


# Chapter 9

## A Glance in Using Artificial Intelligence in Archival Software for Archival Centers

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### **ABSTRACT**

*This chapter examines the integration of Artificial Intelligence (AI) into archival software to tackle the increasing challenges of managing digital archives. It delves into issues such as data volume, integrity, and unstructured data, and explores how AI technologies, including natural language processing, machine learning, and predictive analytics, provide innovative solutions. The chapter presents case studies of AI-powered archival platforms, showcasing their practical applications and benefits. It also addresses implementation challenges, such as technical integration, data privacy, organizational change, and ethical implications. Finally, the chapter outlines future research directions, emphasizing opportunities for predictive archival management and technological advancements.*

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## INTRODUCTION

Artificial Intelligence (AI) is revolutionizing archival practices by enhancing efficiency, accessibility, and data management. AI applications in archives include automated file management, voice-to-text transcription, optical character recognition, facial recognition, and metadata creation (Bakker & Castro, 2023). These technologies can improve the visual quality of digitized collections, making historical materials more accessible while protecting fragile originals (Đukić, 2023). AI also facilitates efficient data storage and retrieval methods, crucial for managing the exponential growth of digital information (Trehan, 2023). However, the integration of AI in archives raises concerns about ethics, accuracy, and privacy (Bakker & Castro, 2023). Case studies from Australian institutions demonstrate the practical implementation of AI in recordkeeping, highlighting both its potential and limitations (Rolan et al., 2018). As AI continues to evolve, it is essential for archival professionals to approach its adoption critically, ensuring responsible use and maintaining the integrity of digital scholarship (Bakker & Castro, 2023).

The integration of artificial intelligence (AI) into archival software is transforming how archival centers manage, access, and preserve collections. AI enhances efficiency and quality, offering significant economic and operational benefits. For example, AI in archive management systems has improved efficiency by over 35%, optimizing resource utilization and maximizing returns (Wang et al., 2024). AI enables intelligent, automated, and personalized archive management, boosting both efficiency and service quality (Liu, 2024). Applications include learning-based categorization, natural language summarization, and automated file management, which streamline processes and improve user services (Liu, 2024; Bakker & Castro, 2023). AI-driven algorithms like TextRank also demonstrate technical feasibility and superiority in extracting key information from digitized archives (Wu, 2023).

The integration of AI in archival centers offers transformative potential but also presents significant challenges. While AI can automate and enhance archival processes, issues such as data privacy, ethical considerations, and the need for collaboration among stakeholders remain critical (Liu, 2024; Mannheimer et al., 2024; Jaillant & Rees, 2022). Balancing technological innovation with ethical responsibility is essential, as is fostering trust and collaboration among archivists, policymakers, and users for successful AI implementation (Jaillant & Rees, 2022).

AI is reshaping archival science, offering tools to streamline operations and address challenges in preserving human history. From a data perspective, AI introduces a paradigm shift in handling archival materials, enabling transformative solutions. One key application is digitization, where AI-driven technologies like machine learning and computer vision accelerate the conversion of physical records into digital formats, reducing manual effort and errors (Carter et al., 2022; Arief et al.,

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