

# Achieving cultural heritage with multisensory virtual reality technologies

## Alcançar o património cultural com tecnologias de realidade virtual multissensorial

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Virtual Reality (VR) technologies aim at transporting their users to a virtual space. From the different fields of application, cultural heritage is a field with much to explore. A fact is that everyday pieces of cultural heritage are lost, whether due to natural phenomena that can destroy the natural landscapes or cultural traditions that are slowly and naturally disappears. What if we could leverage Virtual Reality to mitigate this issue?

With VR, it is possible to recreate authentic virtual environments that depict reality. Therefore, it is essential to go beyond the standard 360 video-based VR solutions and embrace fully immersive multisensory VR solutions. By embracing multisensory VR technologies, it is possible to step up the effectiveness of VR technologies and make persons have a comparable experience to reality and, thus, deliver genuinely remarkable experiences in terms of enjoyment and memory of the experience (Gallace et al., 2021; Melo et al., 2020).

By concentrating efforts in recording or replicating historical places or events, it is possible to digitally preserve them to be experienced by anyone at a later point in history. One practical example is the Greek temple

Parthenon where the numerous daily visitors cause stress to the physical site and put its integrity at risk or natural phenomena such as the climatic changes, wildfires, or storms that make historical landscapes or monuments disappear. Another example is the intangible heritage recognized by UNESCO, such as the process associated with the wine-making process in the Douro region where the Porto wine is produced. More frequently, the processes are becoming mechanic, and the local knowledge regarding the whole wine-making process is being lost, from the wine-cutting techniques to the wine treading. With VR, it is possible to preserve this process and pass it along without the risk of being forgotten and lost forever.

All the above demonstrates that VR can be a crucial technology to ensure the digital preservation of culture and opens new research lines regarding how to recreate such authentic experiences, technology acceptance, its theoretical and practical implications, and its impact from a sociocultural perspective. Thus, we invite our readers to tackle this gap in the literature by submitting related work on this topic to Psychtech & Health Journal.

### REFERENCES

- Gallace, A., Ngo, M. K., Sulaitis, J., & Spence, C. (2012). Multisensory presence in virtual reality: possibilities & limitations. In *Multiple sensorial media advances and applications: New developments in MulSeMedia* (pp. 1-38). IGI Global.
- Melo, M., Gonçalves, G., Monteiro, P., Coelho, H., Vasconcelos-Raposo, J., & Bessa, M. (2020). Do Multisensory stimuli benefit the virtual reality experience? A systematic review. *IEEE Transactions on Visualization and Computer Graphics*.