

art-E-fact– Elucidating Encounters with Art in Mixed Reality

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Abstract

The contribution will describe the results of the art-E-fact project, funded by the EU (IST-2001-37924). Conceptual approaches to interactive narration, the role of the user and the implementation within exemplary show cases will be explained. Further, results from the usability testing will point out the potential of educational applications.

Introduction and Motivation

The aim of the art-E-fact project was to develop a generic platform for interactive installations that employ Interactive Storytelling and Mixed Reality concepts. The platform provides tools and methods with the help of which it is now possible for artists and cultural content creators to easily produce installations for museums that are artistically appealing and that present exhibits of the museum in an entertaining and elucidating way.

art-E-fact enables the user to interact with digital cultural artefacts and virtual characters in a playful manner, e.g. by using physical devices the user can influence the story presented in a virtual environment by intelligent and emotional virtual actors. Though museums are the target market of art-E-fact, the usefulness of the results is obviously not restricted to this area. For example, shopping malls, public areas, and even stand alone use over the internet are further possible usages.

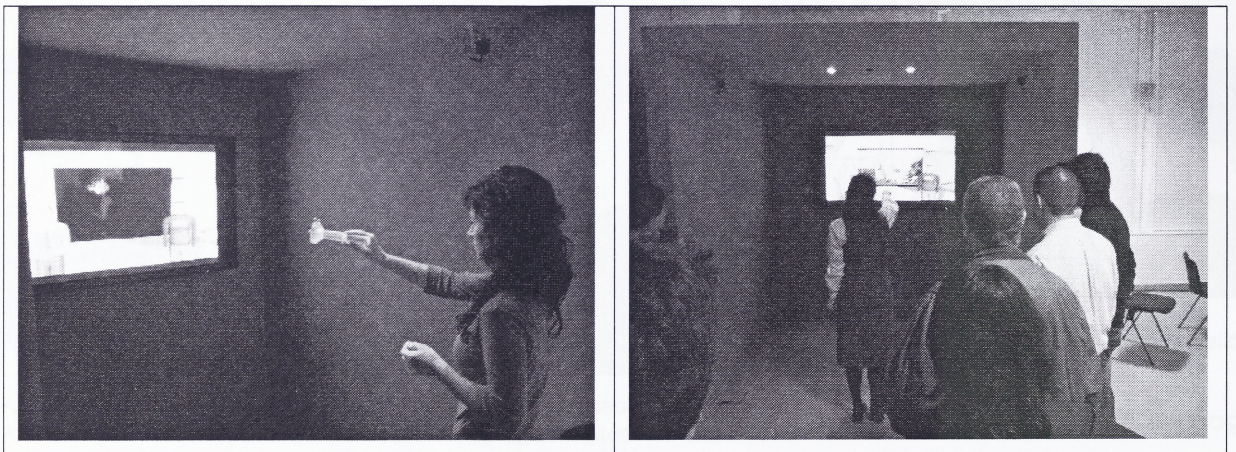


Fig. 1: User interacting with art-E-fact

Interactive Storytelling Platform

The generic platform comprises a runtime environment consisting of interaction management, virtual character animation module, mixed reality framework, and device management system; an easy-to-use authoring tool that enables access to art data bases to acquire the necessary content;

a video tracking system for recognition of gestures and physical devices that enables natural interaction, and tools for scanning of 3D objects.

Two exemplary approaches to interactive stories will be transformed.

„Byzantine Icons“ focuses on infotainment which means that impart of knowledge is in the foreground. Two virtual characters are talking about Byzantine Icons and different painting styles. The scenario is situated in a gallery-like environment. (Fig. 2)

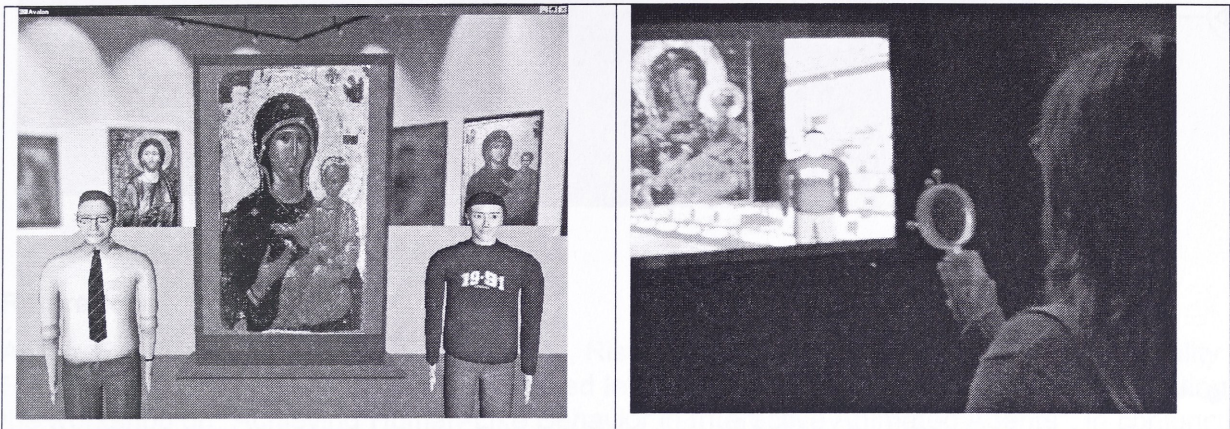


Fig. 2: Interactive art work about Byzantine Icons

„The Big Coup“ focuses on entertainment: A suspenseful story will be in the foreground. The plot is based on a mysterious robbery of two paintings of Francesco Guardi, an Italian painter who was famous for his views of Venice. Within the ongoing story the main character (“James”) - who is one of the committers – talks about how he came to be an art robber by accident. He undergoes an odyssey by trying to find out the paintings’ value. (Fig. 3)

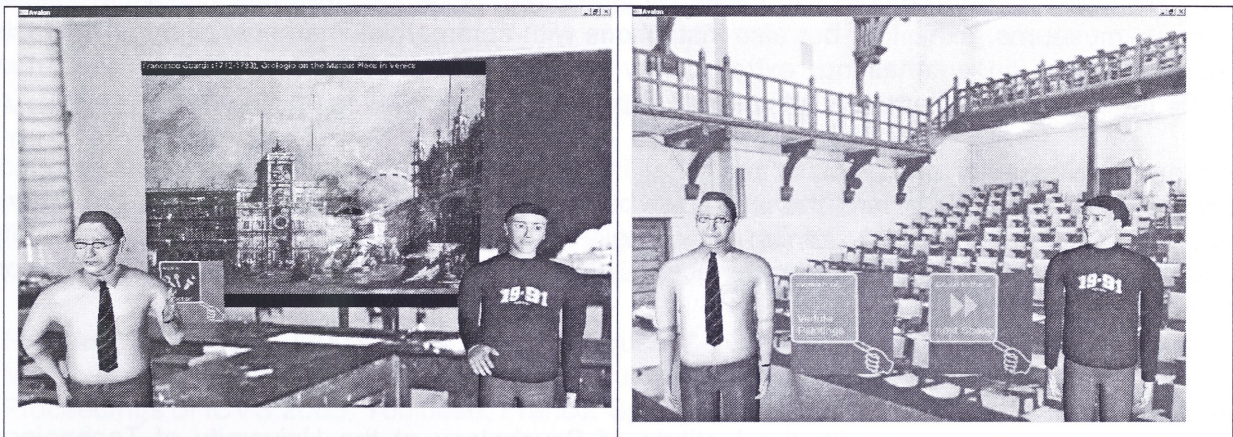


Fig. 3: Screenshots from the story “The Big Coup”

In both scenarios the user has the possibility to interact with the platform: by using gestures and pointing to particular parts of the installation, by using physical devices especially designed as easy-to-understand and easy-to-use interfaces, or by using the chat functionality to get more details within a conversation with the virtual characters.

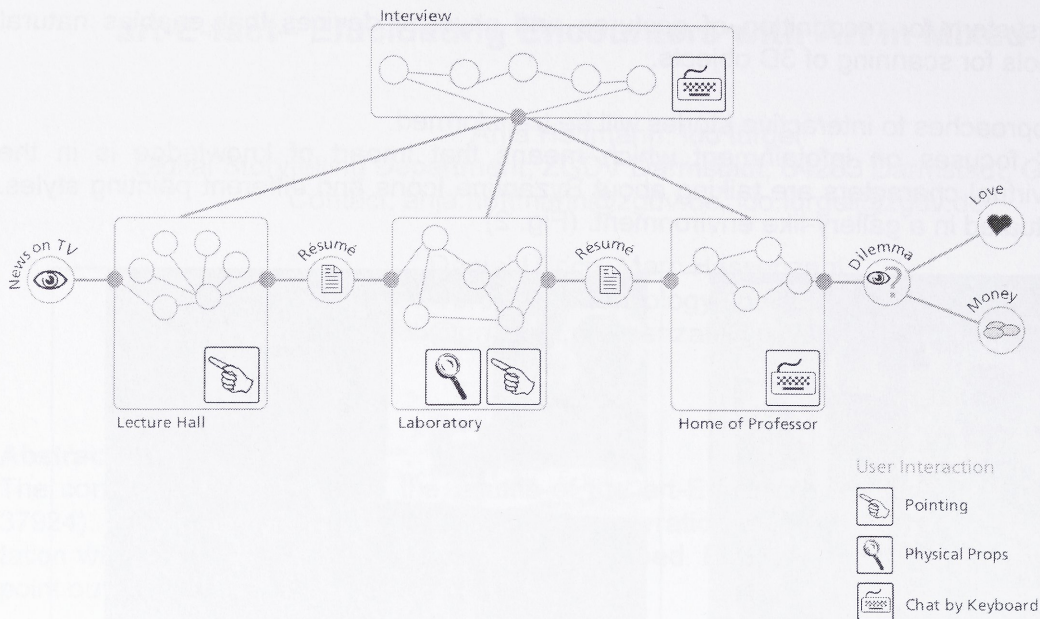


Fig. 4: Interactive story structure

Fig.4 shows the structure of the story “The Big Coup” and indicates what kind of user interaction is planned within the certain scenes.

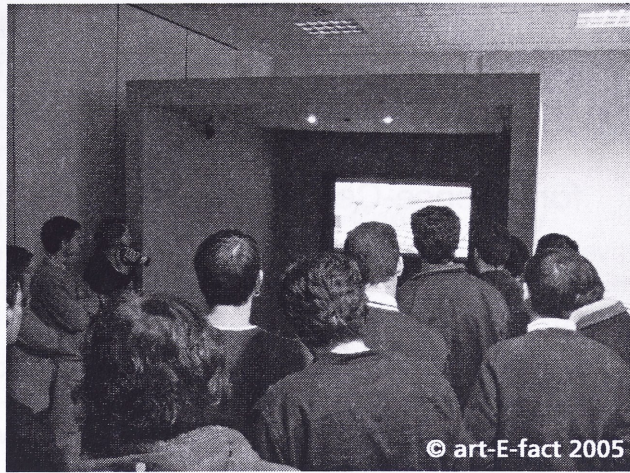
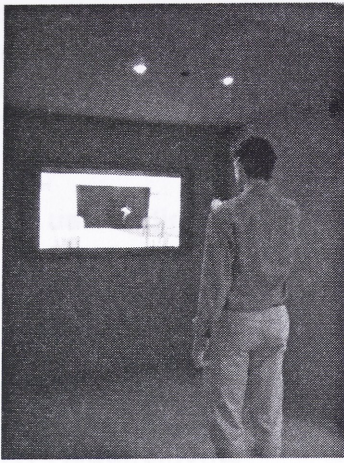
Narrative Experience for Anyone

art-E-fact can be used by anyone – from children to grandparents. It is not necessary to have any expert knowledge in computer technologies since the interaction possibilities go beyond keyboard and mouse input. Organisations that might be interested in having art-E-fact could be cultural institutions, museums, exhibitors but also institutions with commercial interest to present artefacts or products within an entertaining, extraordinary environment. Further, art-E-fact provides new forms for the creation of interactive art which is very interesting for media artists and designers.

The interesting issue of art-E-fact is that what is not visible: the technology is in background, hidden from the user. Therefore the user can be part of an interactive, intimate space where he/she can immerse into an entertaining and visually attractive story. He/she can interact naturally with gestures or easy to use tangible interfaces. The whole set-up resembles more an installation than an exhibition booth.

Results from the Usability Testing

Usability tests in cooperation with the Institute of Psychology at the University of Technology Darmstadt have evaluated the potential of the technology for education and learning purposes. Therefore, one group of test users has been instructed to find out particular information and a second group could explore the scenario without having a concrete goal. Measurements have been the mental effort, the achieved knowledge, and the perceived hedonic quality.



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