



Digital humanities and Islamic History: A Transformative Intersection

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Abstract

This research paper discusses the transformative intersection between Digital Humanities and Islamic History, highlighting how computational tools and digital methodologies are reshaping the study, preservation, and dissemination of Islamic heritage. By employing techniques such as text mining, digital mapping, network analysis, and data visualization, scholars can uncover new insights into the transmission of texts, the development of religious and educational institutions, and the spatial dynamics of Islamic empires. Digitization projects and open-access archives further democratize access to manuscripts and historical sources, enabling broader engagement beyond traditional academic circles. The paper also examines the implications of digital preservation for endangered manuscripts and cultural heritage sites, while addressing critical challenges such as digitization bias, data accessibility, and the need for interdisciplinary collaboration. Ultimately, the study argues that the integration of Digital Humanities with Islamic historiography constitutes not merely a methodological innovation but a paradigm shift, offering new possibilities for reinterpreting the Islamic past and connecting it with global scholarly and public audiences.

Keywords: Digital humanities, islamic history, transformative intersection, computational tools, digital methodologies, reshaping, preservation, dissemination, islamic heritage

Introduction

The actual definition of Digital Humanities is the subject of debate. For an overview, the Digital Humanities is an academic field and intellectual activity that combines digital technology and methods with traditional humanities disciplines like literature, history, and the arts. It involves using computational tools to create, analyze, and publish scholarly work, transforming how humanities research is conducted, taught, and shared in the digital age ^[1]. According to the Oxford English Dictionary, Digital Humanities is an academic field concerned with the application of computational tools and methods to traditional humanities disciplines such as literature, history, and philosophy. This field explores new ways of scholarly research, teaching, and publishing by using digital resources and computationally engaged methods ^[2]. Digital Humanities can be defined as an interdisciplinary field of study that applies digital tools, computational methods, and technological innovations to the research, preservation, analysis, and dissemination of humanities subjects such as history, literature, philosophy, religion, and cultural heritage. It involves both: (a) Methodological Dimension that uses digital tools (such as text mining, Geographic Information System mapping, data visualization, and digital archives) to enhance or transform traditional humanities research, and (b) Conceptual Dimension – rethinking how knowledge in the humanities is produced, preserved, and shared in the digital age, emphasizing openness, accessibility, collaboration, and public engagement.

Islamic History refers to the systematic study of the historical development of Islamic civilization from the 7th century to the present. It encompasses the religious, political, social, economic, and cultural evolution of Muslim societies, beginning with the life of Prophet Muhammad (peace and blessings be upon him), the revelation of the Holy Quran, and the establishment of the first Islamic state. The field examines major historical periods such as the

Rashidun, Umayyad, Abbasid, and Ottoman eras, the spread of Islam across continents, the development of Islamic institutions, legal frameworks, intellectual traditions, and the interactions between the Islamic world and other global civilizations. Islamic History combines the critical analysis of primary sources, such as chronicles, biographies, legal documents, and inscriptions, with modern historiographical methods, aiming to understand the multifaceted contributions and transformations of Muslim societies throughout time.

Digital Humanities and Islamic History: A Transformative Intersection

The intersection of Digital Humanities and Islamic History represents a transformative shift in the way scholars' approach, analyze, and disseminate knowledge about the past. Traditionally, the study of Islamic history relied heavily on manuscripts, archival materials, and material culture, often accessible only to specialists with the linguistic and paleographic expertise to interpret them. Digital Humanities, however, introduces a set of tools, methods, and frameworks that open new avenues for research, preservation, and interpretation, thereby democratizing access and expanding the scope of inquiry.

At its core, Digital Humanities integrates computational methods - such as text mining, geographic information systems, digital mapping, network analysis, and data visualization - with humanistic inquiry. In the context of Islamic history, these tools enable scholars to trace the transmission of texts across centuries, map the spread of Islamic institutions like madrasas, waqfs, and Sufi lodges, or reconstruct the longitudinal dynamics of empires from the Umayyads to the Mughals. Projects like digitized manuscript libraries, online prosopography databases, and digital Quran editions have redefined scholarly engagement, allowing researchers worldwide to study materials that were once locked away in archives. Beyond research, the

intersection is transformative for pedagogy and public history. Interactive platforms and digital archives make Islamic history more accessible to students and the general public, offering immersive experiences such as virtual tours of historic mosques, cities, and trade routes. Digital preservation also ensures that fragile manuscripts and endangered heritage sites - often at risk due to conflict, neglect, or environmental factors - are safeguarded in digital form for future generations.

Computational tools and digital methodologies are profoundly reshaping the study, preservation, and dissemination of Islamic heritage in several ways:

- **Reshaping the Study of Islamic Heritage:** The study of Islamic heritage has historically relied upon classical textual scholarship, archaeological investigation, art historical analysis, and ethnographic fieldwork. While these methodologies remain foundational, recent intellectual and technological shifts have fundamentally changed how Islamic heritage is examined, preserved, and disseminated. This process of reshaping has emerged primarily through the integration of digital tools, interdisciplinary collaboration, and the democratization of access to knowledge. Together, these transformations enable a more comprehensive, inclusive, and dynamic understanding of Islamic heritage.

One of the most significant transformations lies in the adoption of computational and digital humanities methodologies. Text-mining tools now make it possible to analyze large corpora of Arabic, Persian, and Ottoman manuscripts, revealing linguistic trends, transmission networks, and intellectual lineages that were previously obscured by the sheer volume of material. Geographic Information Systems and spatial mapping techniques have revolutionized the study of Islamic urbanism, pilgrimage routes, and the spread of institutions such as madrasas and waqf foundations. Similarly, 3D modeling and virtual reconstructions of mosques, shrines, and monuments enable both scholars and the public to engage with Islamic architecture in immersive ways, especially in cases where sites have been damaged or destroyed. These methodological innovations expand the scope of inquiry beyond what traditional tools alone could achieve.

Equally important in reshaping the field is the digital preservation of heritage materials. Massive digitization projects have safeguarded fragile manuscripts, rare Quranic codices, and archival records, making them available to a global scholarly community. Initiatives such as open-access sources and digital archives ensure that Islamic heritage is no longer confined to the physical boundaries of libraries, museums, or state institutions. At the same time, endangered sites across the Middle East, North Africa, and South Asia are being digitally documented, often with the aid of satellite imagery and photogrammetry, thereby preserving memory against the threats of conflict, urbanization, and environmental degradation.

Another crucial dimension of this reshaping process is the democratization of knowledge production. Whereas earlier studies of Islamic heritage were dominated by state institutions and elite academic circles, digital technologies enable a broader participation. Community-driven heritage projects, online exhibitions, and crowdsourced platforms allow local populations to reclaim, reinterpret, and share

their cultural legacy. This not only decentralizes authority over heritage but also challenges ruling narratives, fostering a more pluralistic understanding of Islamic history and culture.

The reshaping of Islamic heritage also involves critical reinterpretation. Digital mapping of scholarly networks, trade routes, and pilgrimage circuits reveals the interconnectedness of Muslim societies across vast geographies, challenging narrow regional or Eurocentric (a worldview that positions European culture, history, and values as the universal standard for all of humanity, viewing other cultures as inferior or as a prelude to European development) frameworks. Rather than viewing Islamic heritage as a static and monolithic entity, scholars increasingly recognize its dynamism and how it has been shaped by migration, globalization, colonial encounters, and modern reinterpretations. In this sense, heritage is no longer a fixed relic of the past but an evolving category that informs identity, memory, and political discourse in the present.

The reshaping of Islamic heritage has significant implications for global scholarship and cultural policy. By situating Islamic history within larger comparative frameworks, researchers foster cross-cultural dialogue and highlight the shared human dimensions of heritage. Institutions such as UNESCO and international NGOs increasingly employ computational tools to design preservation strategies that balance cultural, religious, and political sensitivities. The convergence of technology, scholarship, and policy thus opens new opportunities for safeguarding Islamic heritage for future generations, while also making it more accessible to a worldwide audience.

Therefore, the study of Islamic heritage is being reshaped through a combination of methodological innovation, digital preservation, democratization of knowledge, and critical reinterpretation. These developments move the field beyond traditional modes of inquiry, allowing for a more comprehensive, inclusive, and globally relevant understanding of the Islamic past and its continuing significance.

- **Preservation of Islamic Heritage:** The preservation of Islamic heritage has emerged as one of the most pressing concerns of contemporary scholarship, cultural policy, and community engagement. Islamic heritage, encompassing manuscripts, architectural monuments, ritual spaces, oral traditions, and artistic expressions, constitutes a vital component of global cultural memory. However, this heritage faces a wide array of challenges, ranging from armed conflict and urbanization to neglect, environmental degradation, and political contestations. In response, preservation efforts have expanded beyond traditional methods of conservation to incorporate digital technologies, international collaboration, and local community participation. These evolving strategies highlight not only the fragility of Islamic heritage but also the urgency of safeguarding it for future generations.

Historically, the preservation of Islamic heritage was carried out primarily through the efforts of religious and political institutions. Mosques, madrasas, and waqf grants played a central role in maintaining libraries, supporting scholars, and protecting sacred spaces. In many cases, these

institutions ensured the continuity of knowledge transmission through manuscript copying and the maintenance of endowments that funded schools and shrines [3]. Colonial encounters in the nineteenth and twentieth centuries, however, redefined preservation by introducing European models of archaeology, museum curation, and archival classification [4]. While these efforts often saved valuable materials from decay, they also displaced Islamic heritage into colonial institutions, raising questions of ownership, representation, and cultural authority.

In the modern era, Islamic heritage has been subjected to multiple forms of susceptibility. Armed conflicts in regions such as Iraq, Syria, and Afghanistan have resulted in the deliberate destruction of mosques, shrines, and manuscripts. Climate change has also emerged as a critical factor, with rising temperatures and desertification accelerating the deterioration of mudbrick architecture and manuscripts preserved in fragile environments. These threats underscore the need for urgent and innovative preservation measures.

One of the most transformative developments in recent decades has been the rise of digital preservation. Digitization projects, such as the Qatar Digital Library, the Endangered Archives Programme, and the Hill Museum and Manuscript Library, have created vast online repositories of Islamic manuscripts and archival materials [5]. By converting fragile documents into high-resolution digital formats, these initiatives ensure both long-term preservation and global accessibility. Digital heritage technologies such as 3D laser scanning and photogrammetry are also used to document mosques, minarets, and archaeological sites, providing blueprints for future restoration. In war-torn regions, digital reconstructions of destroyed monuments serve not only as scholarly resources but also as tools of cultural resilience and collective memory [6].

The preservation of Islamic heritage also relies heavily on the frameworks established by international and regional organizations. UNESCO has played a central role in recognizing and protecting Islamic sites through its World Heritage List, while organizations such as ISESCO (Islamic World Educational, Scientific and Cultural Organization) work specifically to safeguard Islamic cultural expressions. National heritage authorities in countries such as Egypt, Iran, and Turkey have implemented ambitious restoration projects, ranging from the conservation of mosques and mausoleums to the protection of ancient urban quarters [7]. Yet these efforts often confront political and financial constraints, as well as tensions between heritage preservation and contemporary urban development.

Gradually, scholars and practitioners recognize that the preservation of Islamic heritage cannot be reduced to technical conservation alone but must also include the participation of local communities. Heritage is not merely material but also intangible, encompassing oral traditions, religious practices, crafts, and rituals. The recognition of "living heritage" underscores the importance of sustaining cultural practices alongside the preservation of physical sites [8]. Community-led initiatives, such as mosque restoration projects in North Africa or the revival of calligraphic and artisanal traditions in South Asia, illustrate how heritage preservation can empower local populations, foster identity, and encourage intergenerational continuity.

Preservation efforts also raise significant ethical and postcolonial questions. Many Islamic artifacts remain in European and North American museums, often acquired

under conditions of colonial domination. Calls for repatriation and debates over cultural ownership reflect broader struggles over heritage, identity, and power [9]. Furthermore, the commodification of Islamic heritage through tourism has raised concerns about authenticity and the reduction of sacred spaces to spectacles for consumption. Balancing preservation, accessibility, and respect for the spiritual dimensions of Islamic heritage remains a central ethical challenge.

The preservation of Islamic heritage today represents an energetic intersection of tradition and innovation, local responsibility and global cooperation, material conservation and intangible continuity. It reflects both the vulnerabilities of cultural memory and the creative capacities of communities and institutions to safeguard their legacies. By combining historical institutions such as waqf with contemporary technologies like digitization, and by integrating global frameworks with grassroots participation, preservation efforts ensure that Islamic heritage continues to inspire and inform future generations. Ultimately, preserving Islamic heritage is not merely about saving relics of the past; it is about sustaining a living tradition that connects communities across time and space.

- **Dissemination and Public Engagement:** The study and preservation of Islamic heritage, while crucial, cannot be fully realized without effective dissemination and meaningful public engagement. Dissemination refers to the processes by which knowledge of Islamic heritage - its texts, monuments, traditions, and values - is communicated to broader audiences beyond academic circles. Public engagement, meanwhile, involves the active participation of diverse communities in interpreting, curating, and sustaining this heritage. Together, these processes ensure that Islamic heritage is not only safeguarded within scholarly institutions but also recognized as a living resource that informs identity, education, and cross-cultural understanding.

Historically, the dissemination of Islamic knowledge and heritage was carried out through oral transmission, manuscript circulation, and religious instruction. Mosques, madrasas, and Sufi lodges functioned as centers of both preservation and public pedagogy, allowing communities to engage directly with their intellectual and spiritual traditions. The copying of manuscripts and the waqf system facilitated wide access to religious and educational resources, ensuring that knowledge was not confined to elites. With the advent of print in the nineteenth century, dissemination expanded significantly, making Islamic texts more widely available and enabling reformist and revivalist movements to reach larger audiences [10].

In the modern period, dissemination has been increasingly shaped by print culture, broadcasting, and, more recently, digital media. Television, radio, and film have played an important role in popularizing Islamic history and art, though often framed within national or political narratives. The rise of digital platforms has dramatically broadened global outreach, enabling institutions, scholars, and communities to make manuscripts, images, and heritage collections accessible worldwide. Online platforms such as the Qatar Digital Library or the Islamic Manuscripts Platform provide open access to primary sources, allowing scholars, students, and the general public to engage directly with heritage materials.

Museums and cultural exhibitions represent another important avenue for dissemination and engagement. Major institutions such as the British Museum, the Metropolitan Museum of Art, and the Museum of Islamic Art in Doha curate large collections of Islamic artifacts that introduce global audiences to the artistic and intellectual achievements of Islamic civilizations. Traveling exhibitions and interactive displays increasingly emphasize storytelling and participatory learning, moving beyond object-based displays to highlight broader cultural and historical contexts. At the same time, local and regional museums in the Muslim world serve as crucial spaces for community identity formation and cultural education.

Digital humanities initiatives have transformed the ways in which Islamic heritage is disseminated and experienced. Digital mapping projects, 3D reconstructions, and virtual reality tours make heritage sites accessible to global audiences who may never visit them physically. Mobile applications and online archives provide interactive platforms where users can search, annotate, and contribute to heritage collections. Social media campaigns and digital storytelling projects enable heritage organizations to engage with younger audiences, democratizing access and fostering cross-cultural dialogue.

Dissemination alone, however, is insufficient without genuine public engagement. Increasingly, scholars and heritage professionals recognize the value of involving communities in the interpretation and stewardship of heritage. Participatory projects, such as community-led oral history initiatives or collaborative restoration efforts, empower local populations to reclaim ownership of their cultural legacies^[11]. This approach not only ensures cultural continuity but also fosters inclusivity, addressing critiques of heritage as a domain dominated by elites and external experts. Public engagement also takes the form of education, with schools, universities, and heritage centers integrating heritage studies into curricula to nurture awareness among younger generations.

Dissemination and public engagement, while transformative, also pose challenges. The global circulation of Islamic artifacts raises ethical questions about representation, ownership, and cultural sensitivity^[12]. Western museums have been criticized for decontextualizing Islamic heritage, presenting it as art divorced from its religious and social functions. Digital dissemination raises issues of accessibility, as not all regions have equal internet penetration, and of authenticity, as digital reproductions can sometimes substitute for direct cultural experience. Balancing global outreach with local cultural ownership remains one of the important ethical dilemmas of dissemination.

Dissemination and public engagement are central to the vitality of Islamic heritage. They ensure that heritage is not simply preserved as static relics but actively integrated into contemporary cultural and intellectual life. By combining historical traditions of knowledge-sharing with modern media, digital technologies, and community participation, dissemination strategies extend the reach and relevance of Islamic heritage on both local and global scales. Public engagement, in turn, grounds these strategies in lived experience, allowing heritage to remain a dynamic force that shapes identity, education, and intercultural understanding. Ultimately, dissemination and engagement represent not

only methods of communicating heritage but also essential practices in sustaining it as a living tradition.

Digital preservation of endangered Islamic manuscripts and cultural heritage sites offers immense potential for safeguarding delicate knowledge, expanding scholarly access, and enabling new methods such as computational paleography, three-dimensional reconstruction, and Geographic Information System-based monitoring, yet it also presents critical risks that demand careful management. Digitization secures materials against loss and displacement, provides wider access for scholars and communities, and fosters inclusive pedagogy, but it can never fully replace the physicality of manuscripts or the lived contexts of heritage sites. Challenges such as digitization bias - where illuminated texts of the Quran, Arabic texts, and prominent monuments are prioritized over dialect manuscripts, waqf records, or peripheral shrines - can distort historical representation, while data accessibility issues, including licensing restrictions, high-bandwidth requirements, and lack of multilingual metadata, often exclude communities closely connected to the heritage. Moreover, open geodata or unrestricted release of sacred texts may expose collections to looting, misuse, or ethical breaches, underscoring the need for tiered access, strong rights management, and community-centered consent. Sustainable preservation further requires long-term infrastructure, use of interoperable standards, transparent para-data documenting how digitization was performed, and strategies for format migration and storage replication. Ultimately, meaningful digital preservation of Islamic heritage depends not only on technology but also on interdisciplinary collaboration among conservators, historians, computer scientists, archivists, and community custodians, ensuring that digitization is equitable, ethically governed, and capable of preserving both material and intangible dimensions of the Islamic past for future generations.

The integration of Digital Humanities with Islamic historiography constitutes not merely a methodological innovation but a profound paradigm shift in the study of the Islamic past. Traditionally, Islamic historiography has relied on philological, archival, and interpretive approaches rooted in textual criticism, manuscript culture, and the reconstruction of historical narratives. While these methods have produced an invaluable corpus of scholarship, they are often limited in scope by the accessibility of sources, the laborious nature of manual analysis, and the fragmentation of materials across diverse geographies and languages. Digital Humanities, by contrast, introduces computational tools, data visualization, geospatial analysis, and network mapping that fundamentally reconfigure the possibilities of historical inquiry.

This shift is paradigmatic rather than incremental because it alters both the scale and the nature of historical analysis. On one hand, digitization and database-driven research allow for the aggregation of dispersed sources - manuscripts, waqf documents, travelogues, inscriptions, and archival registers - into interoperable and searchable corpora. This makes it possible to identify macro-historical patterns of mobility, patronage, and institutional development across the Islamic world that were previously invisible to scholars working with isolated case studies. On the other hand, Digital Humanities tools enable micro-historical readings through text-mining, semantic analysis, and digital paleography,

allowing for the recovery of voices and nuances otherwise lost in vast textual traditions.

Moreover, the integration of Digital Humanities democratizes access to Islamic history. Digital archives and interactive platforms make Islamic heritage available to global scholarly communities and wider publics who may never access physical collections in Cairo, Istanbul, Delhi, or Fez. In this sense, Digital Humanities breaks the boundaries of both geography and disciplinary silos, enabling a transnational and comparative framework for situating Islamic historiography within world history. It also transforms Islamic historical study from a specialist's field into a shared cultural resource, connecting it with audiences concerned with heritage preservation, identity, and global dialogue.

Therefore, the collaboration of Islamic historiography and Digital Humanities is not simply the adoption of new techniques but a reorientation of epistemological horizons. It redefines how sources are preserved, interpreted, and disseminated, shifting the field from insular textual exegesis to dynamic, networked, and publicly engaged scholarship. This paradigm shift offers not only fresh interpretations of the Islamic past but also new modes of connecting that past with contemporary global scholarly and public audiences.

This intersection also raises critical theoretical questions. Digital methods force scholars to rethink established narratives by uncovering hidden networks and marginalized voices, but they also bring challenges related to digitization bias, accessibility, and the need for interdisciplinary literacy. The field requires historians of Islam to collaborate with computer scientists, archivists, and digital librarians, fostering a more integrative approach to knowledge production. In due course, the meeting of Digital Humanities and Islamic History is not just a methodological innovation but a paradigm shift - transforming how we preserve, interpret, and share the many-sided legacies of Islamic civilization in a global and digital age.

Conclusion

The intersection of Digital Humanities and Islamic History represents a transformative paradigm shift rather than a mere methodological adjustment. By leveraging computational tools such as text mining, geographic information system mapping, network analysis, and data visualization, scholars are not only uncovering patterns and connections previously obscured but also reimagining the scope of Islamic historiography. Digitization and open-access initiatives have expanded the reach of fragile manuscripts, archives, and heritage sites, ensuring both preservation and global accessibility, while interactive platforms have brought Islamic history into the public sphere through immersive and participatory forms of engagement.

At the same time, the challenges of digitization bias, ethical considerations, and infrastructural sustainability remind us that digital preservation is not a neutral act but one that requires critical reflection, community participation, and interdisciplinary collaboration. The integration of technology into Islamic historiography compels us to reconsider not only how knowledge is preserved but also who has access to it, how it is interpreted, and for what purposes it is used.

Ultimately, the transformative intersection of Digital Humanities and Islamic History expands the possibilities of

research, pedagogy, and public engagement. It democratizes access to the Islamic past, situates it within global scholarly frameworks, and safeguards its material and intangible dimensions for future generations. By bridging tradition and innovation, local custodianship and global accessibility, Islamic historiography in the digital age emerges as both a revitalized field of inquiry and a vital resource for cross-cultural understanding in an interconnected world.

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