

Artificial Intelligence in Archive Management

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Abstract

In the context of digitization, artificial intelligence technology has brought changes to archive management. This paper analyzes the current status of the application of artificial intelligence in archive management, clarifies the challenges it faces in terms of data quality, technical adaptability, information security and privacy protection, as well as ethics and laws and regulations, and puts forward suggestions such as establishing a data quality management mechanism, adopting a differentiated technological strategy, strengthening information security and privacy protection, and perfecting the system of ethics and laws and regulations, with the aim of promoting the healthy and sustainable development of AI technology in the field of archive management field.

Keywords

Artificial Intelligence (AI), Archive Management, Application Scenarios, Challenges of AI Archive Management

1. Introduction

As an important part of information management and knowledge management, archive management has an irreplaceable role in maintaining historical memory, promoting cultural inheritance and serving society. However, the traditional way of archive management is facing big challenges, for example, the paper-based archive management has the problems of high storage cost and low retrieval efficiency, while the electronic archive management has the problems of large data volume and complex classification.

Artificial intelligence technology, as the core driving force of the new round of technological revolution, is profoundly changing the field of archive management. Through machine learning, natural language processing and computer vision technologies, AI realizes intelligent classification, accurate retrieval, automated

appraisal and digital restoration of archives, which significantly improves management efficiency and service level. The purpose of this paper is to analyze the application scenarios of AI archive management and the challenges it faces, so as to put forward corresponding countermeasures and suggestions to clear the obstacles for the development of archive management, and to help AI technology to better empower archive management in today's era.

2. Application Scenarios of AI Archive Management

2.1. Archives Collection

In the work of archive collection, the dilemmas of fuzzy handwriting in paper archives, complicated content in audio and video archives, and obscure information in image archives have long constrained the process of archive digitization. The breakthrough application of artificial intelligence technology provides innovative solutions to crack these identification dilemmas.

In the field of paper archive digitization, optical character recognition technology has reached maturity. The technology captures the light and dark changes on the paper surface through high-precision optical equipment, accurately analyzes the character outlines, and transforms the image information into editable digitized text with the help of deep learning algorithms. This technological breakthrough has shortened the digitization processing time of single-page archives from several minutes to seconds, which not only significantly improves the efficiency of archive collection, but also avoids the risk of errors in manual entry through automated entry.

For the collection of image and audio/video files, AI technology has also demonstrated powerful empowerment. In the oral archive collection, major meetings real-time records and other scenarios, the intelligent speech recognition system can synchronize the speech stream into structured text, supporting multilingual mixed recognition and dialect adaptation [1]. At the same time, the image archive parsing technology based on computer vision is able to automatically identify time stamps, character features and scene elements in photos, and form associated indexes with text archives, laying the foundation for the in-depth utilization of multimedia archives.

The integration and application of these technologies marks the transformation of archive collection from “manual entry” to “intelligent perception”, and builds up an intelligent collection system covering the whole media and the whole process, providing technical guarantee for the permanent preservation and innovative utilization of archive resources.

2.2. Archives Organization

Archives are being organized with the help of natural language processing, machine learning, biometric identification, optical character recognition and other cutting-edge artificial intelligence technologies to realize the innovation of automated archiving and intelligent classification. The core realization path lies in the

deep training of machine learning models through massive text files, relying on natural language processing technology to accurately extract the key information and semantic features of the text, and analyze the potential correlation between text attributes and categories. On this basis, machine learning algorithms are used to classify and model the multidimensional data and build a dynamically updated corpus. When new archive data is input, the system will intelligently compare it with the existing model in the corpus, and quickly complete the intelligent categorization of archives through pattern matching and feature analysis.

In addition to text archives, the classification of multimedia digital archives can also be broken through with the help of artificial intelligence technology. Based on image recognition, audio and video recognition and biometric identification technology, the system is able to parse key information in unstructured data such as pictures, audio and video. For example, it can extract time stamps and character features from photos through image recognition, or convert meeting recordings into text records and mark the timeline with audio/video recognition technology, and ensure the accurate control of archive access privileges by combining with biometric identification technology.

2.3. Archives Appraisal

The appraisal of archives mainly covers two core areas: appraisal of archive value and open appraisal of archives, the process of which requires comprehensive assessment and confirmation of multi-dimensional factors such as authenticity, integrity, trustworthiness and usability of archives, which puts forward high requirements for technical capabilities and professional standards. To cope with this challenge, intelligent appraisal tools developed with the help of expert systems, optical character recognition, natural language processing and machine learning and other artificial intelligence technologies have emerged. Such tools can independently learn from a large number of existing standards, theories and mature appraisal samples, and continuously optimize the appraisal laws and rules in practice verification, thus realizing efficient and accurate appraisal of complex and diversified archives, and significantly improving the efficiency and accuracy of appraisal.

At the practical application level, China's Fujian Provincial Archives took the lead in building an automated audit model based on OCR, NLP, machine learning and expert systems. The model has the functions of intelligent task allocation, full traceability of the audit process, real-time reminder of sensitive words and automatic archiving, etc., which realizes the full-process automation of open archive audit and significantly improves the efficiency and standardization of the audit.

This shows that the application of artificial intelligence technology in archive appraisal not only improves work efficiency, but also provides scientific and standardized technical support for archive appraisal through data-driven and algorithmic optimization, and promotes the development of archive management in the direction of intelligence and refinement.

2.4. Archives Storage

Archival storage is the core link to ensure the security of archival entities and the integrity of information, and its management effectiveness directly affects the long-term value and availability of archival resources. The in-depth integration of artificial intelligence technology has injected intelligent genes into archive storage and built a multi-dimensional and three-dimensional security protection system. In terms of physical archive management, AI can assist in environmental monitoring. The synergy of IoT sensors and AI algorithms realizes the fine management of archive storage. Through the deployment of temperature and humidity sensors, light intensity detectors, air quality monitors and other equipment, the system can collect the physical parameters of the storage environment in real time and dynamically adjust the operation status of constant temperature and humidity equipment, ventilation systems and intelligent lighting devices based on machine learning models.

Secondly, the combination of robot inspection system and radio frequency identification technology significantly improves management efficiency. The robot can replace manual labor to complete the daily inspection of high-density storage areas, through visual recognition and infrared scanning technology to detect file box damage, labeling and other issues, and generate inspection reports. The radio frequency identification tag realizes the rapid positioning and inventory of archives, and the system can complete the inventory verification of tens of thousands of archives within seconds, with an inventory accuracy rate of over 99.9% [2]. The AI-assisted archive restoration system detects the type of damage of paper archives, such as insect infestation, tearing, and discoloration, etc., and generates restoration solutions to guide the restorers to operate precisely and reduce the human error through the image recognition technology.

For electronic archives, blockchain technology and encryption algorithms build a distributed storage and access control system. Through redundant data backup and hierarchical management of rights, the system not only prevents data tampering and illegal access risks, but also realizes the traceability of the whole life cycle of archives.

2.5. Archives Utilization

AI technology has revolutionized the mode of archive utilization through semantic understanding and knowledge mapping technology, promoting the transformation of archive resources from “passive storage” to “active service”.

In terms of intelligent search, the natural language processing system based on deep learning breaks the limitations of traditional keyword matching. Users can ask questions in natural language, and the system searches across databases and associates related archives, documents and multimedia materials to generate a structured knowledge map. The map not only presents the original text of the archives, but also visualizes the event lineage, policy evolution logic and decision-making influence network through entity recognition and relationship extraction

techniques [3].

In terms of rights management, biometric identification technology and dynamic password mechanism collaborate to build multiple security lines of defense for accessing sensitive archives. Through accurate authentication of fingerprints, iris and other biometric features and real-time verification of dynamic passwords, the system effectively eliminates the risk of illegal access, and AI algorithms deeply mine user behavioral data to build user profiles from multiple dimensions such as access time, frequency, and path, etc., and combined with machine learning models, intelligently identifies abnormal access patterns, such as high-frequency access in off-work hours and abnormal logins across geographic regions, etc., and triggers the risk early warning mechanism instantly to realize the proactive response of security prevention and control. The system also triggers the risk warning mechanism to realize the active response of security prevention and control. Moreover, based on user role permissions and personalized needs, the system can also use intelligent recommendation algorithms to accurately push archive resources.

In the field of archive compilation and research, AI technology has realized a paradigm shift from artificial-intensive to intelligence-driven. The natural language processing system, through named entity recognition, relationship extraction and other technologies, can automatically parse core elements such as time, place, people and events in archive texts, generate structured topic summaries, and build visualization reports relying on knowledge mapping technology, which improves the efficiency of editing and research by more than three times. Image recognition technology breaks through the limitations of traditional manual annotation, and accurately analyzes detailed information such as scene layout, clothing features, and artifacts in historical photographs through deep learning models, providing quantitative analysis data support for cultural researchers.

3. Challenges of AI Archive Management

3.1. Data Quality Problems

The problem of data quality is particularly prominent in AI archive management and has become a key factor restricting its further development. Archival data, due to its wide range and diversity of sources, covers a variety of forms such as paper documents, electronic records, multimedia materials, etc. These different sources of data often have significant differences in format, encoding methods, and storage structure, and lack uniform standards and norms. Coupled with the fact that historical archives may be digitized due to technical limitations or human negligence, a large amount of noisy data is introduced, such as scanning errors, OCR recognition errors, missing information or duplicate entries, leading to increased incompleteness and inconsistency of data. These problems not only increase the complexity of data preprocessing, but also bring great challenges to subsequent AI algorithm training and model construction.

Specifically, data quality has a direct and far-reaching impact on the perfor-

mance of AI systems. In the model training stage, low-quality data can lead to difficulties for the algorithm to capture effective patterns and laws in the data, making the features learned by the model deviate from the real situation, which in turn affects the accuracy and generalization ability of the model [4]. In the model application phase, inaccurate or incomplete data input may lead to the model outputting wrong results, such as wrong classification, irrelevant retrieval results, etc., which seriously reduces the efficiency and reliability of file management. More seriously, if the model is incorrectly optimized based on low-quality data, it may lead to the failure of the whole system and fail to meet the actual needs of archive management. Therefore, solving data quality problems and improving data quality are important tasks to be solved in AI archive management.

3.2. Technology Adaptability Problems

The problem of technical adaptability is particularly prominent in the field of artificial intelligence records management, which has become a key bottleneck restricting its efficient application and in-depth development. The amount and types of data covered by the archive management are huge and complex, far beyond the scope of general information system processing. Specifically, archive management involves a wealth of data types, from the traditional digital copies of paper documents, multimedia audio-visual materials, to structured database records, unstructured text logs, and even semi-structured XML/JSON files, etc., all types of archival data in the format, structure, presenting significant differences in the level. This diversity is not only reflected in the external manifestation of the data, but also penetrates into the internal organization logic of the data [5]. For example, after digitization of paper documents, image files may be formed, and the analysis of its content needs to rely on optical character recognition technology, while the recognition rate of OCR technology for complex fonts and fuzzy handwriting is often low, which can easily lead to data conversion errors; multimedia audio-visual data contains audio, video and other formats, and the extraction and analysis of its content needs to be integrated with multimodal technologies such as speech recognition and video analysis, which has a high degree of technical difficulty.

3.3. Higher Technical Difficulty

At the same time, the essential characteristics of archive content also exacerbate the challenge of technical adaptability. Historical archives may carry ambiguous linguistic expressions and specific era contexts, and their semantic understanding needs to be combined with knowledge of historical background, cultural background and other aspects, which puts forward high requirements for natural language processing technology of AI; scientific research archives contain rigorous experimental data and complex logical relationships, and the processing and analysis of the data need professional domain knowledge and algorithmic models to ensure the accuracy and reliability of the results; administrative archives often fol-

low the principle of “one-stop”, which means that they have to be analyzed by a professional team of engineers. Administrative files often follow specific official norms and process logic, and the analysis and utilization of their contents need to comply with relevant regulations and standards, which puts forward strict requirements for the compliance and adaptability of the AI system.

As different types of archives have significant differences in format, structure, semantics, etc., their demand for AI technology also presents highly differentiated characteristics. This requires that the technical solution must have a high degree of flexibility and adaptability, and be able to dynamically adjust the data processing process, algorithmic model and parameter settings according to the characteristics of different types of archives, in order to achieve efficient and accurate archive management. However, the current AI technology still faces many difficulties when dealing with complex and diverse archive data, such as incompatible data formats, inaccurate semantic understanding, and insufficient generalization ability of algorithmic models, etc., which have seriously restricted the wide application and in-depth development of AI in the field of archive management.

3.4. Security and Privacy Protection Problems

With the deep mining and analysis of archive data by artificial intelligence technology, a large amount of sensitive information containing personal privacy, commercial secrets and even state secrets are centralized and stored. However, the security protection system of many current archive management systems is not yet perfect, and there are significant security loopholes.

First of all, encryption technology is insufficient in data protection, and its algorithms may have defects or fail to be updated in a timely manner, resulting in data in the transmission and storage process is vulnerable to attack, and then stolen or tampered with [6]. At the same time, the access control mechanism is not strict enough, and there are loopholes in authentication and rights management, which give unauthorized personnel the opportunity to bypass security defenses and access sensitive archive data. The occurrence of this situation not only stems from the inadequacy of the technical level, but also has to do with poor security considerations in the process of system design and implementation.

Secondly, the weak security awareness and irregular operation of staff are also important factors leading to information security problems. Some staff members lack sufficient security training and education, and have insufficient understanding of the importance of information security. In their daily work, they may violate the security regulations due to carelessness, thus triggering data leakage incidents.

Once data leakage occurs, the consequences will be very serious. For individuals, privacy violations may lead to problems such as misuse of personal information, increased risk of financial loss, and damage to personal reputation. For enterprises, the leakage of trade secrets may lead to loss of competitive advantage, obstruction of business cooperation and legal disputes. As for the state, the leakage

of state secrets may jeopardize national security, social stability and international image. Therefore, strengthening information security and privacy protection in AI file management, constructing a perfect security protection system, and improving the staff's security awareness and operational standards have become important issues that need to be solved urgently.

3.5. Ethical and Legal Problems

The wide application of artificial intelligence technology in the field of records management has triggered a series of complicated ethical and legal issues. From an ethical perspective, the potential bias and unfairness of AI algorithms have gradually come to the fore. In key aspects such as archive classification, retrieval and recommendation, these algorithms may generate discriminatory results, which in turn negatively affect users' right to equal access. For example, algorithms may inappropriately categorize or rank archives for certain groups of users on the basis of unreasonable characteristics or patterns, putting these users at a disadvantage when accessing archival information.

In addition, there are many challenges in ensuring that the principle of informed consent of users is fully adhered to in the process of collecting and using archival data. On the one hand, as the scope and manner of data collection are often complex, it may be difficult for users to fully understand how their data will be used, resulting in uninformed "consent". On the other hand, some organizations may have over-collected data in excess of their actual business needs, or even misused the data, which undoubtedly seriously infringes on the user's right to privacy.

Analyzing from the level of laws and regulations, the existing legal and regulatory system appears to be inadequate in dealing with the rapid development of AI technology. The many new issues arising in the management of AI files, such as the clear attribution of data ownership and the precise definition of algorithmic responsibility, lack clear provisions and effective regulatory measures in the existing laws and regulations. This legal lag makes it difficult to effectively handle and solve disputes and problems based on clear legal provisions when they arise, bringing great legal risks and uncertainties to archive management.

At the same time, there are significant differences between different countries and regions in the laws and regulations of AI archive management. Such differences not only increase the difficulty of transnational archive management and data exchange, but also may lead to different processing results in different legal environments, further exacerbating the complexity and uncertainty of archive management, and bringing many obstacles to the sharing and cooperation of archive information on a global scale.

4. Suggestions for AI Archive Management

4.1. Establishment of Data Quality Management Mechanism

The establishment of a data quality management mechanism is the core priority for improving the effectiveness of AI file management, and it is of irreplaceable

strategic significance for building a firm defense of data quality and guaranteeing the sound operation of the system. At the beginning of data processing, cutting-edge data cleaning technology and intelligent algorithms should be deeply integrated to build an efficient mode of collaborative operation between automated tools and manual calibration [7]. By intelligently identifying duplicate records, accurately correcting erroneous fields, scientifically filling in missing values, and standardizing data formats and coding norms, we can ensure that every piece of archival data has a high degree of completeness, standardization, and usability at the beginning of entering the system. This process not only significantly improves the intrinsic value of the data, but also lays a solid foundation for subsequent data analysis and deep mining.

In order to build a long-term mechanism for continuous improvement of data quality, it is necessary to carefully design a set of scientifically rigorous and operationally feasible data quality control standard system. The system should comprehensively cover key dimensions such as data accuracy, completeness, consistency, timeliness, etc., and refine the quantitative assessment indicators and practical methods for each dimension. Through the regular implementation of comprehensive data quality assessment, the use of statistical analysis, data mining and other advanced technologies for archival data “accurate pulse”, timely insight into potential data quality hazards. At the same time, the construction of intelligent data quality monitoring platform, the implementation of 7 × 24 hours real-time tracking of key data indicators and intelligent early warning, once the discovery of anomalies immediately starts the corrective procedures, the formation of “assessment-monitoring-feedback-improvement” closed-loop management chain. In addition, the concept of data quality management should be carried through the whole life cycle of archive management, from the source of data collection control, storage process standardized management, processing process optimization and upgrading to the application of accurate services, each link is set up strict quality checking barriers to ensure that the data quality of the whole process to get all-round, dead-end protection, for the development of intelligent and accurate artificial intelligence archive management provides an inexhaustible impetus. Inexhaustible power.

4.2. Adopt Differentiated Technology Strategy

Adopting differentiated technology strategy is the core way to overcome the problem of adaptability of AI archive management technology. In the field of archive management, the complexity of data types and the diversity of needs constitute a real dilemma that needs to be broken through. In order to effectively deal with this challenge, it is necessary to closely focus on the core characteristics and processing pain points of different types of archives, and carry out the research and development and optimization of artificial intelligence models.

For the interpretation of fuzzy language and specific contexts in historical archives, a specialized model that integrates historical semantic libraries and natural

language processing algorithms can be elaborately developed [8]. The model can deeply restore the original meaning of the text by virtue of the contextual association analysis technology, skillfully combine with the historical background knowledge, and reason intelligently about the fuzzy expressions, so as to realize a more accurate and comprehensive understanding of the content of the archives. For the complex logical relationships contained in experimental data in scientific research archives, a graph neural network model based on domain knowledge can be constructed. This model has strong pattern recognition and law mining capabilities, and can automatically identify the potential patterns and laws in the experimental data, providing solid and powerful support for scientific research analysis. For the processing of structured documents in administrative files, it is necessary to focus on optimizing the rule engine and template matching technology to ensure the efficiency and accuracy of document format analysis and content extraction, and provide a strong guarantee for the smooth implementation of administrative work. Through classification and accurate modeling, the system's adaptability to different types of files and processing efficiency can be significantly improved, making the AI file management system more flexible and efficient.

In order to break the information barriers between different types of archives, the construction of a cross-domain knowledge graph has become a key cornerstone of intelligent archive management. This knowledge map should comprehensively integrate multi-dimensional information such as entities, attributes, and relationships in archives, and carefully weave a knowledge network covering the whole domain. For example, people and events in historical archives are closely associated with technical achievements in scientific research archives and policy documents in administrative archives through rich semantic relationships such as timeline and causal chain, so that the originally dispersed archival data is transformed into a well-structured and logically clear knowledge system. Based on this knowledge map, the system can realize intelligent filing function, automatically classifying and storing relevant files into appropriate categories based on semantic associations, which greatly improves the efficiency of archive management; meanwhile, it can also realize cross-type searching, so that users can retrieve their relevant historical records, scientific research achievements and administrative documents in one click by simply inputting the name of the person, providing users with a more comprehensive and convenient information access experience [9]. In addition, the dynamic updating mechanism of the knowledge map can ensure the real-time and effectiveness of the archive information, provide solid data support for the continuous optimization of the artificial intelligence model, and ultimately form a benign cycle management system of "Data-Knowledge-Intelligence", which will vigorously promote the archive management in the direction of intelligence and precision to achieve a qualitative leap.

4.3. Strengthening Information Security and Privacy Protection

In the field of AI archive management, strengthening information security and

privacy protection is the core task of guarding archive data security and safeguarding the legitimate rights and interests of users. In order to effectively protect the security of archive data and the effectiveness of user privacy, it is necessary to comprehensively utilize various technical means in an all-round and multi-level manner.

Encryption technology, as the cornerstone of data security, plays an irreplaceable key role. With the help of advanced encryption algorithms, the archive data is encrypted, and the sensitive information contained therein is transformed into ciphertext form. In this way, only authorized users, with a specific decryption key to match, can be restored to readable information. This technical means as if for the archive data plus an indestructible “digital lock”, effectively blocking the data in the transmission and storage process by illegal theft or malicious tampering possibility, for the archive data to build a solid security barrier.

At the same time, the implementation of strict and fine access control policy is also crucial. According to the roles and rights of users, different access levels are set scientifically and reasonably, and the access to archive data is managed in an all-round and refined way. In this way, it can ensure that only strictly authorized personnel can access their duties related to the archive information, so as to eliminate unauthorized access and data leakage from the source, and further enhance the security of archive data.

In addition, a series of effective privacy protection measures should be taken, such as data desensitization and anonymization. These measures can maximize the protection of users’ privacy information without affecting the normal use value of data, so that archive data can fully respect and protect users’ personal privacy rights and interests while playing its due role.

In addition to the above technical means, the establishment of a sound information security management system and emergency plan is also an important support for the prevention of network attacks and data leakage risks. The information security management system should comprehensively cover all aspects of data collection, storage, processing, transmission and destruction, clarify the responsibilities and authority of each department and personnel in the information security management work, standardize the operating procedures, and ensure that each task is regulated and based on evidence. At the same time, detailed and operable contingency plans are formulated, and scientific and reasonable countermeasures and processes are planned in advance for possible network attacks, data leakage and other types of security incidents. Regularly organize emergency drills and assessments to continuously improve the ability to respond to emergencies, minimize the losses caused by security incidents, and provide a solid and reliable guarantee for the safe and stable operation of AI file management.

4.4. Improve Ethics and Laws and Regulations

With the deep penetration and wide application of AI technology in the field of archive management, improving the system of ethics and laws and regulations has

become an important task that cannot be delayed. In order to build a set of scientific, reasonable and practical ethical guidelines and laws and regulations, there is an urgent need to strengthen close cooperation and in-depth communication with legal experts, ethicists and policy makers.

With their profound legal expertise and rich practical experience, legal experts are able to provide precise and professional opinions and advice from the legal perspective. They are able to ensure that the ethical guidelines and laws and regulations formulated strictly follow the spirit and principles of the law, avoid any conflict with the current legal system, and lay a solid foundation for the construction of the rule of law in the management of AI records. Ethicists, on the other hand, start from the height of ethics and morality, analyze in depth all kinds of ethical problems that may arise in the process of AI file management, such as data privacy protection, algorithmic fairness, and the relationship between human beings and technology, etc., and put forward targeted and forward-looking solutions to guide the development of AI file management in line with the ethical and moral norms. Policy makers, on the other hand, stand at the overall height of the national development strategy and social needs, comprehensively consider various factors such as economic, social and cultural factors, and formulate forward-looking and guiding policies and regulations, so as to provide macroscopic guidance for the long-term development of AI records management.

Through the collaborative efforts of legal experts, ethicists and policy makers to conduct in-depth research on ethical and legal issues in AI archive management, ethical guidelines and laws and regulations can be formulated that fit the actual situation and are operable. These guidelines and regulations will build a solid institutional defense for the healthy development of AI records management and ensure that it operates within a legal, compliant and ethical framework.

In view of the fast-changing development of AI technology, new application scenarios and problems are springing up. This requires that relevant laws and regulations must keep pace with technological development and be revised and improved in a timely manner. Policymakers should always maintain a keen insight into the dynamics of AI technology development, and capture new issues and challenges brought about by new technologies and applications in a timely manner. On this basis, existing laws and regulations should be comprehensively and thoroughly evaluated and adjusted to fill legal gaps and eliminate regulatory blind spots.

5. Conclusions

Artificial intelligence archive management brings unprecedented opportunities and challenges. AI significantly improves the efficiency and service level of archive management, and provides strong support for the perpetual preservation and innovative utilization of archival resources. However, data quality issues, technical adaptability challenges, information security and privacy protection risks, as well as lagging ethics and laws and regulations, are still key factors restricting its fur-

ther development.

To overcome these challenges, it is necessary to establish a data quality management mechanism to ensure the integrity, standardization and usability of archive data; adopt differentiated technology strategies to improve the adaptability and processing efficiency of the system for different archive types; strengthen information security and privacy protection, and build an all-round, multi-level security protection system; and improve the system of ethics and laws and regulations, so as to build up a solid system of defense for the healthy development of AI archive management.

While the opportunities for the introduction of AI technology in the field of records management are immense, the costs and feasibility of implementing mechanisms to address existing challenges need to be taken into account. In terms of cost, the establishment of a data quality management mechanism involves the purchase of technical tools, recruitment and training of professionals and hardware facilities upgrading and other expenses; the implementation of differentiated technology strategies requires investment in technology research and development and system integration costs; the construction of information security and privacy protection system will incur the procurement and deployment of security technology and long-term operation and maintenance costs; and the improvement of the ethical and legal regulatory system also requires investment in research and publicity and training expenditures.

However, from the feasibility point of view, technically, the current artificial intelligence technology has a certain foundation and the development trend is good, the future is expected to appear more advanced algorithmic tools to solve the archive management problems; talent, the scale of training of relevant professionals to expand the archive management personnel can be trained to master the skills, and cross-field cooperation can attract artificial intelligence experts to help; management, policy support for the implementation of the project to create a favorable environment, the formation of industry consensus will also help to unify the standards. The formation of industry consensus also helps to unify standards and promote the mechanism to the ground. Therefore, despite the cost pressure, it is feasible to overcome the challenges and realize the wide application of artificial intelligence in the field of archive management by rationally planning the allocation of resources, and it is expected to bring great changes and development to archive management.

Conflicts of Interest

The author declares no conflicts of interest regarding the publication of this paper.

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