2013 International Conference on Virtual and Augmented Reality in Education

Virtual and Augmented Reality in Education

Preface VARE2013

Jorge Martín-Gutiérrez\textsuperscript{a}, Egils Ginters\textsuperscript{b}

\textsuperscript{a}Universidad de La Laguna, La Laguna, Tenerife, Spain
\textsuperscript{b}Vidzeme University of Applied Sciences, Valmiera, Latvia.

Welcome to the 2013 International conference on Virtual and Augmented Reality in Education, which is being held on 7th-9th November 2013 in Puerto de la Cruz, Tenerife, Spain. This year’s conference will take place in the beautiful city of Puerto de la Cruz at the Beatriz Atlantis Hotel. VARE 2013 is organized by the University of La Laguna and Sociotechnical Systems Engineering Institute of Vidzeme University of Applied Sciences.

The International Conference on Virtual and Augmented Reality in Education is an biannual conference that brings together teachers in all areas of knowledge and educational levels as well as researchers and scientists from computing disciplines linked with virtual technologies. In general, teachers and researchers with research lines for improvement of teaching through virtual technologies will discuss any problems and solutions in the area while identifying new issues and giving shape to directions for future research.

In this second edition of VARE, the number of participants as well as all their works has been exceptional as a consequence of the virtual technologies, which are reaching every educational level.

This year we expect over 125 participants. The aim of these proceedings is becoming a major intellectual resource for researchers of virtual technologies while also intending to define and advance the state of the art in this field.

The theme for VARE 2013 is "Introducing Virtual Technologies in the Classroom" to mark the ever-increasing need of teaching with technologies that students are used to, for motivating them and also showing the didactic potential of the developed tools in both virtual and augmented reality.

The conference will be an event focused on recent evolution of augmented and virtual reality for developing systems and complex applications across different educational fields: compulsory studies, business education as well as learning of any kind.
For this great event, world leading keynote speakers were invited, to give their current and future vision of virtual technologies in education and training:

- Dr. Hannes Kaufmann, Institute of Software Technology and Interactive Systems at Vienna University of Technology, Austria
- Dr. Eberhard Blümel, Fraunhofer Institute for Factory Operation and Automation, Germany.

Besides our excellent keynote speakers, out of the submitted papers, we selected over 50 high-quality papers for presentation at the conference and publication in the proceedings, published by Elsevier in their Procedia Computer Science series.

We would like to thank all scientific committee members for their contribution to ensure a high standard for the accepted papers. We would also like to give special thanks to the people who ensured all papers adhered to the correct formatting for publication. Finally the committee would like to thank Dr. Rosa M. Aguilar Chinea, whose continuing support for the conference has been essential to its success.

We wish you a successful and enjoyable conference in Puerto de la Cruz, Tenerife, Canary Islands. November 2013, the VARE 2013 Organizers,

Dr. Jorge Martin-Gutierrez
Dr. Egils Ginters

Corporate Supporters

Universidad de La Laguna

Sociotechnical Systems Engineering Institute of Vidzeme University of Applied Sciences

Elsevier B.V.

Diteca. Aula de Cultura. Vicerrectorado Relaciones Universidad y Sociedad

Unidad de Docencia Virtual. (ULL)
General Chair
Dr. Jorge Martín Gutiérrez – University of La Laguna. Spain.
Dr. Egils Ginters – Vidzame University of Applied Sciences. Latvia.

Organizing Committee
Dr. Jorge Martín Gutiérrez – University of La Laguna. Spain.
Dr. Egils Ginters – Vidzame University of Applied Sciences. Latvia.
Dr. Arnis Cirulis – Vidzeme University of Applied Sciences. Latvia.
Dr. Mariano Alcañiz Raya – Valencia Polytechnic University – (I3BH). Spain.
Dr. Rosa María Aguilar Chinea – University of La Laguna . Spain
Prof. Krzysztof Amborski – Warsaw University of Technology. Poland.

International Advisory / Scientific Committee
Dr. Eberhard Blümel – Fraunhofer Institute for factory Operation and Automation, Germany.
Prof. Dr. Abdel-Badeeh M Salem – Ain Shams University, Cairo-Egypt.
Prof. Atis Kapenieks – Riga Technical University, Latvia.
Tina Haase – Fraunhofer Institute for Factory Operation and Automation IFF, Germany.
Prof. Hitoshi Nishizawa -Toyota National College of Technology, Japan.
Prof. Takayoshi Yoshioka- Toyota National College of Technology, Japan.
Prof. Vanesa Muñoz – University of La Laguna, Spain.
Dr. Jesús Torres Jorge – University of La Laguna, Spain
Prof. Reimund Neugebauer - Chemnitz University of Technology, Germany.
Dr. Kaspars Osis – Vidzeme University of Applied Sciences, Latvia Dominik Grüntjens – University of Koblenz, Germany.
Prof. Gaby Neumann – Technical University of Applied Sciences Wildau, Germany.
Prof. Janis Grundspenkis – Latvian Academy of Sciences, Latvia.
Dr. María Dolores Meneses Fernández - University of La Laguna, Spain.
Dr. Juris Binde – Latvijas Mobilais Telefons, Latvia.
Prof. Carlos Efrén Mora Luis - University of La Laguna, Spain.
Prof. Klaus G. Troitzsch – University Koblenz-Landau, European Social Simulation Association (ESSA)
Prof. Leonid Novitski – Riga Technical University, Latvia.
Prof. Miquel Angel Piera Éroles – University Autonoma of Barcelona, Spain.
Prof. Vytautas Paulausjas – Klaipeda University, Lithuania.
Prof. Antonio Guasch Petit – Universitat Politècnica de Catalunya, Spain.
Prof. Javier Pujales Gutierrez – University of Valladolid, Spain.
Prof. Adolfo Lopez Paredes – University of Valladolid, Spain.
Prof. Anna-Maria Gil-Lafuente – University of Barcelona, Spain.
Prof. Vija Daukste – Vidzeme University of Applied Sciences, Latvia.
Prof. Sarma Cakula - Vidzeme University of Applied Sciences, Latvia.
Prof. Nikos E. Mastorakis – Technical University of Sofia, Bulgarian.
Prof. Juri Tolujev – Otto-von-Guericke University, Germany.
Dr. Manuel Contero González - Valencia Polytechnic University – (I3BH). Spain.
Kawa Nazemi - Fraunhofer Institute for Computer Graphics Research, Germany.
Prof. M. Montserrat Acosta Gonzalez- University of La Laguna. Spain.
Dr. Peña Fabiani Bencomo - University of La Laguna. Spain.
Dr. David C. Pérez López - Valencia Polytechnic University – (I3BH). Spain.