

Cultural informatics research and applications

State of the art and open challenges

There are currently more than 19.000 museums in Europe and even more archaeological sites. And given that the preservation of cultural heritage is at the very core of the foundations of the European Union – the Lisbon treaty, a constitutional basis of the European Union, states that the Union “shall respect its rich cultural and linguistic diversity, and shall ensure that Europe's cultural heritage is safeguarded and enhanced” – it should come as no surprise that in the period 2007-2013 alone the EU invested a whopping 4.5 billion EUR in cultural heritage and related research.

In the early days, much of that was directed towards digitization, producing a vast number of digital documents. Characteristically, Europeana connects more than 50 million objects from over 3 thousand institutions, a number that continues to rise as more institutions become involved and more collections are included. More recently, emphasis has also turned to the analysis, presentation, sharing and exploitation of these resources, as well as to the sustainability of the developed approaches, leading to a large number of research efforts and funded projects in the broader area combining culture and technology, giving birth to the scientific field of cultural technology or, as it is more commonly referred to, cultural informatics.

Today, we find ourselves at a turning point, with the field of cultural informatics undergoing vast and rapid changes. From the point of view of humanities, we see new approaches to the examination and presentation of culture and history, including greater emphasis in storytelling and in the aim to stimulate reflection and even reinterpretation. From the point of view of technology, we see previously unimaginable reasoning and analysis powers via solutions such as deep learning, developments in smart interconnected devices that have the capacity to revolutionize the notion of space and the way we interact with it and advances in AR/VR technologies that open new ways to the delivery of content. And from the point of view of cooperation between humanities and technology, we are in the era when the boundaries are starting to fall, bridges are being formed and true, deep, robust synergies are formed, leading to new opportunities and perspectives.

Given the rich history, the number of museums and sites, and the unmatched research pedigree, of course Europe is the leader in the application of cultural informatics and in the research pushing the field forward. Tellingly, 2018 has been designated as the European Year of Cultural Heritage, underlining the Union’s intent to further push forward in this domain.

Yet, and despite the support and augmented funding, the overall feeling is that we have not yet managed to unlock the full potential of the implemented research and produced technology. The fragmentation of the field, with humanities research published in one set of media and technological research in another, and with the researchers often working in silos, has not allowed for one to build upon the other’s achieved results. Research projects find themselves re-inventing and re-developing

solutions already studied by others, and practitioners find themselves experimenting with solutions that others have already tried.

As a response, the “Cultural informatics research and applications: State of the art and open challenges” workshop is a part of a broader effort to consolidate European research and application efforts in the area of cultural informatics, facilitate the exchange between projects and promote re-use of tools and resources. The ultimate goal is that tools, technologies, know-how, methods and best practices can be exchanged, thus significantly improving our efficiency and management/allocation of public and private resources.

Ours is not the only effort in this direction. For example, the COST framework held the “COST Connect: Cultural Heritage in the Digital Era” in 2017 and this year the European Commission is organizing the “Fair of European Innovators in Cultural Heritage”, with both events aiming to facilitate the meeting and cooperation between researchers and practitioners. What is different in our effort is that, in addition to providing a medium for exchange, we also strive to achieve a more structured analysis of the opportunities available and challenges faced by most of those who are active in our domain, so that overarching solutions can be sought.

We have been working in this direction through a variety of channels, including projects and networks that we are involved in. As far as the current workshop is concerned, to some extent the foundations were set earlier in 2018, during a workshop organized at the premises of the University of West Attica, in Athens, by European projects CrossCult and Emotive. In that workshop representatives of EU funded projects had the opportunity to discuss issues related to technology, humanities, dissemination and exploitation of project outcomes.

Based on the outcomes of the first workshop, and also having considered feedback from the European Commission, we meet again this fall aiming to further and deepen the discussion in three directions that have been identified as fundamental and critical, namely a) IPR issues, b) exploitation, impact and sustainability, and c) open challenges.

This volume includes notes on lessons learnt, open challenges, and available tools and methodologies by some of the workshop participants. We should note, though, that this is by no means a full summary of the workshop proceedings. First of all, while an important number of projects and research groups are represented herein, a considerably larger number have expressed interest in joining the discussion in Cyprus. More importantly, this volume describes what is known before the workshop and aims to serve as a tool to assist participants get familiarized with the issues. It is the actual exchanges and discussion that will be held in Cyprus that will form the core product of the workshop; a product that we will make sure to share both with the European Commission and the broader community, hoping it will help pave the path forward.

We should clarify that our private effort does not aim to replace the role of the European Commission in outlining the strategies regarding the format and direction of European research in cultural informatics. Quite the opposite, our hope is to support the Commission, by gathering, analyzing and providing insight regarding the issues faced by researchers and practitioners and the interventions they believe could facilitate their work and augment its impact and longevity.

Closing, let us not forget to express our gratitude to everyone in the community for embracing and supporting our efforts. Special thanks are due to Mr. Giorgio Costantino, REA Project Officer, for providing insight, helping in promoting the event and serving as a valuable link to the Commission, to Dr. Marinos Ioannides, EU ERA chair on Digital Cultural Heritage and UNESCO chair on Digital Cultural Heritage at the Cyprus, who shares our vision and has kindly hosted our meeting and to the members of the program committee that provided their feedback towards the development of this volume.

We hope you will enjoy reading this volume and more importantly we hope to see you in Cyprus, and in our future meetings, so that we can together look for ways to further cultural informatics research and application in Europe.

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