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Massimiliano Lo Turco
Elisabetta Caterina Giovannini and Noemi Mafrici

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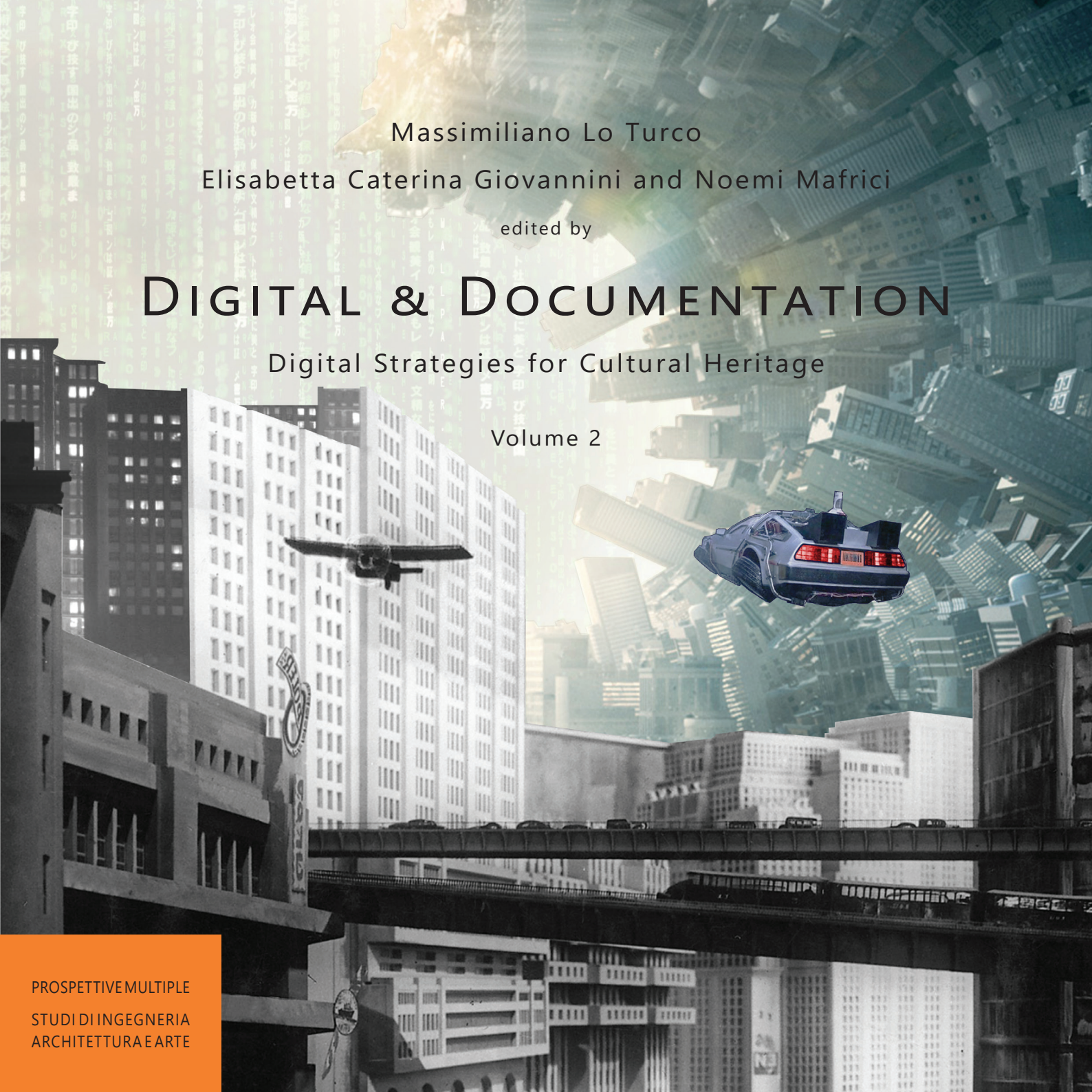
Digital & Documentation

Digital Strategies for Cultural Heritage

Volume 2



PROSPETTIVE MULTIPLE
STUDI DI INGEGNERIA
ARCHITETTURA E ARTE

Massimiliano Lo Turco
Elisabetta Caterina Giovannini and Noemi Mafrici
edited by

Digital & Documentation

Digital strategies for Cultural Heritage

Volume 2

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The volume consists of a collection of contributions from the seminar "Digital & Documentation: Digital Strategies fo Cultural Heritage", realised at the Politecnico di Torino on June 14th, 2019. The event, organized by the "BIM Acquisition as Cultural Key TO Transfer Heritage of ancient Egypt For many Uses To many Users REplayed" - B.A.C.K. TO T.H.E. F.U.T.U.RE. Project - team of DAD - Department of Architecture and Design of Politecnico di Torino, promotes the themes of digital modeling and virtual environments applied to the documentation of architectural scenarios and the implementation of museum complexes through communication programs of immersive fruition.
The event has provide the contribution of external experts and lecturers in the field of digital documentation for Cultural Heritage. The scientific responsible for the organization of the event is Prof. Massimiliano Lo Turco, Politecnico di Torino.

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Dipartimento di Architettura e Design

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The event “Digital & Documentation - Vol. 2” has seen the participation of professors, researchers, scholars and private institutions

University of Pavia

Fondazione Museo delle Antichità Egizie di Torino

University of Rome “La Sapienza”

University of Catania

PIN - Educational and Scientific Services for the University of Florence

Studio GLOWARP

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Institute for Heritage Sciences of the National Research Council

University of Camerino

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Un oggetto può dirsi culturale nella misura in cui resiste nel tempo

Hannah Arendt, 1961

Massimiliano Lo Turco

Politecnico di Torino

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Principal Investigator of the BACK TO THE FUTURE's project, developed together with the Museo of Antichità Egizie di Torino. Program Director of the Bachelor's Degree in Architettura/ Architecture of Politecnico di Torino since 2018.

DIGITAL RESOURCES AS OPEN ACCESS TO HIDDEN CULTURAL HERITAGE COLLECTIONS

Preface

Once upon a time...the story started in December 2016, following an original idea of Prof. Rosa Tamborrino: we went with some students to visit the Egyptian Museum of Turin to conduct a didactic experience using some Egyptian temples in Nubia as case studies. It was unusual that the School of Architecture of the Politecnico di Torino dealt with the cultural heritage of ancient Egypt.

The teaching experience, although linked to the course of the Master's Degree in Architecture for Heritage preservation and enhancement was also quite unusual because we were all professors of a Polytechnic school, consequently, we lacked a set of historical and humanistic skills to work with specific expertise on these issues.

The topic covered the international campaign for the protection of the sites and monuments of Nubia, promoted by UNESCO. It is a virtuous example of solidarity and international cooperation in the cultural field for the preservation of the common heritage (this year marks the 60th anniversary). It has been conducted through the delicate operation of disassembly and reassembly of most of the temples in areas which are safe from the flooding of the Nile. Notably, Italy also took part in the campaign and received the temple of Ellesyia as a gift, which is still kept in the rooms of the Egyptian Museum. I remember the beautiful lectio of the Director of the Museum, Dr. Christian Greco and the subsequent guided tour organized by the curator, Dr. Alessia Fassone.

But the glimmer didn't come from seeing the real temple received as a gift, but from observing a small case on the right, containing a part of the collection of nineteenth-century wooden models of some Nubian temples. My first thought was the digitization of the physical models, considering the possibility of comparing the graphic elaborations of the surveys and the drawings/paintings of travellers through critical comparisons between different types of representation. When I enquired about the location of the remaining physical models, I received a simple and unsettling answer at the same time: "They are stored in the depots".

"*An idea is like a virus. Once it is implanted in the mind it continues to grow…*" citing one of the famous lines from Christopher Nolan's Inception films that inspired the graphic design of the cover of this volume and which, ironically, is also the title of a beautiful European project brilliantly described by a friend and colleague, Prof. Federica Maietti.

An article published in La Stampa at the end of May was entitled: "Seven out of ten masterpieces are hidden in the storage of the museums". The proportion is critical. The interesting article by Nicola Pinna warns against confusing museum deposits with cemeteries of culture, to use the words of Dr. Luciana Gerolami, assistant to the curator of the Castello Sforzesco in Milan. "The best comparison is with the management of a hospital, where the artworks are treated and preserved with great care," points out Dr. Gerolami. Unfortunately, however, it is important to remember that there are also many terminally ill people and even mass graves. The same article also mentions a project promoted by the Italian Ministry

of Cultural Heritage, which I find extremely interesting and stimulating, starting with its name, *Sleeping Beauty*. This is a classification work aimed at civic museums with the ambition of setting up a database of an important selection of works that do not find space in the exhibition areas accessible to the public.
Unfortunately, as often happens, the investigators have been confronted with the critical issues related to the disclosure of a database of materials that has been prepared with great effort. It is also worth mentioning the experience of the museum of Naples Capodimonte, with the original exhibition, also with a particularly evocative title: "Stories still to be written". More than a thousand works are shown, including paintings, statues, tapestries, porcelain, weapons and decorative arts objects belonging to the five Capodimonte deposits. The exhibition has been extended for four months, proving
Although in a different form and certainly less ambitious, the B.A.C.K. TO. T.H.E. F.U.T.U.RE. project (BIM Acquisition as Cultural Key TO Transfer Heritage of ancient Egypt For many Uses To many Users REplayed) also tries to answer these questions. The final outcome of the processes of digitization and research on the collections will be given to the Fondazione Museo delle Antichità Egizie to set up digital spaces for their future remote users. It is not in this phase that the project stands out for its innovative contribution to research. It is worth remembering that part of the objectives for the improvement were already described in the Ministerial Decree of February, the 21st, 2018 "Adoption of minimum uniform levels of quality for museums and places of public culture and activation of the National Museum System", which requires compliance with minimum standards for the correct organization of deposits referring to simple rules for sorting and storage of artworks not exhibited, according to criteria of functionality and security.
The same document also indicates specific objectives for improvement: the deposit of not displayed assets, ordered, could be made available for consultation on request and be used by the public at special events. The innovation of B.A.C.K. TO. T.H.E. F.U.T.U.RE. consists in the close relationship between a strong need for documentation and research on some still little studied objects and the complementary need to combine different types of knowledge, from the most formal to the most content related aspects, which enable the implementation of Digital Strategies for Cultural Heritage. This issue has to be considered a unifying element of the second volume of Digital & Documentation, albeit with very different variations.
The chapters of the volume are divided into three thematic parts: the first, entitled "Digital & Physical Models", collects the research experiences of the project I have had the pleasure to coordinate and carry out in collaboration with the Fondazione Museo delle Antichità Egizie of Turin.
The pilot initiative "*Create a network around your research idea*" is funded through a collaboration between Politecnico di Torino and Compagnia di San Paolo. The initiative is aimed at facilitating synergies among universities, companies and other entities of the socio-economic system for cooperative, multidisciplinary and innovative research projects. The

academic partner is the Professor Diego González Aguilera, Head of the Department of Cartographic and Field Engineering at the University of Salamanca. He is also Head of the TIDOP (The Geomatic Technologies for the 3D digitalization and modelling of complex objects). His support was crucial for commenting and discussing the 3D metric survey techniques, which are the most suitable to record small objects and their correct use and interpretation during the modeling steps.
The second part, entitled "*Databases, semantics & interoperability*", presents a selection of experiences, also of international standing, whose central theme is documentation: databases, classified and structured through ontologies, sharing of information using different interoperable platforms, automatic recognition of architectural objects through machine learning techniques.
In the third part, "*Digital Representations for Knowledge, Enhancement & Communication of Cultural Heritage*" the Digital Representation is at the centre of the debate, investigated in its multiple forms: from the most theoretical and research uses, to the most popular and also promotional ones, presented through critical and updated readings connected to new digital procedures for Cultural Heritage.
The book highlights the strong experimental value that leads to the conception of procedural prototypes. For the future editions, we hope that this richness will be implemented and replicated for different, and as yet unexplored cultural contents.

Massimiliano Lo Turco

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Cultural Heritage is as rich as complex and its documentation is an increasing challenge. The digital solutions are numerous and their potential is a topic of constant investigation by the scientific community, that is requested to deliver digital strategies to make heritage permanently open and shared. The volume collects the contributions to the second conference of the 'Digital & Documentation' series, extending the debate to a multidisciplinary network of experts. It presents a frame of strategies for the documentation of Cultural Heritage in a wider perspective, stimulating reflections on: the relationships between physical and digital assets; the consistence of digital data and its management; digital representation as a mean to the transfer of cultural heritage. It comprehends theoretical studies and best practices on tangible and intangible heritage, taking into account applications for the research and the communications of Cultural Heritage as 3D representations, digital anastylosis, Augmented and Virtual Reality, Artificial Intelligence, semantics and databases. Aiming to give a comprehensive view on digital and documentation, the volume involves multiple perspectives from cultural institutions and universities, from experts in representation, geomatics, history, architecture, archaeology and ICTs for a multidisciplinary outcome.

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