1 from Lebanon, 30 from China, 2 from The Netherlands, 9 from Japan, 6 from Germany, 1 form Greece, 3 from Canada, 11 from the USA, 3 from Korea, 2 from Austria, 1 from Hungary, 1 from Spain, 1 from Portugal, 2 from Italy, 2 from France, 1 from Switzerland, 1 from Sweden, and 1 from Finland. The final decision was made by review and conference Chairs based on at least three reviewers' feedback available online via the conference management tool and E-mail. As a result, 25 full papers and 23 regular papers were accepted as submitted or with minor revisions. For the remaining submissions, 16 were recommended to change according to the reviews and were submitted as posters. In all the papers, five were published in the *International Journal of Virtual Reality*, three were recommended to the *Journal of Computer Animation and Virtual Worlds*, and six were recommended to the *Journal of Computer Science and Technology*. This proceedings volume presents 64 technical contributions which are from many different countries: Singapore, China, Japan, Korea, The Netherlands, Czech Republic, Spain, USA, Germany, France, Australia, Canada, etc. The accepted technical papers are compiled and presented in this volume in the order they were presented at the conference. They are classified into the following presentation sessions: (1) Augmented, Virtual and Mixed Reality; (2) Computer Games; (3) Image Processing; (4) Mesh and Modeling; (5) Digital Storytelling and Interactive Systems; (6) Sound, Music and Creative Environments; (7) Video Processing; (8) Rendering; (9) Computer Animation and Networks; (10) Game-Based Interfaces; (11) Robots and Cyber Pets. All poster papers are listed separately and presented in a specific section of this book.

July 2007

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Preface

Entertainment is playing a very important role in our life by refreshing our mind, activating our creativity and providing different media for expression. Recently, with the advances made in graphics, image processing, sensors, networks, and media technologies, new types of entertainment have been emerging such as video games, edutainment, robots, augment reality, and online games. Entertainment has been merged into different fields of science, society, economy as well as our daily life. It is valuable to enhance the efficiency of many aspects, such as teaching, learning, playing, working, communicating and exchanging knowledge. New forms of entertainment are emerging and are studied by many scientists and engineers from different research fields. Entertainment has become one of the major research areas in information technology. Since there are rapidly expanding industries and markets devoted to entertainment, new technologies and methodology must be laid out for these increasing demands.

The emerging forms of entertainment have been changing our lives, and it is urgent for us to discuss various aspects of entertainment, to analyze the principle and structure of entertainment and to promote entertainment-related research.

With this basic motivation, the General Assembly of the International Federation of Information Processing (IFIP) approved in August 2002 the establishment of SG16 to monitor and promote research and development activities related to entertainment computing throughout the world. One of the major activities of SG16 is to organize and support the International Conference of Entertainment Computing (ICEC). The ICEC is expected to bring together researchers, developers, and practitioners working on entertainment computing topics, such as theoretical studies, social and cultural aspects, new hardware/software development, integrated systems, integrated systems, human interfaces and interactions, and applications.

Let us briefly review the history of ICEC. The annual conference started in 2002 as the International Workshop on Entertainment (IWEC 2002), which was held May 14-17, 2002 in Makuhari, Japan. The workshop attracted more than 100 participants, and 60 papers were published in the proceedings by Kluwer. Based on the success of IWEC 2002, SG16 upgraded the workshop to a conference and organized ICEC 2003. ICEC 2003 was held May 8-10, 2003 at the Entertainment Technology Center of Carnegie Mellon University, Pittsburgh, USA. ICEC 2003 was also successful, with more than 100 attendees and 20 highly selected papers. All of the papers of ICEC 2003 were accepted by ACM for inclusion in their ACM online digital library. The following year, ICEC crossed the Atlantic Ocean to Europe, and ICEC 2004 was held September 1-3, 2004 at the Technical University of Eindhoven in The Netherlands. The conference attracted more than 150 attendees, and 27 full papers were published by Springer in the *Lecture Notes in Computer Science* (LNCS) series. In 2005, ICEC came back to

Japan, and was held at Kwansei Gakuin University, Sanda. In this conference the Committee selected more than 50 papers, and these papers are published in the LNCS volume. In 2006, ICEC was hosted by Microsoft Research and the University of Cambridge, in Cambridge, UK. In the conference the Committee selected more than 60 papers.

Finally, in 2007, ICEC was hosted for the first time in Shanghai, China, hosted by Shanghai Jiao Tong University, sponsored by the Natural Science Foundation of China, Autodesk and Microsoft Japan.

For the success of ICEC 2007, we express our special thanks to all the people who worked so hard to organize the conference: the Shanghai Jiao Tong University for the support and to all the individuals who supported the organization with the Local Organization Committee.

We are also grateful for the contribution of all the paper reviewers as well as the sponsors and cooperating societies.

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