INTELLIGENT APPLICATION OF DIGITAL SHARED MANAGEMENT SYSTEM IN JOURNAL RESOURCE INTEGRATION

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ABSTRACT

In this paper, a journal resource integration system under digital sharing was designed to assess the symmetry of the journal resource matrix using the shared resource matrix analysis method, so that the journal resources can transmit information covertly among the subjects. Subsequently, the collected journal resource data were processed to improve the accuracy of information categorization and integration to form a perfect resource management system. The nature of journal resources was deeply understood by calculating the characteristic observable vectors of journal resources. Finally, with the help of ant colony particle optimization algorithm, the sharing sequence and time of journal resources were calculated, and the metadata format of all journals was unified and standardized to complete the design of journal resource integration system. The results show that the whole average integration efficiency of journal resources is 92.8%. Compared with the traditional integration system, the integration efficiency is improved by 28.3%, which fully confirms the significant performance improvement of the designed digital system in the integration of shared journal resources.

KEYWORDS

Digital sharing; journal resource integration; shared resource matrix; ant colony particle; shared sequence

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INDEX

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1. INTRODUCTION

Journals are the most utilized and have the highest information value, with the characteristics of short publication cycle, novel content, large amount of information, and the ability to systematically reflect the latest scientific and technological developments, which makes them essential materials for teachers and students of colleges and universities to engage in teaching and scientific research activities [1-2]. The so-called integration of periodical resources refers to the orderly organization of periodical resources of different types and formats based on certain needs and requirements, and presenting them to readers in a unified way through intermediate technology. The periodical resource system through integration, with integrated search function, is a new type of periodical resource system with cross-platform, cross-database and cross-content [3-4]. With the construction of digital libraries, digital resources are becoming more and more abundant, especially journal resources [5]. There are many kinds of journal resources, large amount of data, and different forms, and different journal resources often have independent databases, retrieval systems, and distribution systems, which makes the journal resources relatively scattered and cluttered, and causes a lot of inconvenience for readers to retrieve and utilize them [6]. Therefore, intelligent integration of journal resources has become an important part of the construction of digital digital sharing management system, which will improve the effective utilization of journal resources by readers.

Ahmad, N identified three categories of critical success factors (CSFs), namely, program design and implementation, quality culture and excellence, and institutional infrastructure and support, for a total of 11 CSFs, through the observation of several programs of King Khalid University in the process of ABET accreditation. Using the fuzzy hierarchical analysis and the method of perfect agreement, the SFs and their dimensions in terms of continuous academic quality assurance, ABET accreditation were Relative importance was ranked comprehensively [7]. Rini, G. P et al. explored the intrinsic link between customer orientation in terms of unique resource integration, exchange memory system. Identify the key factors affecting customer service performance based on the theory of competitive advantage of firms. Using Indonesian hotel managers and administrators as research subjects, 327 valid questionnaires were distributed with a validity rate of 70.6%. It was found that firm-specific resource integration enhances customer service quality, with customer-oriented antecedents of customer orientation and interactive memory [8]. Eppard, J et al. tested the flipped learning approach in a class for one semester, triangulated by exam scores of the students, interviews with participants, and instructor's reflections. The results indicated that flipped learning had positive outcomes in terms of increasing student self-efficacy, promoting leaner independent learning, and providing resources for concept introduction and review [9]. Wunderlich, J et al. suggest that there is still a gap in how to select appropriate assemblies for different purposes and a need for guidance for practitioners. An architecture is proposed with three components to guide the integration effort, designing a four-stage integration evaluation methodology and classifying integration based on qualitative explorations into three categories, and finally proposing an incremental approach to selecting the appropriate aggregation approach based on the needs of the evaluation [10]. Bae, J et al. proposed a reinforcement learning based network scheduling algorithm for single-hop downlink scenarios, whereby the network optimization problem is formalized as a Markov decision process problem by introducing a new state-action value function. And a reinforcement learning algorithm for upper confidence bound exploration is designed to ensure that the loss of performance is minimized [11]. In modern cities, transportation digitization plays a crucial role as an important means of connecting all kinds of transportation service providers and users. Jabbari, M et al. based on the existing pedestrian road network model. The digital modeling took urban residents as the main body and constructed a multi-level pedestrian system with the help of digital technology [12]. Rajabi, E et al. made e-learning content public on the Internet, which is conducive to achieving the sharing and reuse of teaching resources, and enhances the interoperability of data in the network. Utilizing the principle of Linked Data, educational metadata is made public as Linked Open Data and its content is interconnected with web datasets in order to improve the interoperability of web resources and thus achieve the sharing and reuse of educational resources [13]. Nijs, M et al. proposed that the online educational repository is a good global resource for science and technology and that the global virtual teaching and online lectures can provide the audience around the world with evidence-based evidence-based knowledge from which knowledge including distance learning can be gained. The library is an excellent resource tool for conducting resource sharing workshops for ART professionals and providing effective hands-on vocational education training for ART professionals through virtual training tools, thus reducing unnecessary duplication of efforts [14].

In this paper, first of all, through the shared resource matrix analysis method, the system carries out in-depth analysis of periodical resources, determines the symmetry of the matrix to the periodical resources, and realizes the hidden transmission of information between the subjects. A complete journal resource library is established, and a multi-level intelligent walking system is constructed through fine processing and classification and integration. The system further calculates the observable vectors of journal resource features to deeply understand the nature of journal resources. Through the determination of feature similarity, it provides the basis of intelligent decision-making for the subsequent resource integration. In the resource integration scheme of the shared management system, the system optimizes the adaptation values and solves the optimal values through intelligent algorithms to ensure that the diversity of resources and user needs are fully considered in the integration process. An intelligent journal resource integration process is designed to make the system more efficient and intelligent in the integration process. Finally, the design of the digital sharing system adopts an intelligent classification and search module, which enables users to obtain the required journal resources more conveniently and intelligently. The construction of the overall framework ensures that the structure of the system is reasonable and stable.

https://doi.org/10.17993/3ctic.2024.131.159-177

2. INTELLIGENT DESIGN OF JOURNAL RESOURCE INTEGRATION SYSTEM UNDER DIGITAL SHARING

2.1. SHARED RESOURCE MATRIX ANALYSIS

Shared Resource Matrix Analysis was first proposed by R. Kemmerer in 1982, the algorithm stores the trusted computing base of the system in the form of a matrix, where the original language has access rights to the trusted computing base variables [15-16]. Under the operation of the system, the storage is the read and write permissions that the system calls have on the shared resource variables. When using the shared resource matrix analysis method, it is first necessary to check all shared resources that can be accessed by the subjects, and then to determine whether they are able to pass information covertly between all subjects. In implementing this step, each of the original languages in the system needs to be carefully examined.

Given a matrix $A = \left[e_1, e_2, e_3, L, e_m\right]$ of size $1 \times m$, it needs to be satisfied if A is symmetric about journal resource e_i:

$$Less\left(A, e_i\right) - More\left(A, e_i\right) = 0 \quad (1)$$

In the formula, $Less\left(A, e_i\right)$ indicates the number of journal resources less than E in statistical array A, and $More\left(A, e_i\right)$ indicates the number of journal resources greater than E in statistical array A. Through the position of journal resources in the matrix, the symmetry of the matrix about the journal resources can be judged, if the matrix is symmetrical about the standard symmetry of the journal resources, formula (1) must be established, and the value of formula (1) also reflects the symmetry of the matrix about the journal resources.

Using matrix analysis to analyze the content of journal resources and resource search records, user interests can be fully explored so that resource recommendations can be given to users. The one-dimensional matrix is generalized to a high-dimensional space S of size $n \times m$, where n is the sample size and m is the dimension. Then the space can be described by a matrix Mar of size $n \times m$ as:

$$Mar = \begin{bmatrix} a_{11} & a_{12} & L & a_{1j} & L & a_{1m} \\ a_{21} & a_{22} & L & a_{2j} & L & a_{2m} \\ M & M & O & M & O & M \\ a_{n1} & a_{i2} & L & a_{ij} & L & a_{im} \\ M & M & O & M & O & M \\ a_{n1} & a_{n2} & L & a_{nj} & L & a_{nm} \end{bmatrix} \quad (2)$$

https://doi.org/10.17993/3ctic.2024.131.159-177

A point $x_i = \left[x_{i1}, x_{i2}, L, x_{im}\right]$ in a known space is symmetric about the projective position of x_i in every dimension if the space S is symmetric about x_i, i.e., the following condition is satisfied:

$$\begin{cases} Less\left(Mar_1, x_{i1}\right) - More\left(Mar_1, x_{i1}\right) = 0 \\ Less\left(Mar_2, x_{i2}\right) - More\left(Mar_2, x_{i2}\right) = 0 \\ Less\left(Mar_3, x_{i3}\right) - More\left(Mar_3, x_{i3}\right) = 0 \\ M \\ Less\left(Mar_m, x_{im}\right) - More\left(Mar_m, x_{im}\right) = 0 \end{cases} \quad (3)$$

where Mar_m denotes the mrd column of matrix Mar, where denotes the jth dimension of x_i. In order to better represent the symmetry of space S about x_i, the concept of symmetry rate is designed as:

$$P_{xi} = \sum_{j=1}^{m} \frac{n - \left| Less\left(Mar_j, x_{\_}\right) - More\left(Mar_j, x_{ij}\right) \right|}{n} \quad (4)$$

The symmetry ratio reflects the symmetry of the matrix with respect to the points; the higher the ratio, the more likely it is that the matrix is symmetric with respect to x_i.

2.2. ESTABLISHMENT OF A JOURNAL RESOURCE LIBRARY

In order to improve the accuracy of information classification and integration, the collected journal resource data are processed. Setting the resource training set as A, which contains n kinds of resources, through this setting, we can get the expected value of the classification result of the resource kinds, which can be expressed by the formula as follows:

$$Info(A) = -\sum_{i=1}^{n} p \lg p_i \quad (5)$$

Where $Info$ is the information in the journal resource, and p_i is the probability of data classification rationality. Connecting the repository and the terminal to form a complete resource management system to provide users and managers with more convenient and efficient journal resource services.

https://doi.org/10.17993/3ctic.2024.131.159-177

2.3. COMPUTING OBSERVABLE VECTORS FOR JOURNAL RESOURCE CHARACTERIZATION

First, the total number of characteristic variables of the initial sample is determined and denoted by n. Second, by orthogonally transforming the n characteristic variables $X = x_1, x_2, \cdots, x_n$ of the initial sample to obtain u integrated variables $\left(y_1, y_2, y_3\right)$ and constructing a coefficient matrix R, the resource integration characteristic equation is expressed as:

$$\lambda(i) = \frac{|R \otimes X|}{\left\{\left(y_1, y_2, y_3\right)\right\}} \otimes \frac{x_1, x_2, \cdots, x_n}{u} \tag{6}$$

The non-negative eigenvalues of λ_i sample are sorted to meet the requirements of $\lambda_1 \geq \lambda_2 \geq \lambda_n \geq 0$. The top m resource integration features can be obtained through equation (6) with the following expression:

$$\Phi(p) = \frac{m \otimes \lambda(i)}{\xi(e)} \otimes \eta(r) \tag{7}$$

where $\eta(r)$ is the uncertainty of journal resource integration and $\xi(e)$ is the journal resource integration coefficient.

Using α to describe the first m journal resource features as the ratio of all first-order features is expressed as:

$$\alpha = \frac{m \otimes \beta(p)}{\mu(R)} \times v(e)(\sigma^* \otimes \kappa) \tag{8}$$

where $v(e)$ is the information of each type of feature and κ is the observed variable. The observable vector of resource features is calculated according to Eq. (8) and the expression is:

$$\partial(X) = \frac{X \otimes F}{\left(a_{ij}\right)_{n \mp m}} \otimes c_i \otimes \varepsilon_i \times X_i \tag{9}$$

Where F is the unobservable vector, c_i is the factor loadings of journal resource integration features, and ε_i is the factor affecting c_i. By calculating the journal resource characteristic observable vector, it is possible to understand the journal resources more deeply.

2.4. FEATURE SIMILARITY DETERMINATION

In the process of journal resource integration, vectors are utilized to complete the representation of journal text information. The processed journal text information is

https://doi.org/10.17993/3ctic.2024.131.159-177

represented by vectors, firstly, the feature words in the journal text are extracted, assuming that the extracted feature word is $m_1, m_2, \cdots, m_x$, then the journal text information of the metadata item can be represented as:

$$d_m = \left(m_1, q_1; m_2, q_2; \cdots; m_x, q_x\right) \tag{10}$$

Where m_x is the feature term of the xnd text, and q_x is the weight occupied by this feature term.

It is calculated according to the similarity algorithm of cosine:

$$\cos_{dm}\left(x_1, x_2\right) = \frac{q_1 \times q_1' + q_2 \times q_2' + \cdots + q_x \times q_x'}{\sqrt{\sum x q_x^2} \times \sqrt{\sum x q_x'^2}} \tag{11}$$

Where q_x' is the metadata item of journal resource information x_2, and d_m is the weight occupied by the xth journal text information feature item.

According to the above calculation, the semantic similarity of journal resources can be derived as follows:

$$\cos\left(x_1, x_2\right) = q_{dm} \cos_{dm}\left(x_1, x_2\right) \tag{12}$$

Where q_{dm} denotes the weighted weights of the metadata items.

When the calculated similarity is 1, the resources represented by the two calculated sets of metadata are proved to be equivalent, and if the calculated similarity is between $\alpha \sim 1$, the two sets of journal resources are proved to be similar, where α denotes an empirical value and is usually considered to be $0.2 < \alpha < 1.0$.

3. SHARED MANAGEMENT SYSTEM RESOURCE CONSOLIDATION PROGRAMME_

3.1. OPTIMIZING ADAPTATION VALUES

Using ant colony particle swarm optimization algorithm, according to the time given to the click frequency of journal resource categories and resource categories, respectively, click on the path of the 2 indicators of different weights, calculate the similarity of the user, as a way to improve the efficiency of pre-school periodical resource integration, to provide core support for the intelligent design of the journal resource integration system under the digital sharing [17-19].

Let there be n collection of journal resource tasks in the system, i.e., $T = \left\{T_1, T_2, \mathrm{L}T_n\right\}$, which needs to be implemented on the collection of resource nodes $G = \left\{G_1, G_2, LG_m\right\}$, where the computational resource node is described by

$G_i = (i \in [1,m])$ and the standalone task is described by $T_i = (i \notin [1,n])$. A feasible sequence of journal resource assignments is described by particle positions, and if the journal resource tasks are realized on the resource nodes, the position of particle k is shown below:

$$X_k = \left\{x_1, x_2, L, x_j, L, x_n\right\} \tag{13}$$

where X_k denotes a feasible journal resource organization solution.

Set the time used by the journal resource task to achieve resource consolidation as $G_{ij} = (i \in \{1,2,L,m\}, j \in \{1,2,L,n\})$, the total elapsed time to perform the journal resource subtasks as G_i, and set G_{max} to be extremely small as the optimization objective. Then the adaptation value for one organizing is:

$$G_{max} = \max\left\{C_i\right\} \tag{14}$$

In the ant colony algorithm, the ant pheromone concentration is proportional to the selection probability. The click frequency of each resource category can be obtained by calculating the number of clicks on each resource category and the resources under the resource category visited by the user in each session, and quoting it with the total number of clicks on all the resources in this session. Then take the average value of the click frequency of the resource category in a certain period of time, construct the click frequency user matrix of the resource category, and find the similarity of the click frequency vector of the user's resource category by solving the similarity of the click frequency vector of the user's resource category in the frequency user matrix of the resource category. Initially each path has the same pheromone, in d moment i nodes, the ant is described by k, then the probability that the ant picks the next node is:

$$P_{ij}^k = \begin{cases} \dfrac{\frac{\left(T_{ij}(d)\right)^{\alpha}}{Lq_{ij}(d)^{\beta}} \frac{1}{2} \frac{\left(EV_j^{\alpha}(d)^{\gamma}\right)}{Lq_{ij}(d)^{\beta}}}{\sum_{n \in e(k)} \frac{\left(T_{ij}(d)\right)^{\alpha}}{Lq_{ij}(d)^{\beta}} g_2 \frac{1}{2} \frac{\left(EV_n^{\alpha}(d)^{\gamma}\right)}{Lq_{in}(d)^{\beta}}} \\ 0, \end{cases} \tag{15}$$

Where, γ denotes the relative weight of the predicted value of computational power, P_{ij}^k denotes the quality of the line of the ant k at the i node, $u(k) = \{0,1, \mathrm{L}, n-1\} - e(k)$ denotes the node of computational resources that the ant did not choose, α denotes the relative weight of pheromone, $e(k)$ denotes the forbidden table of the ant, β denotes the relative weight of the quality of the line, $T_{ij}(d)$ denotes the strength of pheromone of the ant to view the j node at the dth moment, from the ith node, and q_0 is a constant, and q is a random coefficient.

https://doi.org/10.17993/3ctic.2024.131.159-177

3.2. OPTIMAL VALUE SOLUTION

In order to solve the global optimal solution and ensure that the line quality or pheromone value of the node is extremely high, this paper controls the probability of the ants selecting a node by using random coefficients and constants assigning a forgetting factor to each access path to the journal resource category by the user in a certain period of time [20]. For nodes whose pheromone concentration is not 0, the solution is:

$$T_{ij}(t+1) = \rho \times T_{ij}(t) \tag{16}$$

At moment n, the ant realizes a 1-times loop with an update rule for the amount of information on each path:

$$T_{ij}(t+n) = \rho\left(T_{ij}(t)+1\right) + \frac{1}{2}\Delta T_{ij} \tag{17}$$

$$\Delta T_{ij} = \sum_{k=1}^{m} \Delta T_{ij}^{k} \tag{18}$$

Where, ρ denotes the persistence of the ant trajectory, ΔT_{ij} is the informative increment of link (i, j), Q denotes the number of pheromones left by ant k on link (i, j) within this cycle, and L_k denotes the length of the link that ant k traverses for a week, the informative increment of link (i, j) is updated by Eq:

$$\Delta T_{if} = \begin{cases} \frac{Q}{L_k}, \\ 0, \end{cases} \tag{19}$$

Set the number of iterations to 0, i.e. $N = 0, u(k) = \{1,2,L,n\}$, set n virtual nodes have m ants, in order to solve the node, need to initially organize the sequence, through the taboo table of ants to remove the resource node labeling, a calculation of the resource node j, which can be achieved through the formula (18) to select. Within the resource organizing sequence, set the j position of the node, based on the taboo table of ants to remove j. The completion time of the resource organizing sequence, according to the formula (17) to solve the optimal solution, to get the completion of the optimal periodicals resource organizing sequence with time [21].

3.3. JOURNAL RESOURCE INTEGRATION PROCESS

The main idea of the integration of journal resources is to unify and standardize the operation of all journal metadata formats, and then add all these metadata to the established journal database. The metadata of all journal databases to be imported are described in a unified Extensible Markup Language (XML) format, so as to lay a good foundation for future data exchange and dumping. Then these journal resource metadata described in XML format will be imported into the journal database, the specific implementation process is shown in Figure 1. In the XML format metadata mapping to relational databases, the use of structural mapping approach, that is, in the storage of relational databases, the first according to the schema or mining out the schema information inherent in the document to generate the corresponding relational schema, and then according to the generated relational schema of the XML document to analyze the decomposition and will be stored in the corresponding data table. Journal resource data may come from different databases, they all have their own different complex formats, due to the customizability and extensibility, solves the problem of a unified interface for data, enough to express various types of data.

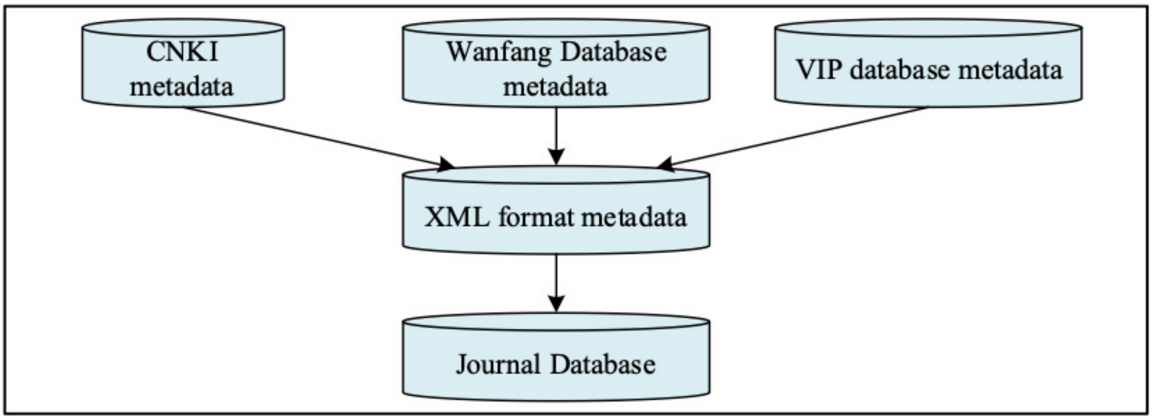

Figure 1. Journal resource integration realization process

4. DIGITAL SHARING SYSTEM DESIGN

4.1. GENERAL FRAMEWORK

The overall structure design of the system is to divide the system into logical structures on the basis of the demand analysis, to determine the distribution of functions among the levels and parts within the levels, and to determine the interrelationships among the levels and parts. The system can be divided into three layers, i.e., data layer, business processing layer and application layer. After the system is separated by layers, the change of functions can be realized by changing the related layers, and due to the relative independence of each layer, the change of a certain layer will not have an impact on other layers. The advantage of dividing the system into so many levels is that it can make the system architecture more clear, so that the function accomplished by each level is relatively single, and the code of the function is regular, which makes it possible to put more energy into the processing of business logic. The overall framework of the system is shown in Figure 2. The unified database retrieval module is an effective way to integrate journal resources, due to the rich content of journal resources with diverse carriers, for which a retrieval module should be set up to integrate the journal resource databases into one, so that the readers can conveniently retrieve the required documents across the databases through the unified retrieval interface. In the classification search module, it mainly provides users with three ways of searching by database, searching by journal and searching by category [22]. These three ways also provide first letter navigation, and also provide a secondary search function, that is, on the basis of the first search results and then further search.

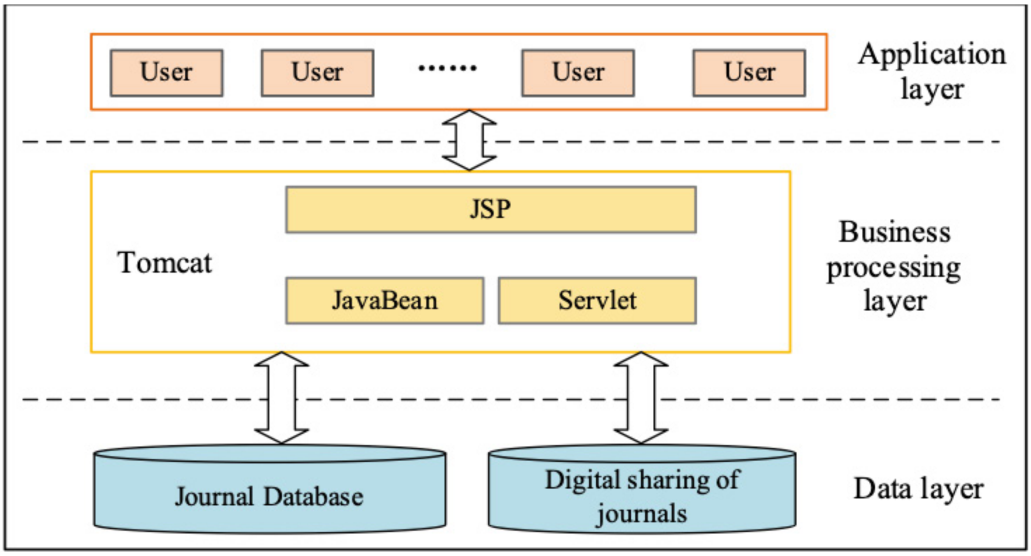

Figure 2. Overall system framework diagram

4.2. CATEGORIZED SEARCH MODULE

The whole structure of the classification search module is shown in Figure 3. The application of digital sharing management technology in the integration of journal resources mainly lies in realizing the rapid query and sharing of journal resources, and the reasonable management of resources is particularly important due to its huge data and information base. Digital sharing management technology is used to organize idle resources and solve communication and computing needs, thus saving a large number of duplicated investments and improving the utilization rate of resources.

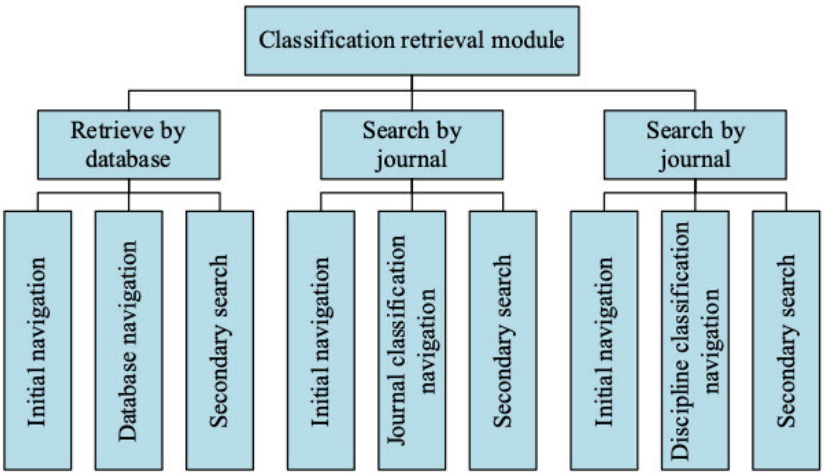

Figure 3. Structure of the classification search module

Functional architecture design as shown in Figure 4, the system is divided into digital resource submission function module, resource audit management function

https://doi.org/10.17993/3ctic.2024.131.159-177

module, resource use function module and system management function module 4 parts. However, due to the system startup, the database needs to be initialized and set up, after entering the user name and the correct password, the journal resource integration system can be started to ensure that the management of system files is safe This part needs to be set up using a computer program. After completing the above operations, the integration of journal resources is realized.

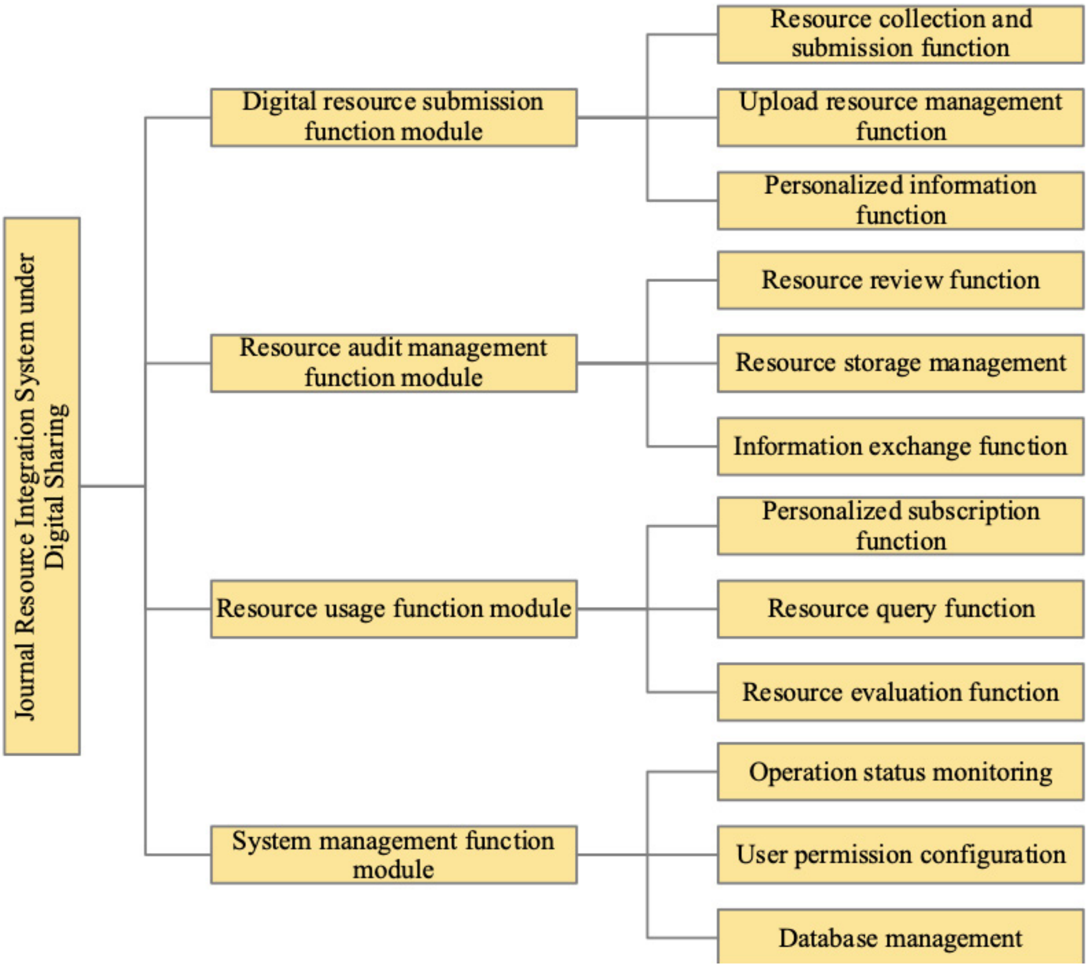

Figure 4. Functional architecture design

5. ANALYSIS OF THE EFFECT OF INTELLIGENT APPLICATION OF JOURNAL RESOURCE INTEGRATION

5.1. COMPARISON OF SUCCESS RATES

From a university library, 120,000 shared digital journal resources are randomly selected for integration, detecting the loss rate and misdetection rate of the resources after the integration of this paper's system with the traditional integration system and the Hadoop-based digital resource integration system for digital journal resources in this university library, and comparing the integration success rate of each system with the performance of the system. Table 1 shows the results of the loss rate and false

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detection rate of the three systems, and with the increase of the number of resources, the performance of the system in this paper is still able to remain stable. For example, at 120,000 resources integration, the loss rate is only 0.31% and the misdetection rate is 0.10%, reflecting the excellent performance of the system in large-scale digital journal resources integration. In contrast, the traditional integration system shows a higher loss rate of 2.43% for the complete 120,000 shared digital journal resources, while the Hadoop-based digital resource integration system still lags behind this paper's system in terms of the integration success rate, with a loss rate of around 1.45%, although it incorporates Hadoop technology. It shows that the system in this paper improves 2.12% in terms of loss rate compared with the traditional integration system, and leads the Hadoop-based system in terms of integration success rate. The system in this paper performs well when the number of resources is less than 80,000, which further confirms its efficiency in small-scale resource integration scenarios. It is possible to confirm that the journal resource integration system designed in this paper under digital sharing shows more excellent performance in terms of integration success rate, loss rate and false detection rate, which validates the superiority of the system.

Table 1. Comparison of loss rate and false detection rate results of three systems

Number of resources / Article	This paper integrates the system		Traditional integration system		Hadoop-based integration system	
	Attrition rate /%	False Detection Rate /%	Attrition rate / %	False Detection Rate /%	Attrition rate /%	False Detection Rate /%
20000	0	0	0.38	0.31	0.27	0.21
40000	0	0	0.79	0.41	0.46	0.29
60000	0	0	1.21	0.56	0.78	0.37
80000	0.12	0	1.56	0.95	0.95	0.46
100000	0.20	0.09	1.89	1.47	1.23	0.53
120000	0.31	0.10	2.43	2.38	1.45	0.79

5.2. COMPARISON OF INTEGRATION EFFICIENCY

In order to further analyze the reliability of the integration system, it can be analyzed by comparing the integration efficiency of journal resources, the higher the integration efficiency of journal resources, the better the integration stability of its system, and the integration efficiency of the traditional integration system and the Hadoop-based digital resource integration system. Figure 5 shows the test results of integration efficiency, the average integration efficiency of traditional integration system is 64.5%, and the highest efficiency is only 66.8%. In contrast, the average integration efficiency of the Hadoop-based digital resource integration system is 78.6%, and the highest efficiency is 83.4%, showing an improvement of 14.1% after

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integrating Hadoop technology. Despite the improvement in system performance, it still falls short of practical application and requires further improvement. In contrast, the journal resource integration system designed in this paper under digital sharing shows higher integration efficiency when the number of iterations gradually increases. The integration efficiency of journal resources is 91.8%, 92.9%, 92.2%, 93.3%, 93.8%, and the average integration efficiency is 92.8%. Compared with the traditional integration system, the system in this paper has improved 28.3% in terms of integration efficiency, which provides a strong support for the excellent performance of the system. It is clearly demonstrated that the designed system for integrating journal resources under digital sharing has significant advantages in terms of the reliability of the integration of shared journal resources.

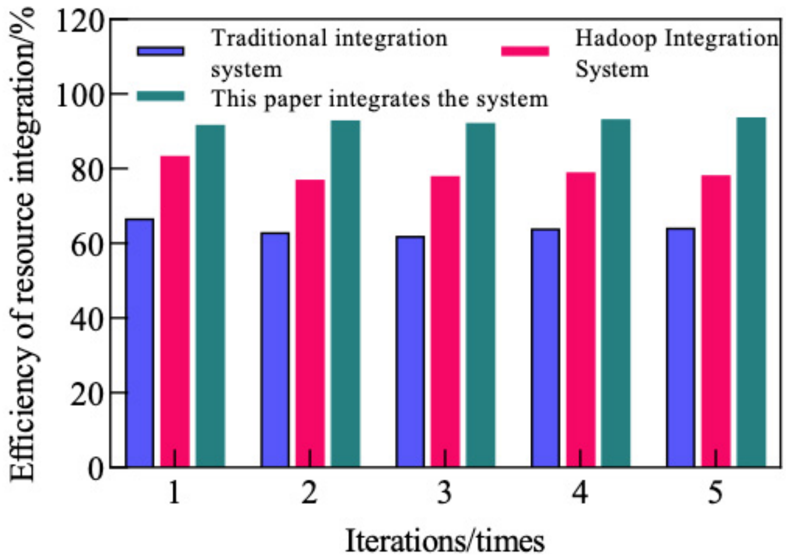

Figure 5. Comparative results of journal resource integration efficiency

5.3. INTEGRATION TIME COMPARISON

Finally, the system in this paper and the traditional integration system, Hadoop-based digital resource integration system for university library journal resource integration time, and record the results of the analysis and comparison, has been verified that the system integrates the efficient performance of the journal resources, the comparison is shown in Figure 6. In this paper, the digital sharing of journal resources integration system in the integration of digital journal resources in college libraries, the time used is the shortest, and with the growth of the number of resources, the overall rise in the time used is relatively slow, and there is no phenomenon of time-consuming due to the growth of the number of resources is too long. After the number of journal resources increased in turn, the integration system in this paper took 49ms, 55ms, 79ms, 82ms, 96ms, 120ms, the overall time is shorter, and in the case of the highest number of resources, the time is also in the 150ms below, stable performance. While the other two systems have faster growth in the time used when the number of resources is higher, the time used by the traditional integration system is 362ms, 401ms, 495ms, 517ms, 844ms, and 909ms, and the

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time used by the Hadoop-based digital resource integration system is 300ms, 398ms, 469ms, 503ms, 790ms, and 811ms, respectively, and the time used by the Hadoop-based digital resource integration system is 300ms, 398ms, 469ms, 503ms, 790ms, and 811ms, respectively, and the performance is stable. Hadoop's digital resource integration system is not excellent although its effect is refined. It indicates that the performance of the other two systems is not stable, which further confirms the excellent performance of the system in this paper in the field of digital journal resource integration, and provides strong support for the efficient operation of the system.

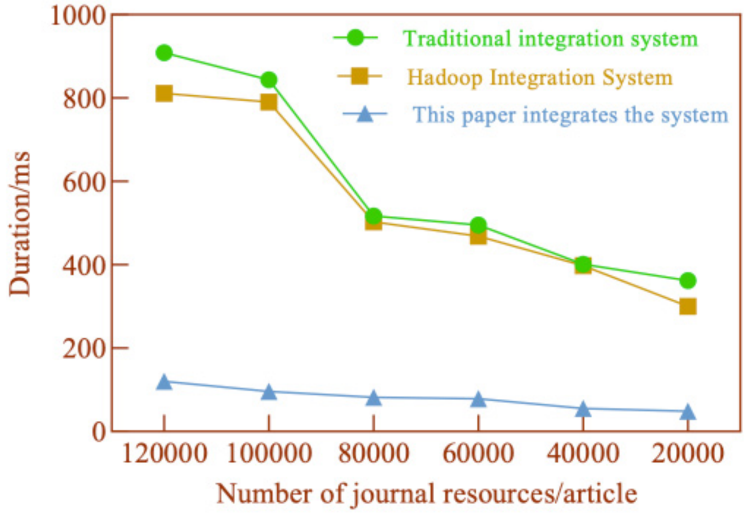

Figure 6. Comparison of time spent on integration of different systems

6. CONCLUSION

In this paper, we design the journal resource integration system under digital sharing, unify and standardize the operation of all journal metadata formats, and then add all these metadata into the established journal database to complete the design of the journal resource integration system under digital sharing. The performance of this paper's system is verified through the comparison of success rate, integration efficiency, and integration time, and the results show that the system performance of this paper's system remains stable with the increasing number of resources, and the loss rate is only 0.31% at 12,0000,. The average integration efficiency of this paper's system is 92.8%, which is 28.3% higher than the traditional integration system, and the overall time is shorter, which is below 150ms in the case of the highest number of resources. Therefore, it shows that this paper proposes a journal resource integration system under digital sharing, with high integration efficiency and stable performance, and the intelligent simulation application is of practical significance.

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