DOCUMENTING, UNDERSTANDING, PRESERVING CULTURAL HERITAGE. HUMANITIES AND DIGITAL TECHNOLOGIES FOR SHAPING THE FUTURE: PREFACE

G. Tucci[1]*, C. Balletti[2], V. Bonora[1], F. Fassi[3], A. Spanò[4], E. I. Parisi[1], M. Previtali[3], G. Sammartano[4]

[1] Università degli Studi di Firenze, Italy – (grazia.tucci, valentina.bonora, ericaisabella.parisi)@unifi.it
[2] Università IUAV di Venezia, Italy – balletti@iuav.it
[3] Politecnico di Milano, Italy – (francesco.fassi, mattia.previtali)@polimi.it
[4] Politecnico di Torino, Italy – (antonia.spano, giulia.sammartano)@polito.it

The content of this publication aims to integrate scientific, technological, and humanistic expertise to define documentation systems that cover the entire lifecycle of artifacts, archaeological sites, historic buildings, and landscapes, employing cutting-edge digital technologies.

All the included papers were presented at the 29th CIPA2023 Symposium, titled "Documenting, Understanding, Preserving Cultural Heritage: Humanities and Digital Technologies for Shaping the Future". The selection of the contributions was made based on a double-blind review of full papers by the Scientific Committee.

The 29th CIPA Heritage Documentation Symposium took place from 25th to 30th June 2023, hosted by the University and the City of Florence. The CIPA2023 was organized by the University of Florence, in collaboration with the Polytechnic University of Milan, the Bruno Kessler Foundation, the Polytechnic University of Turin, and the IUAV University of Venice, and it was supported by the Tuscany Region, ICOMOS Italia, and the Italian Society of Photogrammetry and Topography (SIFET).

In today's context, there is a growing urgency to develop models for risk reduction, preventive conservation, and sustainable preservation of heritage that promote cultural participation, accessibility, and the enrichment of diversity and cultural expressions. The humanistic approach, which incorporates various forms of knowledge, empowers individuals to comprehend, interpret, and safeguard the heritage bequeathed by history. Without memory, there can be no history, and without sharing history, there is no future. Therefore, the connection between heritage and the humanities is intimate.

The contribution of *heritage science* lies in the technological innovation for cultural heritage, particularly in the realm of digital technologies, which offer innovative solutions for the preservation, restoration, requalification, and fruition of heritage sites, as well as for the broader cultural economy.

The contributions in this publication are aligned with the Symposium's themes, spanning from risk assessment for cultural heritage to the opportunities presented by new technologies for documenting archaeological sites, modern architecture, and underwater heritage. Topics of presented works also include virtual, augmented, and extended reality for cultural heritage, training experiences in heritage documentation, technologies changing education, artificial intelligence and cultural heritage documentation, monitoring of built heritage, new technologies enhancing accessibility in museums, digital technologies countering the destruction of heritage during conflicts, 3D reproduction of cultural heritage, 3D technology supporting heritage management and maintenance, virtual preservation, digital twins, information and data sharing.

The Symposium was preceded by a day of preliminary workshops (25th June) on specific topics featuring leading experts in their fields. The Opening Ceremony took place on the 26th of June in the Salone di Cinquecento at Palazzo Vecchio, followed by four days of 36 thematic sessions held at the Morgagni Teaching Center. In total, the Proceedings include 257 contributions, and more than 350 participants joined the event in person.
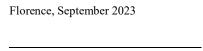
The Symposium featured four invited keynotes by distinguished speakers: Mario Santana Quintero (Secretary General of ICOMOS International), Claudio Margottini (President of the Italian IAEG group), Paola Pisano (former Minister for Technological Innovation and Digital Transition), and Sarah Kenderdine (digital exhibition expert and professor at EPFL).

Additionally, the program included four special sessions: the 4th edition of GeoRes (Geomatics and Restoration), the 10th edition of Arqueologica 2.0 - Documenting Archaeological sites, the Cultural Heritage Conservation and Digitization Forum - CHCD of ICOMOS China, and a special session dedicated to the Spoke 7 of PE5 CHANGES - Heritage at Risk.

A digital performance titled "il Fregio del Ceppo," directed by Pietro Bartolini was held in the Sala d'Arme of Palazzo Vecchio for two evenings, offering an opportunity to experience the intersection of theatre, digital technologies, and artificial intelligence.

As editors of this ISPRS volume, we extend our heartfelt gratitude to all the authors, the international Scientific Committee, and especially to the Organizing Committee for their valuable contributions to this publication.

We hope that academics, architects, restorers, engineers, decision-makers, and students interested in Cultural Heritage will derive significant benefits from its contents.

Florence, September 2023

---

* Symposium Director