CHIRON workshop @ VSMM2008.

Sorin Hermon

STARC, The Cyprus Institute

CHIRON is a Marie-Curie EU-funded project providing research training fellowships for graduates wishing to start a research career in the field of IT applications to the research, conservation, and presentation of tangible Cultural Heritage. The project will consist of a joint training program and individual research carried out by fellows within a co-ordinated framework at participating partner institution. CHIRON has a duration of four years with an overall budget of about 2 300 000 Euro.

Papers present the research agenda of the Chiron fellows and will discuss project activities and plans for the future.

Museums, Communities, and Web 2.0

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As social edifices in the sphere of cultural production, today's museums are increasingly becoming advocates of inclusion and incubators of community. Pressures from various social groups expect museums to channel their multi-faceted functions in order to become an agency to represent culture, construct identity, and nurture social relations as they see the museum as a socially inclusive arena of sociability. As a result, there has been an increased interest and subsequent change in the ways in which museums mediate among and between communities. One of these changes is the way museums and cultural institutions use emerging web 2.0 technologies as a means of communication. By extending past the sole use of content provider which traditional web 1.0 technologies were offering museums, web 2.0's function as a communicative platform is rumination towards the changing paradigms of museum communication. For its ability to emphasize community and visitor participation, several museums are embracing or experimenting with web 2.0 technologies. This 'infrastructure of participation' begins to highlight the transformation of the museum's traditional authority as content provider towards the role of an interactive platform for communities. By encouraging more cooperative authority and multiple interpretations over objects and what they represent, these social media can give communities a voice in interpreting and determining the significance of their collections.

Through the application of museum centered Internet-based services such as social networking sites, RSS feeds, podcasts, and blogs, users can actively engage and influence the organization, creation, and sharing of online content. Undoubtedly, these online platforms infused with concepts of collaboration, community and open dialogue offer the potential to transform our capacity to experience and interact with the museum as well as each other. Through examining museums with existing web 2.0 applications we can begin to explore the interplay between the role of social media and its effect on transforming the museum into a more community-based institution. By seeking to contextualize these social dynamics involved in applying web 2.0 technologies into the museum, this research aims to expand our understanding and uses of the various possibilities of social media.

The main research programme focuses on the evaluation of the effect of Information Cultural Technology on end users in the cultural heritage sector. More specifically through our research aims we have explored issues centered on user-generated content in museums and the interconnectivity between institutional practices and spheres of public participation. The first phase of the project focused on deconstructing and examining the many issues related to employing Web 2.0 technologies in the museum. Ultimately, through this first phase of the research we seeked to establish a strong and comprehensive foundation for understanding the theoretical framework of the uses of Web 2.0 in museums. The second phase of the research entails a more practical approach to these issues

inclusive of case studies and focus groups centered on the way these emerging social media can effect the communication of the museum with its audience.

Visibility of Chalcolithic mortuary sites in the Southern Levant: GIS perspectives.

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Geographical Information Systems (GIS) provide archaeologists with a powerful set of tools for management, analysis and research of cultural resources. A largely used analytical tool is the **viewshed analysis** that determines the visible area from one or many observation points. Visibility and intervisibility have always been important in archaeological analyses and interpretation. The level of single sites visibility or intervisibility within a group of sites has long been acknowledged as having played a role in the structuring of archaeological landscapes.

The aim of this work is to analyze the position of the Chalcolithic mortuary sites, in the Southern Levant. Viewsheds of all such sites have been generated from their location and the visible area is analyzed in order to identify patterns of relations between the location of sites and their visibility-intervisibility in the landscape.

The good, the bad and the ugly: the wild west of online coin sales

Maria Sifnioti

PIN scrl, University of Florence

This is a presentation of work done during a CHIRON fellowship. It is part of a larger European project, named COINS, that has as one of its aims the discovery of illegal ancient coins on the internet. The CHIRON part deals with the searching of the web and the fetching of images. These images and the information retrieved, are compared against a police-updated database of stolen/missing coinage.

This talk is a short trip through:

*EBay, and how it has been used for illegal deals (coins and other things)

*Search engines: how google (and engines in general) really work and what problems we faced

*Images: Why fetching the whole of flickr is not a good idea - issues and limitations.

Augmented Objects - See the Artifact, Feel the Replica.

Thibaut Weise

Computer Vision Laboratory, ETHZ

We present a 3D in-hand scanning system that allows you to scan objects swiftly by turning them in front of our real-time scanning system. Due to real-time reconstruction the user can see how the virtual representation is built online and fill any remaining holes. This makes scanning a matter of seconds and leads to high-throughput scanning as required in cultural heritage. We further demonstrate an augmented reality setup that allows users to (finally) touch objects in a museum.

However, instead of holding the real artifact, the user handles a cheap replica, while still seeing the real object in his hands. Furthermore the method can be extended to interactive guides where parts of the object are augmented with additional information.

Automated Hand Animation for Museum Applications

Henning Hame

Computer Vision Laboratory, ETHZ

Animated scenes that illustrate how prehistoric objects are handled by a human hand can bring exhibits to life. We aim at the automatic production of such scenes by demonstration, i.e. by tracking a hand holding the respective object in front of a camera. Therefore, a visual hand tracking system based on depth data is being developed. Hand tracking in general is difficult because of the various possible hand articulations. Additionally, the object within the hand causes severe occlusion of the hand in the camera picture. However, it is possible to exploit constraints implied by hand anatomy and by the object itself. We present our system and show how all available information is combined to find the most likely hand pose in each video frame.

Online access to digital collections

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The introduction of Information and Communication Technologies to the cultural sector has provoked a complete transformation related to many different aspects. This also affects the conceptual frameworks related to the cultural realm which need to be reconsidered. ICTs offer considerable possibilities for supporting cultural institutions, in terms of conservation, dissemination and sustainable cultural development and that is why many museums strive to keep pace with the opportunities offered by new technologies and user services. The creation of institutional websites is one of the most widespread technologies implemented by museums. Having started with the "electronic leaflet" approach with basic information and static content, museum websites have now moved to a more advanced stage. Expectations of visitors and users, together with social and technological developments, have recently influenced an expanding trend among museums to offer wider inclusion and greater versatility in the presentation of collections and related information in their digital spaces.

A growing number of museums around the world are moving further in this direction, providing online access to their collection information systems via their websites. This is part of a wider effort of cultural institutions to increase public access to the collections they hold and to the associated information for all types of audiences. However, the effectiveness of these tools has never been tested so far, nor has its use been examined with any in-depth research study, despite the increasing pressure on museums to provide online access to their collection catalogues. In most countries considerable local, regional, national, or European funds are spent to encourage museums to computerize information about their holdings and to provide public access to these via the web. Yet, we still know very little about how these resources are actually being used by different types of users.

The present research project aims to address this gap, studying how cultural digital collections are used by end users and identify some clearer patterns of use. Using a number of case studies from around the world, it will analyze user profiles and exploration paths, using both quantitative (e.g. weblogs) and qualitative methods (e.g. focus group discussions) and accepting the limitations and advantages of each in illuminating a complex phenomenon. The project will investigate the effect of online access to collection databases on specialized researchers, but also school children, and life-long learners. It will also examine how these catalogues are being used and how this relates with the experience of (physically) visiting the museum and viewing the real objects. This will be related with the different communication and technological approach which each museum has adopted in presenting its collection on the web.

At the first stage of the research, museum websites from different countries were selected and analysed. The analysis identified four types of presenting digital contents, each with different features. After this identification of groups based on the type of web presentation, the research project focused on the museums that presented digital databases of their collection on their website. A questionnaire was sent to all these museums investigating issues of the design of the collections' databases and of their use by virtual visitors. At a later and final stage, the research will deal with qualitative methods, such as interviews or focus groups, to gather and analyze users' experiences regarding catalogues and online collections of museums' websites. After having done all that, the research aims at identifying and highlighting some patterns of use of those digital resources in order to try to find solutions to the needs and expectations of virtual visitors.