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Nota di contenuto	Part I. Cultural Heritage and Artificial Intelligence: a new relationship between past and future times -- 1. Can Artificial Intelligence mark the next architectural revolution? Design Exploration in the realm of Generative Algorithms and Search Engines -- 2. Generative AI and the History of Architecture -- 3. Word pictures: New insights through AI around the Villa Laurentina by Pliny the Younger -- 4. Analysis of the Usability of Automatically Enriched Cultural Heritage Data -- 5. Cultural Relic Image Retrieval Based on Artificial Intelligence -- Part II. Foundational challenges beyond prompts: how Artificial Intelligence and Machine Learning can deal with ancient texts -- 6. The Artificial Papyrologist at Work -- 7. AI for the Restoration of Ancient Inscriptions: A Computational Linguistics Perspective -- Part III. How data, digitization and reproduction can open up new realities in visual historical heritage -- 8. Bridging the Gap: Decoding Abstract Concepts in Cultural Heritage Images -- 9. Decoding Pictorial Collections Using Faces -- 10. Digitization and Reproduction of Surface: Shedding New Light on Goya's Black Paintings -- 11. Manufacturing of sculpture in

the digital age -- Part IV. Digitalisation and Artificial Intelligence for architectural heritage intervention and conservation -- 12. Digital Palimpsest: Transformation of Alois Riegl's Modern Cult of Monuments -- 13. 3D Scanning of an Architectural Sculpture Using a Smartphone with LiDAR Sensor: The Case of The Late-Gothic Helical Stair -- 14. The impossible cathedral of Mejorada del Campo, Madrid: utilizing digitalization to comprehend its geometry and behavior. -- 15. Harnessing Audio-based Augmented Reality for Digital History and Cultural Heritage Experiences -- 16. 3D Heritage: Preserving Historical and Cultural Heritage through Reality Capture and Large Scale 3D Printing -- Part V. The historic urban territory as a focus for digital experiences -- 17. Segovia, heritage, and city. From the Special Plan for Historic Areas to the Smart Digital Project: new strategies for heritage planning and preservation. -- 18. Modeling and Monitoring the Rosenwald Ideal: Digital Documentation and Preservation at the Tankersley Rosenwald School, AL -- 19. Immersive Art and Urban Heritage: An Interdisciplinary Study of Socio-Environmental Justice in Houston and Amsterdam -- 20. Digital Citizenship in the Interactive Dissemination and Perception of Cultural Heritage – The Museum Case.

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#### Sommario/riassunto

This book provides readers with an overview of the use of digital techniques for cultural heritage preservation. Those include image processing, advanced sensing, geomatics or virtual and augmented reality. The use of newer tools such as generative artificial intelligence for images and 3D or advanced natural language processing systems is also considered. The ultimate goal is to provide readers with a global perspective of the state of the art on the use of digital tools for cultural heritage applications, both for researchers and professionals involved in cultural heritage and for computer scientists and engineers that design and develop technologies that can be used for cultural heritage preservation. Covers emerging digital techniques and applications, including generative AI and NLP applied to cultural heritage; Includes case studies that show the use of digital techniques in real applications; Provides comprehensive coverage of the latest digital techniques for cultural heritage problems. .

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