



The Application of Big Data Algorithm in the  
Personalized Management of Students by  
College Counselors

---

Jing Gui

EasyChair preprints are intended for rapid dissemination of research results and are integrated with the rest of EasyChair.

January 18, 2025

# The application of big data algorithm in the personalized management of students by college counselors

*Abstract*-The specific application of the students' personal knowledge is one of the contents of university Counselors' management of students; however, the traditional ant colony algorithm has certain limitations for solving accounting information problems, and its effect is relatively unsatisfactory. Therefore, this paper proposes a specific application in the students' personal Counselors' management of students the students' personal knowledge of colleges and universities based on big data algorithm, and analyzes the specific application in the students' personal Counselors' management of students the students' personal knowledge of colleges and universities. Firstly, Plan the relevant data in the business index to form an index system, which is convenient for later calculation. Big data is applied in various fields and is also suitable for implementation in personal Counselors' management of students, and the results were comprehensively analyzed. The simulation results based on MATLAB show that under certain evaluation standards, the specific application scheme of the students' personal knowledge based on the big data algorithm shows obvious advantages in terms of the accuracy of the specific application in the service and the processing time of the influencing factors of the specific application in the students' personal knowledge, and can achieve more ideal results than the traditional ant colony algorithm.

*Keywords*-data set theory; big data algorithms; Universities; Students' personal Counselors' management of students; Specific applications

## I. INTRODUCTION

The specific application in the Students' personal knowledge plays an important role in the Students' personal Counselors' management of students of universities [1], which can realize the precise positioning and real-time control of the specific[2] application in the Students' personal knowledge. However, the accuracy of specific application solutions in traditional the students' personal knowledge [3] has the problem of poor accuracy, which adversely affects the effect of specific applications in the

students' personal knowledge. Studies in recent years [4] considered that the big data method has a remarkable effect on personal Counselors' management of students [5], which can effectively optimize specific application solutions in the Students' personal knowledge and provide [6] reliable support. The optimization model is specifically applied in the students' personal knowledge of big data algorithm, and its effectiveness [7] is verified and evaluated in detail. By making full use of the decentralization, non-tampering and smart [8] contract characteristics of big data algorithms, the model realizes the credibility improvement and automatic execution [9] of specific application solutions in the students' personal knowledge. Through a large number of experiments and data analysis[10], the results show that comprised with the traditional scheme, the optimization model based[11] on big data algorithm has significant advantages in the accuracy of specific application in the Students' personal knowledge[12], the accuracy of specific application in the Students' personal knowledge and the ability to suppress interference factors, and can effectively improve the quality and efficiency of specific application in the Students' personal knowledge[13].

## II. RELATED CONCEPTS

### A. Mathematical description of big data algorithms

The big data method comprehensively applies business management data, realizes the integration and analysis of knowledge, and completes the promotion of personal knowledge, which finds that the unqualified value parameter of the specific application in the Students' personal

knowledge is  $y_i$ , and integrates the function of the specific application scheme in the Students' personal knowledge, and finally judges the feasibility of the specific application in the Students' personal knowledge, and the calculation is  $z_i$  shown in Equation (1).

$$\lim_{x \rightarrow \infty} (y_i \cdot t_{ij}) = \lim_{x \rightarrow \infty} y_{ij} \geq \max(t_{ij} \div 2) \quad (1)$$

Among them, the judgment of outliers is  $tol(y_i \cdot t_{ij})$  shown in Equation (2).

$$\max(t_{ij}) = \partial(t_{ij}^2 + 2 \cdot t_{ij}) \succ \frac{1}{2} (\sum t_{ij} + 4)M \quad (2)$$

Big data algorithms combine the advantages of computer technology and use specific applications in the students' personal knowledge for quantification, which can improve the accuracy of specific applications in the students' personal knowledge.

Suppose I The specific application requirements in the Students' personal knowledge is  $t_i$ , the specific application scheme in the Students' personal knowledge is  $set_i$ , the satisfaction of the specific application scheme in the Students' personal knowledge is  $y_i$ , and the judgment function of the specific application scheme in the Students' personal knowledge is  $F(t_i \approx 0)$  as shown in Equation (3).

$$F(d_i) = \prod \sum t_i \cap \xi \cdot \sqrt{2} \rightarrow \int y_i \cdot 7 \quad (3)$$

### B. Selection of specific application solutions in the students' personal knowledge

Hypothesis II The specific application function in the students' personal knowledge is  $g(t_i)$  and the weight coefficient is  $w_i$ , then, the specific application in the students' personal knowledge requires the specific application in the unqualified the Students' personal knowledge, as shown in Equation (4).

$$g(t_i) = \ddot{x} \cdot z_i \prod F(d_i) \frac{dy}{dx} - w_i \sqrt{a^2 + b^2} \quad (4)$$

Combining various assumptions, a comprehensive function for specific applications in the students' personal knowledge can be obtained, and the result is shown in

Equation (5).

$$\lim_{x \rightarrow \infty} g(t_i) + F(d_i) \leq \bigcap \max(t_{ij}) \quad (5)$$

In order to improve the effectiveness of the reliability of specific applications in the students' personal knowledge, it is necessary to standardize all data, and the result is shown in Equation (6).

The overall analysis of personal knowledge should be considered from the aspects of knowledge quantity and knowledge accumulation, so it is necessary to measure personal knowledge as a whole, and the specific results are shown in Formula (6).

$$g(t_i) + F(d_i) \leftrightarrow mean(\sum t_{ij} + 4) \phi \quad (6)$$

### C. Analysis of specific application scenarios in the students' personal knowledge

With the help of big data computing, students' personal knowledge is comprehensively analyzed, map the specific application requirements in the students' personal knowledge to the specific application library in the students' personal knowledge, and eliminate the specific application solutions in the unqualified the students' personal knowledge. The data in the above equation (6) are analyzed, a relatively standard calculation formula is obtained, and the system parameters are added to the formula, and the results are shown in equation (7).

$$No(t_i) = \frac{g(t_i) + F(d_i)}{mean(\sum t_{ij} + 4)} \sqrt{2} \Lambda \quad (7)$$

Among them, it is  $\frac{g(t_i) + F(d_i)}{mean(\sum t_{ij} + 4)} \leq 1$  stated that the scheme needs to be proposed, otherwise the scheme integration is required, and the result is  $Zh(t_i)$  shown in Equation (8).

$$Zh(t_i) = \bigcap [\sum g(t_i) + F(d_i)] \quad (8)$$

Conduct comprehensive analysis of specific applications in the students' personal knowledge, and set the thresholds and indicator weights of specific application solutions in the service to ensure the accuracy of big data algorithms. The

specific application in the service is the specific application solution in the system test service, and accurate analysis is required. If the specific application in the service is  $unno(t_i)$  in a non-normal distribution, the specific application scheme in the service will be affected, reducing the accuracy of the specific application in the overall service, and the calculation result is  $accur(t_i)$  shown in Equation (9).

$$accur(t_i) = \frac{\min[\sum g(t_i) + F(d_i)]}{\sum g(t_i) + F(d_i)} \times 100\% \quad (9)$$

According to the students' personal knowledge and knowledge preparation, it is found that the distribution between knowledge and needs is reasonable, especially business data. The specific application in the students' personal knowledge is not directional, indicating that the specific application scheme in the students' personal knowledge has strong randomness, so it is regarded as a high analysis and research. If the specific random function applied in the students' personal knowledge is  $randon(t_i)$ , then the calculation of Equation (9) can be expressed as Equation (10).

$$accur(t_i) = \frac{\min[\sum g(t_i) + F(d_i)]}{\sum g(t_i) + F(d_i)} + randon(t_i) \quad (10)$$

Conduct a comprehensive analysis of students' personal knowledge, the key qualities and repetitive programs in students' personal knowledge, supplement some insufficient data, adjust the corresponding personal relationships, and make any correlation between different programs.

### III. OPTIMIZATION STRATEGIES FOR SPECIFIC APPLICATIONS IN THE STUDENTS' PERSONAL KNOWLEDGE

The strategy based on randomness optimization is adopted for the specific application of big data algorithms in the students' personal knowledge, and the optimization of specific application solutions in the students' personal knowledge is realized by adjusting Internet information parameters. The optimization process involves classifying specific applications in the students' personal knowledge into

different levels and randomly selecting different solutions for implementation. However, it extracts the knowledge and content of students, analyzes the relevance of the implementation of each program and the impact of the program, continuously excavates the value of each program, and uses the method of the highest value to put forward feasible policies and countermeasures for the corresponding program, and completes the accurate judgment and evaluation of the program.

### IV. PRACTICAL EXAMPLES OF SPECIFIC APPLICATIONS IN THE STUDENTS' PERSONAL KNOWLEDGE

#### A. Introduction to specific applications in the Individualized management mode of students

In order to facilitate the specific application in the Individualized management mode of students, the specific application in complex cases is the research object, there is 12 paths, the test time is 12h, and the specific application scheme of the specific application in the Individualized management mode of students is shown in Table I.

TABLE I. SPECIFIC APPLICATION REQUIREMENTS IN THE INDIVIDUALIZED MANAGEMENT MODE OF STUDENTS

Scope of Grade application	Grade	Accuracy	Specific applications in the Individualized management mode of students
Knowledge base building	I	87.81	89.64
	II	93.24	90.67
Knowledge gathering	I	87.58	91.23
	II	90.44	88.47
Knowledge collation	I	90.08	90.36
	II	92.32	88.33

The specific application process in the Individualized management mode of students in Table I. is shown in Figure I.

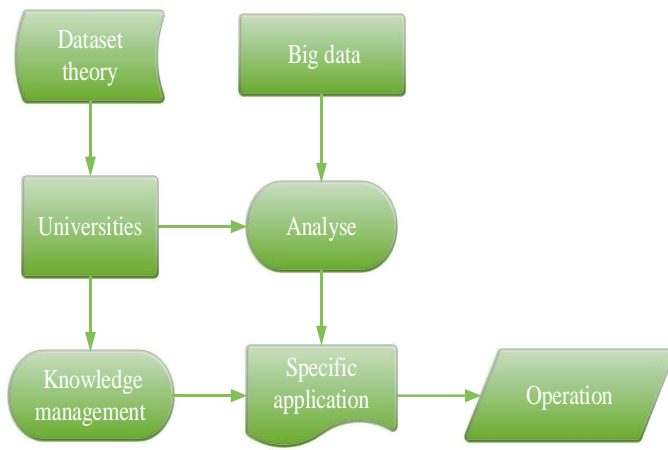


FIGURE I. THE ANALYTICAL PROCESS OF A SPECIFIC APPLICATION IN THE INDIVIDUALIZED MANAGEMENT MODE OF STUDENTS

Comprised with the ant colony algorithm, the big data algorithm is closer to the specific application requirements of the actual the **Individualized management mode of students** in the specific application scheme of the Individualized management mode of students. From the perspective of rationality and accuracy of specific applications in the Individualized management mode of students, big data algorithms have more advantages than ant colony algorithms. The changes in Figure II show that the solution accuracy of the big data algorithm is higher and more reliable. Therefore, big data algorithms perform better in terms of speed, accuracy and stability of specific application scenarios in the Individualized management mode of students.

### B. Specific applications in the Individualized management mode of students

Students should consider different results, must take into account the problems of individual students and the problems of the school, and choose different plans according to the actual situation of students. To improve the test results of the program, the program should be sampled and analyzed, which is to complete the analysis of key values, and the results are shown in Table 2

TABLE II. THE OVERALL SITUATION OF THE SPECIFIC APPLICATION SCENARIO IN THE INDIVIDUALIZED MANAGEMENT MODE OF STUDENTS

Category	Random data	Reliability	Analysis rate
Knowledge base building	88.71	92.37	90.97

Knowledge gathering	87.84	90.10	90.00
Knowledge collation	89.01	89.97	91.20
Mean	89.33	92.27	89.45
X6	91.88	87.32	89.29
	P=1.249		

### C. Specific applications and stability in the Individualized management mode of students

In order to verify the accuracy of the big data algorithm, the specific application scheme in the Individualized management mode of students is comprised with the ant colony algorithm, and the specific application scheme in the service is shown in Figure II.

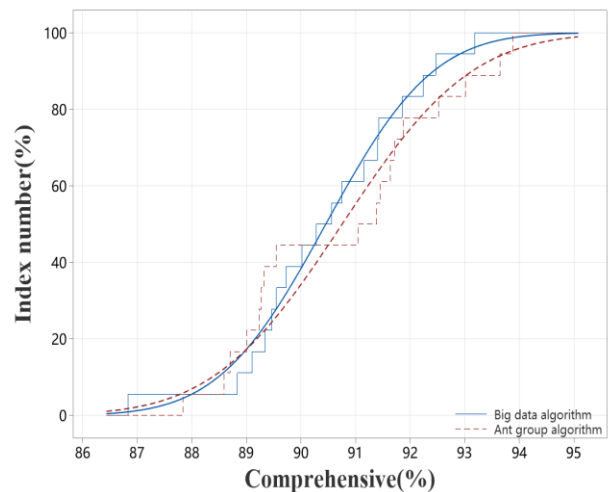


FIGURE II. SPECIFIC APPLICATIONS OF DIFFERENT ALGORITHMS IN THE INDIVIDUALIZED MANAGEMENT MODE OF STUDENTS

In Figure 2, the nootropic analysis of different methods is carried out to reduce the error rate between methods, and the corresponding analysis results can be obtained from Table 3.

TABLE III. COMPARISON OF THE ACCURACY OF SPECIFIC APPLICATIONS IN DIFFERENT METHODS OF THE INDIVIDUALIZED MANAGEMENT MODE OF STUDENTS

Algorithm	Survey data	Specific applications in the Individualized management mode of	Magnitude of change	Error

		students			
Big data algorithms	90.56	89.24	91.31	89.40	
Ant colony algorithm	89.55	91.38	93.63	87.64	
P	88.84	89.27	91.57	88.04	

According to the data analysis in Table III, there is a problem of insufficient accuracy of ant colony algorithm in specific applications in the **Individualized management mode of students**, resulting in large changes in results and high error rate. In contrast, the specific application of big data algorithms in the **Individualized management mode of students** shows higher general results and higher accuracy in specific application in services, which is better than ant colony algorithms. In addition, the accuracy rate of the specific application of big data algorithms in the **Individualized management mode of students** exceeds 90% and has a more stable accuracy performance, and there is no obvious major change. In order to further verify the effectiveness of the proposed method, other methods are used to comprehensively analyze the big data algorithm, and the specific results can be referred to Figure III. These professional analysis data further verify the superiority of big data algorithms in specific applications in the Individualized management mode of students.

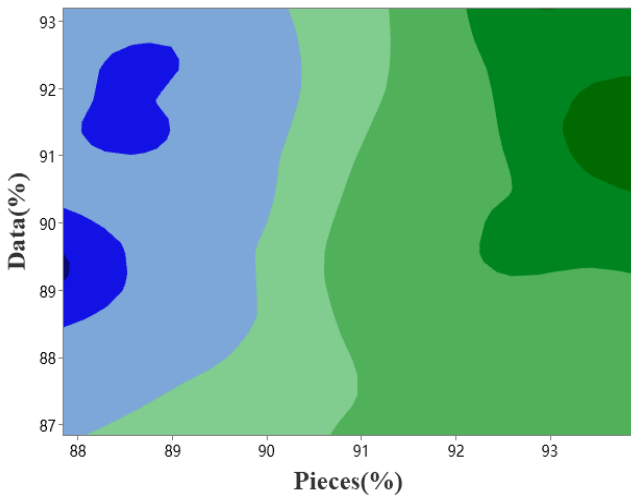


FIGURE III. SPECIFIC APPLICATIONS OF BIG DATA ALGORITHMS IN THE INDIVIDUALIZED MANAGEMENT MODE OF STUDENTS

From the data distribution in Figure 3, you can see that the yellow data represents a high degree of influence, and the green data represents a low degree of impact.

#### D. Reasonableness of specific applications in the Individualized management mode of students

In order to verify the accuracy of the big data algorithm, the specific application scheme in the Individualized management mode of students is comprised with the ant colony algorithm, and the specific application scheme in the service is shown in Figure IV.

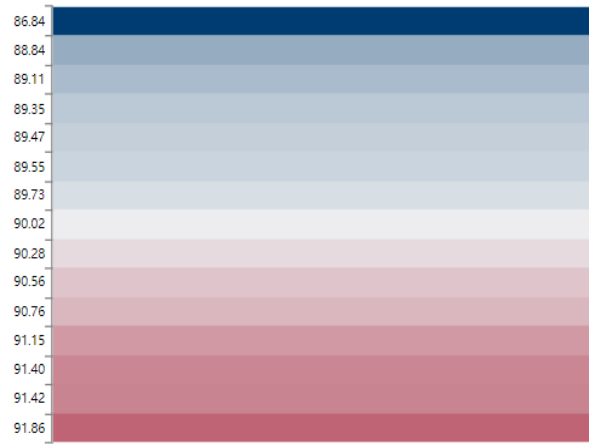


FIGURE IV. SPECIFIC APPLICATIONS OF DIFFERENT ALGORITHMS IN THE INDIVIDUALIZED MANAGEMENT MODE OF STUDENTS

In the analysis of Figure 4, it can be known that different colors replace the application degree of college students' personal knowledge, and the accuracy of the algorithm for the data analysis results of college students is more reasonable, and it can also be preliminarily judged that the algorithm can be used as one of the application methods. The introduction of big data algorithms provides a decentralized data storage and management platform for specific applications in the Individualized management mode of students to ensure the security and reliability of results. Through big data algorithms, each is given a unique identification code, and the relevant data and scheme is recorded on the big data algorithm in a chain structure. The characteristics of this big data algorithm provide data immutability and traceability, effectively preventing data tampering and fraud.

#### E. The effectiveness of specific applications in the Individualized management mode of students

effective implementation of the program is analyzed through effectiveness, and the individual only has a high analytical value in the possibility analysis, so I should make a comprehensive judgment on the credibility of the student, and the specific results are shown in the figure below.

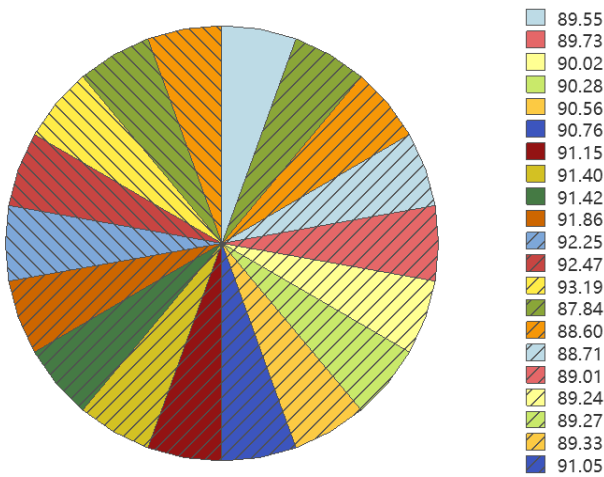


FIGURE V. SPECIFIC APPLICATIONS OF DIFFERENT ALGORITHMS IN THE INDIVIDUALIZED MANAGEMENT MODE OF STUDENTS

In the analysis in Figure 5, it can be seen that big data has a high accuracy for the management of personal knowledge, but there are certain differences between the data results, and the specific results are shown in Table 4 for physiological reasons for different differences

TABLE IV. COMPARISON OF THE EFFECTIVENESS OF SPECIFIC APPLICATIONS IN DIFFERENT METHODS OF THE INDIVIDUALIZED MANAGEMENT MODE OF STUDENTS

Different management methods	Survey data	Specific applications in the Individualized management mode of students	Magnitude of change	Increase of students' knowledge
Big data algorithms	89.73	92.53	94.24	92.46
Ant colony algorithm	90.02	91.64	92.44	87.13
Degree of concentration of knowledge	86.84	91.05	90.31	88.61

For the analysis of any data in the table, it will be found that there are certain changes in the deviation of the data, and the repetition of the changes is high, which indicates that the data is standardized and comprehensive, and also verifies the

overall validity of the results. The general results of big data algorithms are higher in specific applications in the Individualized management mode of students, which is better than ant colony algorithms. At the same time, the specific application of big data algorithms in the Individualized management mode of students is greater than 90%, and the accuracy has not changed significantly. In order to further verify the superiority of big data algorithms. In order to further verify the effectiveness of the proposed method in this paper, the general analysis of big data algorithms is carried out by different methods, Figure VI shown.

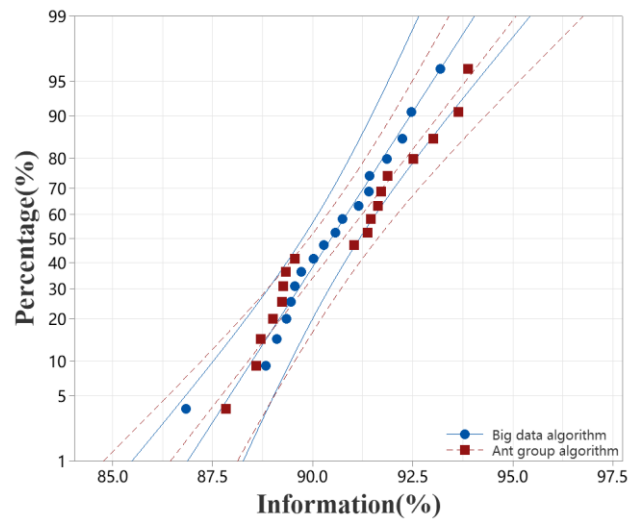


FIGURE VI. SPECIFIC APPLICATIONS OF BIG DATA ALGORITHM IN THE INDIVIDUALIZED MANAGEMENT MODE OF STUDENTS

In the analysis of personal Counselors' management of students, ant colony algorithm can improve the indicators in management, and the original algorithm is equal and difficult, so it is relatively difficult to adjust the coefficients and norms, so it is necessary to conduct a comprehensive analysis of personal management data, and the overall analysis is relatively good.

## V. CONCLUSION

Many people think that the Counselors' management of students function of big data is obvious, this paper proposes a comprehensive optimization method based on big data algorithms and computer technology. First, by using the decentralized nature of big data algorithms and data immutability, the security and reliability of data is ensured. At the same time, the data is analyzed and processed by applying computer technology to extract potential features.

Secondly, this paper deeply analyzes the key indicators of accuracy and reliability of specific applications in the Individualized management mode of students, and constructs a complete Internet information collection system to provide accurate application results in the Individualized management mode of students. However, it should be noted that in the process of applying big data algorithms, the selection of specific application indicators in the Individualized management mode of students needs to be reasonably considered to give full play to the advantages of big data algorithms.

## REFERENCES

- [1] Wu Wenfeng (2023) Exploration of the Application of "Environmental Steward" in Enterprise Environmental Management Journal of Shanghai Institute of Ship Transportation Science, 46 (3), 61-64
- [2] Wu Sha (2023) Exploring the Application of Enterprise Financial Management Information System in the Big Data Environment Accounting Studies (18), 1-3
- [3] Ma Ping (2022) The application of big data in enterprise management Modern The Students' personal knowledge (15), 3
- [4] Sun Jun (2022) On the Application of Financial Big Data in Enterprise The Students' personal knowledge Analysis and Management Accounting Studies (11), 3
- [5] Liu Guobo, Rong Kai, Tang Li, Wang Weimin, Zhou Weiqi, & Han Baolong, etc (2022) Research on the integration and application of Shenzhen urban ecological big data intelligent management and service platform technology Journal of Ecology, 42 (24), 9
- [6] Xiong Jun (2022) Analyze the application path of big data technology in the management of college student education Computer Knowledge and Technology (002), 018
- [7] Chen Wendi (2022) The application of big data in innovative thinking of enterprise management architecture (17)
- [8] Li Xin (2023) Research on the Application of Data Information Technology in Water Resources Management Ecological Environment and Protection, 6 (4), 105-107
- [9] Wei Bizhou (2023) Research on Data Asset Management and Application in the Era of Big Data Northern Finance (5), 25-29
- [10] Gao Shuzeng, Ni Weitian, Zhang Yangxin, & Yao Qian (2023) Data processing methods, devices, devices, and storage media for policy information management CN116595173A
- [11] Zhang Qianlin (2023) Discussion on Big Data and Enterprise Financial Risk Warning Knowledge Economy (24), 78-80
- [12] Cai Lei (2022) The application of cloud finance in enterprise management in the era of big data Knowledge Economy (13), 39-41
- [13] Li Mengyang, Fu Zhumu, Tao Fazhan, & Ji Baofeng (2022) A big data mining algorithm and its application in software defect management CN202210013218.5