

VSMM 2008

Digital Heritage

Proceedings of the 14th International
Conference on Virtual Systems
and Multimedia

Project Papers



20–25 October 2008
Limassol, Cyprus

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Cover image: The young woman here is holding a measuring stick for a Roman foot and is labeled as KTICIC, short for the Founding Spirit or the Creation. The mosaic can be seen in the Eustolios House, in the ancient Greco Roman city of Kourion in Cyprus that was destroyed by an earthquake in 365 AD. Photo: M. J. Ioannides.

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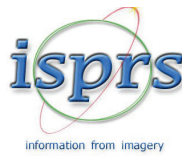
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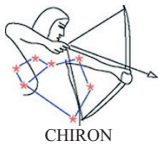
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Foreword

These conference proceedings contain a selection of papers that focus on multi-disciplinary research involving both Cultural Heritage (CH) Informatics and also the use of technology for initial data-capture and digitization, information data-processing, reconstruction, modelling, visualization, documentation and archiving, as well as visualisation of results and dissemination to the scientific and cultural-heritage communities and to the public. The contributions in these proceedings will definitely assist all experts involved in Cultural Digital Heritage in restoring, renovating, protecting, documenting, archiving, and monitoring history and prehistory, to secure this information for years to come. It is clear that a worldwide collaboration in this area will help make the past accessible to the present and the future.

Cultural Heritage is being transformed by the nature of digital representation of culture in which production, documentation, and distribution of an artefact are one and the same. Understanding and defining digital cultural heritage has implications for documentation practices and the experience of cultural institutions.

Digital devices provide unique access to archives and cultural exhibits, enhancing the capacity of museums and collections to encourage community building and civic engagement. Collection databases once used solely by museum professionals are now being made available locally and globally through the Web. Increasingly, access to cultural heritage is digital and experienced through electronic images and facsimiles. Digital tools and information and communication technologies are merging as the basis for preserving cultural heritage. Digital 3D modeling provides precise and complete documentation of cultural heritage objects and sites and should be used in conjunction with traditional techniques. Of great interest to the scientific community in the last few years, especially in the areas of architecture and preservation, are 3-D modeling, visualization and animation of cultural-heritage monuments and sites. The cooperation between photogrammetry and computer graphics has led to the development of new tools and techniques that are particularly useful for the documentation and archiving of cultural heritage in a digital format. These new tools and techniques include not only photogrammetry, but also 3-D reconstruction, visualization, animation and virtual reality. Technical achievements in modeling, rendering, and animation have made possible the creation of virtual environments, providing a convincing visual experience of cultural heritage structures and sites.

The island of Cyprus is a particularly appropriate venue for a conference on Virtual Systems and Multimedia dedicated to CH because of the long and rich pre-history and history of the island. The historical and archaeological context of Cyprus is the physical and ideal setting of this conference. The past story of Cyprus is the history of the interaction of the cultures and peoples of the lands surrounding the Mediterranean Sea, which was the central means of communication, transport, trade and cultural exchange between diverse peoples. Its history is important to understanding the origin and development of the Mesopotamian, Egyptian, Persian, Phoenician, Jewish, Greek, Roman, Arab and Ottoman cultures and, hence, is important to understanding the development of Western civilization as we understand and experience it today.

The roots of cultures and civilizations are embodied in their architectural structures and archaeological sites, and this cultural heritage should be preserved for future generations. The importance of preservation can be seen in the efforts of international organizations to document important structures and sites. UNESCO and ICOMOS have called for all national and international organizations that are responsible for manmade monuments to document cultural-heritage objects and sites with methods that include traditional and newer, innovative technologies. The integration of these technologies offers great promise and the use of digital technology in particular has rapidly changed documentation techniques.

The importance of Digital Cultural Heritage is evident by the participation and cooperation of a large number of people and organizations including the following:

- The 14th International Conference on Virtual Systems and Multimedia VSMM 2008, dedicated on Digital Heritage (<http://www.vsmm.net/>)
- The 38th CIPA International Workshop dedicated on e-Documentation and Standardization in Cultural Heritage (<http://cipa.icomos.org>)
- The 2nd Euro-Med Conference on IT in Cultural Heritage.

We extend our thanks to all those, whose labour, financial support, and encouragement made this joint event possible. The International Program Committee, whose members represent a cross-section of Archaeology, Computer Graphics and Design, Architecture, Surveying, History and Engineering worked tenaciously and finished their work on time.

Especially Mr. Nikolas Valerkos, who designed and managed the webpage and Dr Andreas Lanitis who supervised the web-based submission system and guided the effort that published these proceedings. We would like also to express our gratitude to our co-organizers The Cyprus Institute, the Department of Antiquities in Cyprus and the Technological University of Cyprus. Finally, our institutional sponsors, the Ministry of Education and Culture, the University of Cyprus; and our official carrier, Cyprus Airways who provided money and 'gifts of kind' that made the conference possible.

Our Keynote Speakers, Javier Hernandez-Ros, European Commission, John Van Oudenaren, World Digital Library, *Library of Congress*, Massimo Negri, Europeana and European Museum Forum; Prof. Donna J. Cox, *University of Illinois at Urbana-Champaign*; Vassilios Tsingas, Elliniki Photogrammetriki Ltd; Kareem M. Darwish and Ahmed El-Shimi, *Cairo Microsoft Innovation Center*; are not only experts in their fields but also visionaries for the future of IT in CH. They promote the e-documentation of the past in such a way for its preservation for the generations to come.

Most of all we would like to thank the Cyprus Government, the European Commission, UNESCO WHC, ISPRS, ICOMOS, VSMM-Society and CIPA, that entrusted us with the task of organizing and undertaking this unique event and wish all participants an interesting and fruitful experience.

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