*Journal of Universal Computer Science, vol. 20, no. 7 (2014), 941-943*
*submitted: 2/6/14, accepted: 20/6/14, appeared: 1/7/14* *© J.UCS*

# Trending Breakthroughs in Human-Computer Interaction

# J.UCS Special Issue

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## 1 Introduction and Motivation

There has been an increasing role of computers and machines in society over the last years. This has motivated Human-Computer Interaction (HCI) to become an important field for both industry and academy. In fact, there is currently an especial interest in the design, development and implementation of applications highlighting user-friendly interfaces.

This special issue aims at a full discussion on new trends in Human-Computer Interaction, bringing together trending papers and breakthroughs in this field.

In particular, we invited authors of best papers presented at the XIV International Conference on Human-Computer Interaction (Interacción 2013) to submit thoroughly revised versions of their contributions to this special issue. Interacción Conference provides an annual forum for disseminating the results of innovative research in Human-Computer Interaction concerning usability, accessibility, evaluation of interactive systems, hypermedia and web, affective computing, computer supported collaborative work, interaction for people with disabilities, context-aware systems, end-user development and other related areas. In addition, an open call for submissions was also launched, receiving other contributions from around the world.

## 2 Contributions

Specifically, for this special issue 12 submissions were received. Each paper has followed a strict peer-review process: it was reviewed by at least two international experts, and in several cases a second reviewing round for major revisions was needed. Finally, after that process, 5 quality articles were selected for this special

issue of the Journal of Universal Computer Science, where 3 out of such 5 articles are extended versions of papers accepted and presented at Interacción 2013.

The articles presented in this special issue deal with a variety of important topics within the HCI scope. Thus, novel user requirements extraction approaches are presented focusing on interactive web services development by Chiraz, et al. (Section 2.1) and accessibility by Calvo, et al. (Section 2.2). An advanced menu system like Keyboard-Card menu is studied by Berman and Hourcade (Section 2.3). Finally, there are two articles applying innovative interactive technologies, such as the use of affective computing in poetry by Arellano, et al. (Section 2.4) and the use of different strategies of locomotion for making 3D Virtual Environments accessible to a wide range of users by Moya, et al. (Section 2.5). Next we provide a brief description of each article.

### 2.1 A User-Aware Approach to Provide Adaptive Web Services

In this paper, authors report on the adaptation of web services to user profiles in order to have a more accurate control of their work environment and other variables useful for interaction purposes. In this sense, the work proposes context-aware web services in order to support profile specifications and ensure the self-adaptation to run-time context changes.

### 2.2 User Centered Requirement Engineering for Accessible Chats in m-Learning

This article is an attempt to detect accessibility problems in chat applications while using mobile learning. Authors report on the requirements needed to improve interaction with people experiencing problems with the flow and the rhythm of the conversations in chats. This way, a methodological approach has been provided combining human-computer interaction and software engineering paradigms.

### 2.3 Keyboard-Card Menus: A New Presentation of Non-standard Shortcuts

In this paper, authors present a novel proposal of menu interaction, namely keyboard-card menus, intended for presenting a large number of shortcuts and encouraging easy-to-learn. This proposal is evaluated through a study comparing keyboard-card and classical drop-down menus, revealing advantages in the use of the novel approach here presented.

### 2.4 Let me listen to Poetry, Let me See Emotions

This work proposes the engineering of an interactive virtual character that recites poetry while manifesting the emotional content of the poem using facial expressions and affective voice. Authors present this paper on the basis of several disciplines such as real-time animation, semantic analysis and natural voice interaction to carry through a novel and original environment to encourage the user experience.

### 2.5 First-person Locomotion in 3D Virtual Environments: a Usability Analysis

Through this work, authors present a usability analysis based on first-person locomotion in 3D virtual environments. This paper describes the problems experienced by elder persons or even people unfamiliar with 3D games in order to move avatars through these environments. Authors propose the testing of different methods to leverage such problems, including definitive results and conclusions.

## 3 Committee

We would like to express our gratitude to the committee members involved in this special issue for their valuable work on reviewing all contributions and giving detailed feedback:

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