

DAILY PROGRAM
KEYNOTE SPEECH

09:00-10:30		KEYNOTE PRESENTATIONS		
10:30-11:00		POSTERS SESSION		COFFEE BREAK
		<i>Room Plenary</i>	<i>Room Exhibition</i>	<i>Room Multipurpose</i>
11:00-12:30	TS1 - Data and Sensor Integration for Heritage Documentation	TS2 - 3D Inspection & Doc of Decorated Surfaces	DEMO session	
12:30-13:30		LUNCH BREAK		
13:30-14:30		POSTERS SESSION		
		<i>Room Plenary</i>	<i>Room Exhibition</i>	<i>Room Multipurpose</i>
14:30-16:00	TS3 - International Cooperation for Heritage Documentation and Conservation I	TS4 - Point Cloud Processing II	TS5 - Data Management and Archiving	
16:00-16:30		COFFEE BREAK		
16:30-18:30		EXCURSIONS: The walls of Avila		
18:30-20:00		TAPAS TOUR + SCIENTIFIC COFFEE		

Mona Hess (Otto-Friedrich University of Bamberg, Germany): DOCUMENTING THE TANGIBLE AND THE INTANGIBLE - QUALITATIVE AND QUANTITATIVE VALUES IN CULTURAL HERITAGE AND A DIALOGUE BETWEEN HUMANITIES AND STEM SUBJECTS


<http://www.panatec.net/>

Measurement & Testing


Athanasios Moysiadis (University of Thessaly, Greece): CHALLENGES ON THE DOCUMENTATION AND OUTREACH OF THE INTANGIBLE CULTURAL HERITAGE


INTERVIEW

ABHIJIT DHANDA (Carleton University, Canada)
- THE FUTURE OF YOUNG GENERATIONS IN HERITAGE -



Things change quickly when technology is involved. Younger generations have the responsibility to embrace technological advancements and help to push them forward for heritage. Improvements will continue to make technology, on a fundamental level, cheaper, while also extending the limits to what heritage documentation can achieve. As a result, there are two things that I think we (as the younger generations) should keep in mind thinking about the future of heritage and its documentation. First, cheaper documentation is better. More heritage can be documented as more tools become available. But the democratization of heritage documentation comes with challenges as well: developments in technology have led to more 'black box' approaches that tend to increase the knowledge gaps and can lead to unintended results that work against the conservation of heritage. The number of people with access to 3D documentation is rising. So, I think it is essential for younger generations to take on the mantle of educating others and sharing their knowledge, so we can all become better at what we do – continuing and improving access to CIPA's educational initiatives. Secondly, the limits to what we can do with heritage documentation are expanding. We can now document heritage sites and objects at greater detail than ever before, and we can share the stories of heritage globally in the click of a button. But super-resolution is not the end-all or be-all solution. As a technology enthusiast myself, I think that it is important that we keep the purpose of our documentation in mind. We should be continually asking 'why?', and not only to ourselves, but to our collaborators and other heritage professionals as well. Is what we are doing for the benefit of the heritage and its conservation, or are we just using technology for technology's sake? We can reach more people by keeping open lines of communication between not only each other (in organizations like CIPA, ISPRS and ICOMOS), but also with other heritage professionals, those who seek to become heritage professionals and the general public. In that way, I think we (the younger generations) can ensure the documentation of world's heritage for a better and more cultured future.

INTERVIEW

MONA HESS (Otto-Friedrich University of Bamberg, Germany)
- BRIDGING THE GAP BETWEEN HUMANITIES AND TECHNOLOGIES? -



Dear CIPA Symposium participant, would you say that you are a representative of humanities or of technologies/STEM (Science, Technology, Engineering and Mathematics) subjects? Let's look at the extreme opposites: Humanities carry the following principles across many subjects: they value the critical argumentation – the pros and cons, they are insistent on the transparency of their sources; they often deal with material culture and its related issues (such as immaterial / intangible cultural heritage). Overall, humanities disciplines value creativity, unpredictable originality and the uniqueness of the creative process. The publication of a book or two as sole author is a requirement to establish ones' role as expert in the field. On the

other hand, approaches and methods of humanities might be somewhat alien to experts from the STEM subjects. Great importance is given to the rigorous conducting of experiments, the collection of data/numbers/facts, to produce a verifiable evidence. Results are validated by repetition of an experiment or processes that ideally lead to the same results (reproducibility of research). The outcomes are technological innovation & cooperation and papers with 6+ co-authors from a collaborative team are normal. You, as a participant of a CIPA conference, are invariably multi- and interdisciplinary person. Most of you will have undergone multiple formations in different fields and have acquired an expertise that automatically bridges the gap between disciplines. You are part of a new generation of heritage practitioners and researchers with a foot in the humanities and a foot in disciplines that are technology-based. Your new discipline is called "Digital Humanities", "Digital Heritage" or "Digital Technologies in Heritage Conservation". This, of course, needs interdisciplinary communication and both sides, humanities and STEM subjects, need to strive for continued education on the opposite side. In digitisation campaigns the criteria of both need to be respected and included as requirements. In these ongoing developments and new field of "Digital Heritage", the principles of 3D optical measurement techniques need to be understood by all stakeholders, just like the state-of-the-art in the field of heritage management and conservation needs to be understood by technologies experts. It is important to consciously document tangible and intangible heritage - with qualitative and quantitative values - and give a foundation to fit-for-purpose digitisation and recording through a dialogue between humanities and STEM subjects. So, as recommendation, speak to everyone and tease out their requirements for an excellent digitisation of heritage.

INTERVIEW

DIMITRIOS SKARLATOS (Cyprus University of Technology, Cyprus)

- UNDERWATER CULTURAL HERITAGE (UCH) DOCUMENTATION AND VALORIZATION -



Q: Dimitrios, which are the particularities of UCH?

A: Archaeologists will probably have a long list of particularities about UCH, but speaking as an engineer, the only difference I see is environmental limitations: they are a lot in fact and rapidly increase alongside the depth. There are not many choices for underwater data acquisition, but photogrammetry has dominated the UCH documentation for many decades and is by far the most popular method. SfM-MVS methods are popular in several disciplines, including archaeology, being invaluable tools for shape and texture capturing in variable resolutions/details. Underwater sites also set serious constraints on the approachability of the site. There is not much time for data acquisition, nor revisiting is an easy option. This makes any task, including documentation, difficult, requiring prepared and properly performed actions. Anyone with photogrammetric experience will easily understand the shortcomings these limitations imply in the acquisition process. Moreover, in UCH documentation there is a lack of (or extreme difficulty in) establishing a stable underwater network, if monitoring or revisiting is necessary. Georeferencing is an even more complex task.

Q: How depth is affecting documentation?

A: With a sense of bitter humor, I would say that it mostly affects the cost. Oil industry has provided solutions and technologies for any underwater task. For UCH, depth is a critical factor, since it may vary from a few cm to a couple km, each case having its own complications. For example, shallow water documentation may be handled by drones and two media photogrammetry, so no need to wet your feet. While for recreational diving depths (<18m) the problems are not that profound, in technical diving depths (<60m) one should consider time limitations, nitrogen narcosis and illumination conditions before attempting photogrammetric documentation.

Q: Dimitrios, what's the expertise one must master to get involved in UCH documentation?

A: Diving is a good starting point, as understanding the underwater environment, helps a lot to plan solutions. A lot of practice on underwater photography, photogrammetric background and knowledge are welcome, but not necessary, since SfM and MVS will overcome most shortcomings. There are many people, from different disciplines, who can successfully record UCH sites. They all have one thing in common: the passion for diving.

Q: Do you foresee any new technologies significantly affecting UCH documentation and valorization in the next years?

A: Although trivial, I would say that VR/AR an excellent valorization tool, since the sites are not reachable, to public nor to humanities experts. Hence, they are an invaluable tool for experts to revisit the site, as many times and as long they wish to study it, and at the same time provide an exceptional option to public to 'reach' UCH, which is otherwise unreachable and mostly unknown. Despite the localization and navigation difficulties in underwater VR/AR, it seems that this tool will help both diving tourists, at those sites which are open to the public, and humanities experts to increase productivity during their dives at the site.

