

Interactive, tangible and multisensory technology for a cultural heritage exhibition: the Battle of Pavia

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Abstract

New generation multimedia may have a great impact on the visit experience to an exhibition. This contribution focuses on the innovative use of interactive digital technologies in cultural heritage practices. An exhibition of “live” displays steered by visitors supports the creation of various content formats, smartly adapts the content delivered to the visitor, stimulates self-motivated learning, and leads to a memorable and effective experience. Multimodal interaction modalities have been developed for the exhibition “1525-2015. Pavia, the Battle, the Future. Nothing was the same again” - a satellite event of the Universal Exhibition in Milan (Expo 2015). The Computer Vision & Multimedia Lab of the University of Pavia, in the framework of a cooperation with the Bulgarian Academy of Sciences, within the European project “Advanced Computing for Innovation”, has contributed to set up the exhibition, enriching an educational and experiential room with products and targeted applications. Visitors can observe and analyze seven ancient tapestries, illustrating different phases of the battle, through 3D reconstructions, virtual simulations, eye interaction and gesture navigation, along with transpositions of the tapestries into tactile images that enable their exploration by partially sighted and blind people. In the near future, we may assess the impact of this interactive experience. Due to the novelty of the approach, new insights can be potentially derived, e.g. about the effectiveness of each specific system component. For example, the analysis of eye tracking data can provide a wealth of information on the exhibit attractiveness and about the proposed interactive multimedia solutions. Under this scope, not only the exhibition success is important, but also the augmented learning experience in cultural heritage contexts.