



Editorial

An Overview of Big Data Analytics for Cultural Heritage

Manolis Wallace ^{1,*}, Vassilis Pouloupoulos ¹, Angeliki Antoniou ² and Martín López-Nores ³

¹ FAB LAB—Knowledge and Uncertainty Research Laboratory, Campus of the University of Peloponnese, 221 31 Tripoli, Greece

² Department of Archival, Library & Information Studies, University of West Attica, 122 43 Egaleo, Greece

³atlanTTic Research Centre for Information and Communication Technologies, Department of Telematics Engineering, University of Vigo, 36310 Vigo, Spain

* Correspondence: wallace@uop.gr

Cultural heritage is a domain that produces vast amounts of data, but it is also where the meaning of the data is crucially important, particularly to the extent that it refers to people's opinions, perceptions, and interpretations of their past and their present, or to people's feelings, preferences, and attitudes. As such, it was a natural development that big data analytics found its role in the field and produced some efficient tools and methodologies.

In this Special Issue, we have focused on the methods and tools of big data analytics that have been specifically developed for the domain of cultural heritage, as well as on experiences from the adaptation and/or application of general-purpose solutions to the domain.

Of course, one cannot overlook the fact that big data analytics and cultural heritage are domains that stem from fundamentally distinct sciences. This means that very few people possess suitable backgrounds in order to successfully tackle their combination. As a response to this, in [1], we see an early theoretical basis that brings us closer to shared cultural experiences in mixed reality systems and, in [2], we see a data lake for multi-faceted data analytics in cultural heritage. Both works place emphasis on providing powerful and ready-to-use solutions that do not require a strong IT background, making the proposed technologies more realistically available and applicable to the cultural domain.

The way each one of us experiences culture is a deeply personal matter. Therefore, the need for personalization cannot be ignored in our domain. On the other hand, rich information upon which to base personalization choices is rarely available in most cultural experience scenarios. Standardized visitor types are a common solution to this. In [3], we see how these types can be constructed and classified automatically via social media data while, in [4], we see how they can then be used to generate personalized recommendations for locations to visit and activities to engage in. The work in [5] further develops on this, allowing for the combination of standardized profiles.

These works focus on how to best serve those who are already familiar with and interested in a cultural knowledge base, site, or collection. However, how do we extend this knowledge to the general public in the first place? In [6], we see a novel search engine optimization approach that aims to improve the visibility of cultural collections on the Web, thus promoting the domain's marketability and sustainability.

Culture is a broad topic that is connected to almost every aspect of our lives; in many cases, it is connected to aspects which the primary focus of is anything but cultural. In [7], we see how cultural data can be used to stimulate student interest and promote learning performance, while in [8], we learn about the use of computer games in heritage preservation; the latter work is also related to the aforementioned issue of personalization.

Let us not forget that culture is not just about the past. Who we are, how we think, and how we interact in the modern world are manifestations of modern culture. In [9], we see how a discussion on feminism can be tracked and analyzed, in an approach that can be directly applied to other concepts which are frequently debated online.



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Finally, in [10], we take a broader look at the past, present, and future of the domain, discussing how technology drives and redefines the way we perceive and interact with culture.

Over the course of the last three years, while working on this Special Issue, we have witnessed great developments in big data analytics. The cultural applications of big data analytics have also been maturing and evolving rapidly and there is a clear potential for more fascinating developments in the times to come. For this reason, we are extending our editorial journey by launching the second volume of the Special Issue where we are aiming to explore the more recent developments in the field [11].

Conflicts of Interest: The authors declare no conflict of interest.

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