

# 《文化遗产的数字化保护》

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## 前言

Cultural heritages include rich information related to social, historical and cultural values. Affected by climate, environmental and other factors, some valuable heritage information is threatened through destruction or disappearance, and some is still not utilized sufficiently. How to investigate and utilize such information effectively is a significant scientific and technological issue. Archaeologists, museologists and conservators are working on issues such as the excavation of precious heritage items, the exhibiting of this valuable information and the strengthening of their outline structure, which aims to conserve and utilize the heritage items as well as their values. The development of information technology has shown its significant role in large and fast digitalization, personalization and so on. Information technology is more and more important in heritage preservation, including, but not limited to, digitalization, digitally-aided research, conservation, exhibition and utilization. First introduced in the 1980s, information technology was initially used to store information about relics, and then some digitalization and exhibition applications were implemented. Currently, information technology is applied in many different aspects in heritage information preservation.

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## 内容概要

《文化遗产的数字化保护:技术与应用(英文版)》内容简介 : Digital Preservation for Heritages Technologies and Applications provides a comprehensive and up-to-date coverage of digital technologies in the area of cultural heritage preservation, including digitalization, research aiding, conservation aiding, digital exhibition, and digital utilization. Processes, technical frameworks, key technologies, as well as typical systems and applications are discussed in the book. It is intended for researchers and students in the fields of computer science and technology, museology, and archaeology.

# 《文化遗产的数字化保护》

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1	Introduction
1.1	Cultural Heritage, the Crystallization of History
1.2	Cultural Heritage Preservation and Its Objectives
1.3	New Requirements of Digital Technologies for Heritage Preservation
	References
2	The Basis of Digital Technologies for Cultural Heritage Preservation
2.1	Basis of Information Acquisition and Perception
2.1.1	Digital Photography and Processing
2.1.2	3D Scanning and Processing
2.1.3	3S Technology
2.1.4	Sensing and Wireless Transmission
2.2	Basis of Information Analysis and Recognition
2.2.1	Image Processing
2.2.2	Intelligent Information Processing
2.3	Basis of Digital Exhibition and Interaction
2.3.1	Animation
2.3.2	Real-time Rendering
2.3.3	Stereo Display
2.3.4	Natural Interaction
2.4	Summary
	References
3	Digitalization of Cultural Heritage
3.1	Information Acquisition from Archaeological Excavation Sites
3.1.1	Preventing Loss of Information from Archaeological Sites
3.1.2	Process and Technical Framework of Information Acquisition from Archaeological Excavation Sites
3.1.3	Key Technologies for Information Acquisition from Archaeological Excavation Sites
3.1.4	Typical System for Information Acquisition from Archaeological Excavation Sites and Applications
3.2	Information Acquisition of Museum Preserved Sculptures and Artifacts
3.2.1	Digital Technology Makes Sculptures and Artifacts Remain "Young Forever"
3.2.2	Information Acquisition Process and Technical Framework for Museum Preserved Sculptures and Artifacts
3.2.3	Key Technologies for Information Acquisition of Museum Preserved Sculptures and Artifacts
3.2.4	Devices and Applications
3.3	Information Acquisition from Large Scenes
3.3.1	Process and Technical Framework of Large Scene Information Acquisition
3.3.2	Key Technologies of Large Scene Information Acquisition
3.3.3	Typical Applications
3.4	Information Acquisition of Large Paintings and Murals
3.4.1	Process and Technical Framework of Acquisition of Large Paintings and Murals
3.4.2	Key Technologies for Information Acquisition of Large Paintings and Murals
3.4.3	Typical Devices and Applications
3.5	Summary and Prospects
	References
4	Archaeological Research Aiding Technologies
4.1	Digital Technology and Archaeological Research
4.2	Process and Technical Framework of Archaeological Research Aiding
4.2.1	Process of Archaeological Research Aiding Technologie
4.2.2	Technical Framework of Archaeological Research Aiding Technologies
4.3	Typical Applications
4.3.1	Utilization of RS
4.3.2	Digital Measurement of Large-size Archaeological Sites
4.3.3	Computer Aided Bronze Ware Identification Expert System
4.3.4	Reconstruction Simulation of Stilt Style Buildings of the Hemudu Site
4.4	Summary and Prospects
	References
5	Digitally Aided Conservation and Restoration of Cultural Heritages
5.1	Digitally Aided Investigation
5.1.1	Current Situation Investigation by Digitally Aided Technologies
5.1.2	Process and Technical Framework of Digitally Aided Current Situation Investigation
5.1.3	Key Technologies of Digitally Aided Investigation
5.1.4	Typical Digitally Aided Current Situation Investigation System
5.2	Dynamic Environmental Monitoring of Cultural Heritages
5.2.1	Process and Technical Framework of Dynamic Environmental Monitoring
5.2.2	Key Technologies of Dynamic Environmental Monitoring
5.2.3	Typical Dynamic Environmental Monitoring System
5.3	Digitally Aided Restoration of Cultural Heritages
5.3.1	Process and Technical Framework of Digitally Aided Restoration
5.3.2	Key Technologies in Digitally Aided Restoration
5.3.3	An Introduction to Typical Application of Digitally Aided Conservation and Virtual Restoration
5.4	Summary and Prospects
	References
6	The Impact of Digital Technologies on the Exhibition of Cultural Heritages
6.1	Online Heritage Exhibition
6.1.1	Online Exhibitions Breaking Constraints of Time and Space
6.1.2	Process and Technical Framework of Online Heritage Exhibitions
6.1.3	Key Technologies for Online Heritage Browsing
6.1.4	Typical Online Heritage Exhibition Applications
6.2	Digital Exhibitions of Reconstructed Archaeological Sites
6.2.1	Archaeological Sites Exhibition of Reconstructed Original Appearance
6.2.2	Process and Technical Framework of a Digital Reconstruction Exhibition
6.2.3	Key Technologies of Digital Reconstruction Exhibition
6.2.4	Typical Applications for Digitized Reconstruction and Exhibition of Sites
6.3	Interactive Experience in the Exhibition Hall
6.3.1	Interactive Experience that Enhances a Sense of Participation
6.3.2	Process and Technical Framework of the Interactive Experience in the Exhibition Hall
6.3.3	Key Technologies of Interactive Experience in Exhibition Hall
6.3.4	Typical Application of Interactive Experience System
6.4	Summary and Prospects
	References
7	Digital Development and Utilization of Cultural Heritages' Information
7.1	Culture Heritages' Value
7.2	Process and Technical Framework of Digital Development and Utilization
7.3	Key Technologies for Development and Utilization
7.3.1	Source Material Extraction
7.3.2	Expression and Extraction of Ancient Murals' Artistic Style
7.3.3	Artistic Style Learning Based Re-creation
7.3.4	Computer-aided Imitation of

# 《文化遗产的数字化保护》

Murals7.4 Introduction of Typical System for the Development and Utilization7.4.1 Computer Aided Art Design and Creating System 7.4.2 Semantic Modeling for Chinese Ancient Buildings 7.5 Summary and ProspectsReferences8 Applications of Digital Preservation Technologies for Cultural Heritages8.1 Digital Preservation Project for the Mogao Grottoes8.1.1 Digital Acquisition of the Dunhuang Grottoes8.1.2 Microclimate Monitoring in the Mogao Grottoes8.1.3 Digitally-Aided Imitation of the Dunhuang Murals 8.1.4 Color Simulation of the Dunhuang Murals8.1.5 Dunhuang-style Pattern Creation and Product Development8.2 Digital Preservation Project for the Jinsha Site8.2.1 Information Management and Sharing for Archaeological Sites8.2.2 Acquisition and Exhibition of the Excavation Field 8.3 Digital Reconstruction Project of the Hemudu Site8.4 Digital Exhibition of the Liangzhu Relics8.5 SummaryReferences9 Summary and ProspectIndex

## 章节摘录

插图：Developed in 1960s, RS has its broad sense and narrow sense. In a broad sense, it is a detection technology that remotely senses objects and natural phenomena using electromagnetic waves, gravitational fields, electric fields, mechanical waves ( sound waves, seismic waves ) , and so on, without direct contact. In a narrow sense, it is a technology that is used to study the shapes, sizes, locations, and properties of objects on the earth and their correlations with the environment. The radiation features of electromagnetic waves, from ultraviolet to microwave, of various objects on the earth are obtained using various sensors placed on aerospace carriers ( including near-earth carriers ) at different heights. Those features are then formed into images, which are then transmitted and processed. Through such procedures, the attributes of objects on the earth are identified, and their temporal and spatial changing rules are explored. Multi-sensors, high-resolution, and multi-temporal data are the distinctive features of contemporary development of RS technology. The application and analysis of RS information is currently undergoing a number of changes from the analysis of single remote sensing data to the analysis of fused information from multiple data sources, from static analysis to dynamic monitoring analysis, from qualitative investigation to computer-aided automatic quantitative investigation. Aerial RS has become an important aspect of RS development for the reason of its mobility and high-resolution. RS archaeology, as its name suggests, is the nondestructive detection of objects on the ground, underground, or underwater using RS technology. To be specific, we detect, record, and analyze archaeological sites and their regional environments from four levels, namely aerospace, aviation, ground and underground, using geophysical means such as electromagnetic and seismic waves, and gravitational, magnetic, and electric fields. Using RS archaeology, the information obtained is no longer limited by visible light and audible sound waves detected by human eyes and ears. Any trivial changes or abnormalities in attributes detectable by the instruments can be recorded; therefore, RS technology can provide much more detailed archaeological information.

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