



VC-DCH, Visual Computing in Digital Cultural Heritage

**A Special Track of the
9th International Symposium on Visual Computing (ISVC'13)**

<http://www.isvc.net>

July 29-31, 2013, Crete, Greece

Scope:

Cultural legacy is one of the world's most diversity issue. It is a beacon that draws millions every year to our churches and monuments, to our museums and libraries, as well as to concert halls and festivals. Nearly all commentators agree that cultural and creative industry has moved closer to the centre of the economic action mainly due to the recent advantages in information and communication technology. Surveys indicate that cultural and creative industry represents 4.5% of total European GDP and for 3.8% of the workforce. Digital cultural heritage promotes the development of *high personalized, mixed reality and augmented e-services* that add value to CH assets and make them re-usable in a wide spectrum of real-life applications (advertisements, leisure, film industry, education, smart TV services, etc).

The main goal of this special track is to promote research of visual computing in cultural heritage. The objective is to analyze, design, research, develop and validate an innovative framework integrating the latest advances in different scientific disciplines that cover the whole lifecycle of Digital Cultural Heritage (DCH) research (such as data acquisition/ capturing, data pre (post)-processing, modelling, semantics and symbolic representation, metadata description, repository and archiving, visualization and media production through mixed/augmented enabled technologies, personalized and interactive multimedia interfaces) for a cost-effective preservation, documentation, protection and presentation of cultural heritage. The track targets all aspects of Digital Cultural Heritage ranging from tangible (books, newspapers, images, drawings, manuscripts, uniforms, maps, artefacts, archaeological sites, monuments) to intangible content (e.g., music, performing arts, folklore, theatrical performances) as well as the respective inter-relationship (e.g., visualizing buildings along with humans activities taking place in them). Exploiting data acquisition and capturing research, the research conducted builds personalized and adaptable interfaces that emerge new cultural experiences and services, enriched with virtual surrogates through the use of advanced mixed and augmented reality enabled technologies, and allow re-using cultural heritage assets in real application environments, such as the protection of CH, education, tourism industry, advertising, fashion, films, music, publishing, video games, TV, that will be directly exploitable by the private sector.

Topics:

The topics of interest include but are not limited to the following areas:

- **Data Acquisition and Capturing techniques for achieving affordable but of high precision digitization:** *Research on digitization technologies for decreasing capturing complexity through low cost devices that combines depth information in real-time constraints and compare such smart sensors with imaging technologies (enhanced through the use of computer vision tools, data processing and 3D modelling)*
- **Computer Vision Tools and semantically enriched pre (post) data processing, filtering and feature extraction:** *Research on computer vision and data post processing with the purpose of automating 2D and 3D content digitization processing, through OCR and 2D/3D geometrically enriched features accompanied with visual matching and learning methodologies.*
- **Semantic signatures transforming 2D/3D visual signals into symbolic representations as regards tangible and intangible cultural assets:** *We seek for research that combines textual, photographic, materials, geometric, visual and semantic characterization in order to transform the captured the N-dimensional visual signals into high level entities (metadata) on the use of ontologies (use of text, image, material information and 2D/3D simultaneously in the same ontology).*
- **New interoperable metadata formats that permit easy repository, archiving and harvesting of both tangible and intangible cultural heritage assets:** *Research at creating an efficient metadata and interoperable format that permits easy archiving of the new forms of captured CH objects in digital repositories (including material description, and chemical analysis of restoration processes).*
- **Virtual scenes and mixed reality methods:** *Research on advanced methods in the area of 3D/4D rendering of planet-size geographic (Geographical Information Systems GIS) and/or architectural environments, even under a perceptualized way, enriched with animation (e.g. characters) using a virtual globe approach that will offer a unique, homogeneous and intuitive interface to access any cultural knowledge in its geographic context (integration in tools such Google Map and Google Earth).*
- **New forms of cultural experiences and services:** *Research on technologies that emerges a series of new applications that is boosted by the DCH research, including virtual surrogates, mixed and augmented reality schemes emotional interfaces.*
- **Research alignment with current standardized technologies:** *Special emphasis will be given in the proposed research for aligning the conducted research with specifications adopted in digital cultural heritage metadata repositories (such as EUROPEANA, Memory of the World, Library of Congress) to preserve and pass cultural heritage to future generations of Europeans (possible interconnections of the digitization and capturing protocols, mixed reality enabled technologies, structure of metadata and formats adopted in EUROPEANA digital library in order the increase the research impact.*

Paper Submission Procedure:

Papers submitted to ISVC 2013 Special Track must not have been previously published and must not be currently under consideration for publication elsewhere. Manuscripts should be submitted in camera-ready format and should not exceed **12 pages**, including figures and tables (see <http://www.isvc.net> for details). All papers accepted will appear in the symposium proceedings which will be published by **Springer-Verlag** in the **Lecture Notes in Computer Science (LNCS)** series.



Important Dates:

Paper submissions	May 10, 2013
Notification of acceptance	June 10, 2013
Final camera ready paper	June 28, 2013
Advance Registration	June 28, 2013
ISVC'13 Symposium	July 29-31, 2013

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