1st International ACM Workshop on User Experience in e-Learning and Augmented Technologies in Education

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ABSTRACT
UXeLATE2012 is the 1st International ACM Workshop on User Experience in e-Learning and Augmented Technologies in Education in conjunction with the ACM International Multimedia Conference (MM'12) at Nara, Japan. The workshop has a half day program, with a selection of six papers, and one keynote talk of a recognized expert in the field of usability, mobile technology and education.

Categories and Subject Descriptors
H.5. [**Information Interfaces and Presentation**]: Artificial, augmented, and virtual realities; Graphical user interfaces, User-centered design; Asynchronous interaction, Collaborative computing. K.3.1. [**Computer Uses in Education**]: Collaborative Learning, Distance Learning.

General Terms
Design, Experimentation, Human Factors.

Keywords
User Experience, e-Learning, Augmented Reality, Human-Computer Interaction, Technologies in Education.

1. INTRODUCTION
The radical penetration of new forms of interaction in a diversity of everyday life activities raises the need for investigation of usability and user experience aspects. Especially in the field of education, the availability of various interactive devices (tablets, e-book readers, smart phones, etc.) provides the means for technological augmentation of the learning process, raising thus a number of issues that should be addressed towards students' learning skills enhancement and fostering. With this main objective, the workshop aims to address, among others, aspects of Augmented Reality (AR) interaction in learning and education.

Using 3D digital models, the final user (students, educators, researchers, and all type of users), can understand the space, ideas and contents more clearly and quickly [1]. Our "digital native" students [2], are prepared to understand and acquired more quickly spatial skills using technological implementations than traditional education [3]. Currently, the quick technological development of mobile devices such as Smartphones or Tablets as well as 3D gesture based products (such as Kinect, Wii remote, etc.) allows the visualization, interaction and e-learning strategies without the need to work in specific computer labs with high-tech systems. In addition, it is important in any technological approach in education study the User Experience (UX) and level of adaptation/satisfaction of students using the new proposals, without falling in classic usability errors as generalization, excessive valuation of percentages and probabilities, overvaluation of the expert opinion, etc...[4]

AR technology and applications, which using a mixture of the virtual and physical world, have been recognized as promising environments for improving the quality of collaboration in educational domains. The use of AR-supported simulations results in higher levels of perceived skill development, self-reported learning and learning interest.

The purpose of this workshop is to provide a common forum for researchers, scientists, engineers, architects, and practitioners throughout the world to present their latest research findings, ideas, developments and applications in the use of tangible and gesture based interfaces in collaborative experiments, specially focused in e-learning methodologies and multimedia implementations, and its use in the educational framework using mobile technologies.

2. FOCUS AREAS AND MOTIVATION
Topics related to the motivation of the workshop include:

- Education and entertainment.
  - Serious Learning and Digital Games.
  - Mobile Learning and Ubiquitous Learning.
  - Digital Applications in e-Learning.
  - Social Networks.
- Human-Computer Interaction.
  - User Experience and Usability.
  - Gender, Age and Culture Differences.
  - Computer Vision for human activity understanding.
- 3D virtual models and worlds.
  - 3D Model illumination and textures.
  - 3D GIS.
  - E-Planning.

MM'12, October 29–November 2, 2012, Nara, Japan.
ACM 978-1-4503-1089-5/12/10.

    - Digital geography.
    - Gesture Based 3D interaction.
    - Simulation, prediction, and evaluation.
    - Advanced spatial analysis.
- Virtual and Augmented Reality.
    - Augmented Cognition in training and education.
    - Mobile interfaces.
- Virtualization and visualization.
    - Visualization techniques.
    - Evaluation methodologies.

3. TECHNICAL PROGRAM

3.1 Keynote Speaker

For this workshop we have a first level invited speaker, which come from research and education frameworks and will give us insights into new trends in the application of usability and augmented reality technologies in education:

- Dr. Sethuraman (Panch) Panchanathan is the Senior Vice President of Knowledge Enterprise Development which promotes Advancing Research, Innovation, Entrepreneurship and Economic Development. He is also the Director of the Center for Cognitive Ubiquitous Computing (CUbiC) which focuses on the research areas of of Human-centered Multimedia Computing; Face/Gait Analysis and Recognition; Haptic User Interfaces; Medical Image Processing; Media Processor Designs and Ubiquitous Computing Environments for enhancing quality of life for individuals with disabilities.

3.2 Accepted Papers

After a double-blind review process of the 14 technical papers submitted, 6 of these papers were selected for presentation at the workshop:

- "Arm Gesture Variations during Presentations are Correlated with Conjunctions Indicating Contrast", John Zhang and team of Columbia University.
- "Developing an Augmented Reality application in the framework of Architecture Degree", Albert Sánchez and team of UPC (Barcelona Tech).
- "Emergency medicine training with gesture driven interactive 3D simulations", Lorenzo Seidenari and team of Media Integration and Communication Center.
- "Glooveth: Healthy Living with an Innovative Gameplay", Enric Macías and team of La Salle, URL.
- "Joint spaces between schools and museums via Virtual Worlds. A case study", Luis Hernández and team of Universidade da Coruña.
- "WikiNect: Towards a Gestural Writing System for Kinetic Museum Wikis", Alexander Mehler and team of Goethe-University Frankfurt

3.3 Program Committee

We would like to express our gratitude to our program committee members, who worked in the reviewing process and gave us suggestions and improvements. The active members and their affiliations in alphabetic order are:

- Alex García-Alonso, Universidad del País Vasco.
- Andreas Duenser, University of Canterbury.
- Caifeng Shan, Philips Research.
- Claudio Barradas, Instituto Politécnico de Santarém.
- Derek Reilly, Dalhousie University.
- Francisco José García, Universidad de Salamanca.
- Georgios Margetis, Foundation for Research and Technology (FORTH).
- Giuliana Vitiello, University of Salerno.
- Harald Milchrahm, Technical University Graz.
- Isabel Azevedo, Inst. Sup. de Eng. do Porto.
- Ismo Rakkolainen, University of Tampere.
- Jaume Duran, Universitat de Barcelona.
- Ling Shao, University of Sheffield.
- Margherita Antona, (FORTH).
- Mari Tosello, Sigradi.
- Mireia Fernández, IN3 – Open University of Catalonia.
- Mojgan Afshari, University of Malaya.
- Nikos Doulamis, National Technical University of Athens.
- Peter Froechlich, Telecommunications Research Center.
- Pilar Mareca, Universitat Politécnica de Madrid.
- Qingxiong Yang, City University of Hong Kong.
- Raymond Kosala, Binus Business School.
- Renata A. Gorska, Cracow University of Technology.
- Rosa Iglesias, Ikerlan.
- Stavroula Doa, (FORTH).
- Teija Vainio, University of Tampere.
- Toshihiko Yamasaki, University of Tokyo.
- Wolfgang Hürst, Utrecht University.
- Yi-Fan Chen, Old Dominion University.
- Zahid Hussain, Technical University of Graz.

4. REFERENCES

[1] Lu, Z. 2012. *Learning with Mobile Technologies, Handheld Devices, and Smart Phones: Innovative Methods*. IGI-Global. 1-272. DOI:10.4018/978-1-4666-0936-5.

[2] Prensky, M., 2001. Digital Natives, Digital Immigrants Part 1. *On the Horizon*, 9(5).1- 6.

[3] Eshet-Alkalai, Y. 2004. Digital Literacy: A conceptual framework for survival skills in the digital era. *Journal of Educational Multimedia and Hypermedia*, 13, 93-106.

[4] Navarro, I., Fonseca, D., Redondo, E., Sánchez, A., Martí, N., Simón, D., (2012). Teaching Evaluation Using Augmented Reality in Architecture. Methodological Proposal. *In Proceedings of 7º Conferencia Ibérica de Sistemas y Tecnologias de Información (CISTI 2012)* Madrid, Spain, 1(2), 685-690. ISBN: 978-989-96247-6-4.