

Forum: Special Conference on Culture & Heritage 1 (SPCCH1)

**Issue:** Digital innovation in cultural heritage preservation

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## Introduction

In today's globalized and digital world, cultural heritage is more and more under pressure to disappear. Increased numbers of careless tourists, more powerful natural disasters due to climate change, armed conflict amidst heightened international tensions, and rampant urbanization all pose a grave threat to culturally significant locations across the globe. Ranging from historic monuments to the intangibles of ceremonial dances, these core elements of humanity are on the verge of being lost to history. Ensuring the safe preservation of cultural heritage is imperative in order for the world to preserve and learn from its history, its mistakes, and its great feats.

Revolutionizing the modern world, the wide adoption of computers has greatly improved and become the core of our society and has even bloomed into a digital culture. The solution to the pending problem that will be expanded upon during the conference is the use of digital means in order to preserve cultural heritage. The utilization of Artificial Intelligence (AI) can be a greatly useful yet dangerous tool in the protection of cultural nuance.

# **Definition of Key Terms**

#### **Artificial intelligence**

The use of computer systems to perform tasks and results, mimicking human intelligence through machine learning techniques.

#### **Cultural heritage**

The global term encompassing both tangible and intangible cultural heritage, it can be defined as the legacy of a people inherited from the past and can be continuously practiced till present day.

### **Digital preservation**

Is the process necessary to access digital materials for as long as possible, beyond the limits of physical media.

## Digitization and digitalization

Digitization is the translation of a physical object or document into a format readable by computers. This differs from digitalization as it is the processing of said digitized material to make a change in the process of an institution (a new business model).

#### **Virtual tourism**

Virtual tourism is defined as the act of researching and experiencing travel destinations and attractions online, without physical presence required.

## **Background Information**

Each aspect of cultural heritage and its unique location therefore has a different challenge affecting it and requires a focused solution in order to be effective.

## Tangible cultural heritage

Accounting for all physical and man-made artifacts or structures related to a certain site that hold cultural significance, tangible cultural heritage faces physical damage from natural disasters or wars, loss, pillaging of the sites, defamation, natural age and human encroachment.

#### **Monuments and Sites**

Natural and environmental threats, including natural disasters, can heavily damage ancient sites. Rising sea levels impact many coastal locations as well. The threat of military conflict is also a continuous threat, risking the destruction of these sites. Such risks may require the utilization and development of Al-integrated rapid action mechanisms for immediate action.

#### **Artifacts**

Man made or modified objects, from tools to books, are especially difficult to protect due to their small nature (compared to buildings) and can easily be pillaged, lost and forgotten. The environment that these artifacts are located in can also pose a threat as changes in humidity, pressure and pollution can affect sensitive works of art.

## Intangible cultural heritage

Most accurately and internationally defined according to the 2003 Convention for the Safeguarding of

the Intangible Cultural Heritage, intangible cultural heritage can be described as "the practices, representations, expressions, knowledge, skills – as well as the instruments, objects, artefacts and cultural spaces associated therewith – that communities, groups and, in some cases, individuals recognize as part of their cultural heritage"<sup>1</sup>.

#### **Oral Traditions**

With rapid globalization, many indigenous cultures, languages and thus oral traditions are being omitted in favor of a "global" culture led by the western world. However, the promotion and usage of indigenous languages by content creators and users in social media platforms such as TikTok and Instagram play significant roles in revitalizing oral traditions and heritage elements. The revitalization of Maori language in New Zealand can be an example<sup>2</sup>.

## **Performing Arts**

Dances, rituals, theatre, music and many other forms of performances are ways for a culture to express itself through a community setting. The main threats to these types of cultural heritage are most commonly displacement from conflict, political censorship, a change in social and economic factors which enable them to be held publicly.

#### **Traditional Crafts**

Accounting for all the knowledge and skills to create traditional items that are often classified as artifacts, traditional craftsmanship is threatened by cheap foreign manufacturing. Because of this many master craftsmen and women are leaving their culturally significant jobs in favor of more western and "modern" corporate jobs that pay more.

#### The role of Al in preservation

Artificial intelligence can be a double edged sword both favoring the preservation of cultural heritage and streamlining the conversion or documentation, yet at the same time is limited to the content on which it is trained upon. Generative content is more and more flooding and overwhelming more traditional means of content creation.

#### The challenges of digital preservation

Digital preservation of cultural heritage, although it may seem to be an easily implementable solution to the issue, has one large challenge that must first be tackled: that of access to the internet. Although three-quarters of the population have access to the web, it still leaves 2.2 billion people without proper and reliable access to an internet connection. This means that there is only a certain amount of reachability of any action taken. Another major challenge for the use of proprietary and advanced technologies is the high cost and know-how associated with it in order to effectively use it.

# **Major Countries and Organizations Involved**

### **UNESCO (United Nations Educational, Scientific and Cultural Organisation)**

With 53 field offices and many more outer branches, UNESCO has a far-reaching network that seeks to protect cultural diversity. Some of the resolutions put in place over the years are:

- Charter on the Preservation of the Digital Heritage was adopted on October 17<sup>th</sup>, 2003<sup>3</sup>.
- Recommendation concerning the preservation of, and access to, documentary heritage including digital form was adopted on November 17<sup>th</sup>, 2015<sup>4</sup>.

### **ICCROM** (International Center for the Study of the Preservation and Restoration of Cultural Property)

ICCROM is an intergovernmental organization that works in close cooperation with UNESCO in assisting the Member Nations and providing the necessary tools for preserving any form of cultural heritage<sup>5</sup>.

#### **ICA (International Council on Archives)**

ICA is a significant NGO on data storage, digitization and the documentation of cultural heritage transparently. ICA aims to connect archivists and relevant institutions throughout the world to effectively utilize recordings and archives as a common heritage of humanity<sup>6</sup>.

## **Timeline of Events**

Date	Description of event
November, 16 <sup>th</sup> , 1972	The World Heritage Convention, which recommended the protection of cultural and natural heritage at a national level while introducing the World Heritage Committee and world heritage sites, was adopted <sup>7</sup> .
October, 17 <sup>th</sup> , 2003	Convention for the Safeguarding of the Intangible Cultural Heritage, which Recommends the protection of intangible cultural heritage at a global level.
August, 24 <sup>th</sup> , 2006	The European Commission adopts the "Recommendation on the digitisation and online accessibility of cultural material and digital preservation".
November, 20 <sup>th</sup> , 2008	Launch of the European Union (EU) digital library EUROPEANA, which grants free access to all of Europe's cultural heritage in a universally accessible library.
March, 24 <sup>th</sup> , 2017	United Nations (UN) Security Council unanimously adopts S/RES/2347,

condemning the destruction of cultural heritage while outlining the protection of cultural heritage during conflict and framing the use of digitization of information<sup>9</sup>.

## **Previous Attempts to Solve the Issue**

The preservation of cultural heritage stems from movements in the 1950s and 70s, including the early conventions adopted by UNESCO. More recently; since the 2000s, with rapid leaps in technology, there have been ongoing initiatives to digitize and preserve cultural heritage, especially advocated by the European Commission and UNESCO-affiliated bodies.

## **Possible Solutions**

## 3D rendering and data digitization

In order to preserve oral heritage elements including songs and language, it can be favorable to create an archive of voice recordings in order to protect their timeless knowledge. In the case of large scale buildings such as religious locations or historic sites; the development of 3D scanning, photogrammetry and videography can be the best way to approach the conservation of their unique cultural significance. This can reduce the number of tourists, which could pose a threat to structures through vandalism while contributing to reconstruction projects as done during the reconstruction of Notre-Dame. Immersive experiences can also future-proof these locations if they get lost to time due to disuse. One example is the usage of a 3D scanning to recreate the Shurijo Castle in Japan. Moreover, documented cultural heritage and resources can be saved and shared via Large scale social media platforms or governmental initiatives such as the EU's EUROPEANA online library, raising awareness of the diversity of cultural heritage and sharing engaging content, thus further-strengthening the international support for the preservation of cultural heritage.

## **Utilization of AR and VR applications**

Moreover, students and the public can be educated on cultural heritage and its protection extensively through various education and awareness programmes, establishing a universal understanding of humanity's common heritage through utilizing interactive technologies including virtual reality (VR) which offers the chance of virtually interacting with digital copies of such artifacts as well as augmented reality (AR), which can enhance experience in museums by providing in-depth information about artifacts. Finally, the integration of AI technologies into these applications and special programmes aiming the preservation of cultural heritage for better optimization can be a possible solution.

## **Endnotes**

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