EDITORIAL

Special section on new trends in HCI for improving communication, education and integration of people with disabilities

Julio Abascal[1] · Myriam Arrue[1] · Nestor Garay-Vitoria[1]

The impact of information technologies and the expansion of the Internet are rapidly changing the way in which information and services are accessed by people, as well as the way they share information and communicate with friends, relatives, educators, colleagues, etc.

In recent decades, the Human–Computer Interaction discipline has been paying more attention to the specific characteristics and needs of people with disabilities. Research on digital accessibility has helped people with functional limitations to use computers and, through them, to improve their possibilities for social integration and independent living. Correspondingly, advances in accessibility have been useful for the design of mainstream applications and devices.

This special section entitled **New trends in HCI for improving communication, education and integration of people with disabilities** is motivated by the need to review and discuss the continuous advancements in research aimed at helping people with disabilities live more independently. The current special section includes five research articles covering various aspects of integration and autonomous living. The following paragraphs briefly introduce each paper.

In the paper entitled, *Effects of visual complexity on user search behavior and satisfaction: an eye-tracking study of mobile news apps* by Fu Guo et al., the effect of interface complexity of mobile news apps on user search behaviors and satisfaction is explored. They analyse the correlation of diverse interface complexity parameters with user satisfaction and contribute to provide guidelines for designers.

In the paper, *Using Emotion Recognition Technologies to Teach Children with Autism Spectrum Disorder how to Identify and Express Emotions* José María García-García et al. present a proposal which integrates emotion recognition technologies to try to overcome the difficulties in social communication. The system incorporates tangible interaction mechanisms and emotion recognition from facial expressions. It has been evaluated by children with autism spectrum disorder (ASD) and has obtained promising results.

The paper by Daniel Guasch et al., entitled *Design and Evaluation of ECO: an Augmentative and Alternative Communication Tool* presents design guidelines for an Augmentative and Alternative Communication tool designed under a User-Centered Design methodology. The evaluation of this tool, named ECO, was based on heuristic-based expert evaluation and qualitative evaluation with final users and their therapists.

In the paper entitled, *A smartphone application for enhancing educational skills to support and improve the safety of autistic individuals* by Adeed Ishaq and Muhammad Shoaib, a smartphone application that provides learning and communication support to children with autism spectrum disorder is presented. It is especially oriented to emergency situations and provides learning with video modeling to teach safety skills to children. The application, which makes collaboration support easier between caregivers and children, was evaluated by children with ASD.

Finally, the paper by Rubén Alcaraz Martínez et al., entitled *Methodology for heuristic evaluation of the accessibility of statistical charts for people with low vision and color vision deficiency,* explores a heuristic set of indicators to evaluate the accessibility of statistical charts, focusing on the needs of people with low vision and color vision deficiency (CVD). This research is a first step to widen accessibility requirements to statistical charts and to take into consideration users with low vision and CVD, often forgotten in accessibility research.

✉ Myriam Arrue
   myriam.arrue@ehu.eus

   Julio Abascal
   julio.abascal@ehu.eus

   Nestor Garay-Vitoria
   nestor.garay@ehu.eus

1 Egokituz, Laboratory of Human-Computer Interaction for Special Needs, University of the Basque Country, Biscay, Spain

The guest editors would like to thank all the reviewers for their valuable input in the selection and improvement of the papers collected for this special section.

We sincerely hope that readers will find this special section of the UAIS journal a valuable reference on digital accessibility in the field of Human–Computer Interaction.

Julio Abascal, Myriam Arrue and Nestor Garay-Vitoria
Guest Editors