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Research Article

Intelligent Algorithm Risk and Prevention Mechanism of College Students' Ideology under the Background of Artificial Intelligence

Huang You Yu

College of Artificial Intelligence, Zhejiang Collage of Security Technology, Wenzhou 325016, Zhejiang, China

Correspondence should be addressed to Huang You Yu; huangyouyu24@163.com

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With the rapid development of economic, the artificial intelligence network ideology of mobile Internet of things has become the core part of network security. It is also the most direct embodiment of a national ideology in the network era, and the risk prevention of ideology in colleges and universities is an important part of security work. The values, diversity, and related ideological and moral changes of college students' ideology are facing complex and severe challenges. In the age of mobile Internet of things, it is especially vital to strengthen and improve the responsibility of ideological values construction of the college students and constantly develop the risk operation and prevention management mechanism of college Internet of things.

1. Introduction

With the rapid development of mobile Internet information technology, especially the upgrading of network technology in the "big data" cyberspace, the expansion of media, and the growth of Internet users, Internet technology has become an important modern media means. Under the background that people gradually rely on Internet information, netizens are vulnerable to some wrong values, resulting in the interference and penetration of various foreign network consciousnesses on Netizens' thoughts, which are more and more difficult to control and prevent.

Network ideology is a type of network social practice that is unique. It not only follows the rules of general philosophy but also possesses a relatively unique feature of network operation. Colleges and universities play a key role in the growth of national successors, as well as in the formation of network ideology. We should focus on increasing the immune function of college students' ideological infiltration in the process of guiding and educating them. Li Bowen et al. pointed out in the analysis of the problems and countermeasures of network ideology education in colleges and universities that it should strengthen the education of network ideology, adopt effective strategies for these problems, and strive to fundamentally enhance the recognition of college students' mainstream ideology [1]. Shao Xuping said in the dialogue on the proper direction of ideological education in colleges and universities in the Internet era that the change of network media has led to the change of human society and the change of international political and economic order, and ideological education in colleges and universities has also been faced with unprecedented challenges [2]. Ning Xiaoke et al. said in their systematic analysis of the ideological security governance mechanism of China's colleges and universities in the era of big data that building the ideological security governance mechanism of China's colleges and universities by using big data technology is a systematic project, a practical need to stand firmly at the forefront of ideological work, and an important way to enhance the ideological security of colleges and universities. It is also an inevitable requirement for the innovation of ideological security governance methods in colleges and universities [3]. Ni Li said that, as an accurate paradigm of information dissemination, the technical essence of the algorithm and its hidden algorithm power determine its ideological attribute of accurate control. In the face of the new pattern of transmission power and the algorithm risk of ideology caused by the algorithm, colleges and universities should build a prevention mechanism, from passive control to active avoidance and preprevention [4].

This paper analyzes and discusses the application of the algorithm risk and prevention mechanism of ideology in the mobile Internet era on the University platform and believes that the mobile Internet era will have an increasing impact on the ideology of college students. Developing an algorithm risk and preventive mechanism for college network ideology can help to protect students' network information from hidden threats on the school intranet. Strict control of the educational ideology in colleges and universities is of key importance.

2. Main Module of Machine Learning Based on Fuzzy Neural Network

To analyze the application of algorithmic, the risk and prevention mechanism of university ideology in the mobile Internet era, the machine learning concept of fuzzy neural network is introduced to endow its robot ontology learning perception. Fuzzy neural network technology is a network technology integrating the strong structural knowledge expression ability of fuzzy logic reasoning and the autonomous learning ability of neural network. It is the result of the organic combination of fuzzy logic reasoning and neural network application [5]. By altering the connection weight between network neurons, machine learning of fuzzy neural networks may successfully reproduce human learning. It possesses self-adaptive, self-learning, and self-organization capabilities. Selecting appropriate fuzzy neural network modules and corresponding function formulas can reduce the number of errors between networks. Using the fusion technology of fuzzy system, the capture and evaluation scheme of ideological information in colleges and universities based on fuzzy neural network is analyzed, as shown in Figure 1:

In Figure 1, the student-related interactive information of the university network platform system can be directly praised, browsed, forwarded, and replied by the students. The forwarded and replied to information data will be uniformly entered into the source information base. The information of the source information base can enter machine learning through the extranet information or directly into machine learning after correlation analysis. The linear fuzzy processing provides relevant information to machine learning module for elevation. In linear fuzzy processing, the information is weighted to claim the results. The point praise and browsing behavior data of students' interactive information can be directly entered into the machine learning module, and the required evaluation results can be obtained after linear fuzzy processing.

In the current study, the polynomial depth iterative regression along with the defuzzification method of linear fuzzy network is selected. The polynomial depth iterative regression delivered connection between independent and dependent values, while the defuzzification method of linear fuzzy network provides quantifiable values to obtain results [6, 7].

Machine learning module based on sixth-order polynomial depth iterative regression basis function is as follows:

$$y = \sum_{i=1}^{n} \sum_{j=0}^{5} A_j x_i^j, \tag{1}$$

where A_j is the coefficient to be regressed of the jth order polynomial. That is, each node in the formula contains 6 coefficients to be regressed from A_0 to A_5, and j is the polynomial order.

Defuzzification module based on linear fuzziness is

$$F = S(t_n) \cdot S\left(\frac{t_n - t_{n-1}}{t_{n-1}}\right), \tag{2}$$

where $S\{t_{n'}\}$ represents the real-time value and $S\{t_n - t_{n-1}/t_{n-1}\}$ represents the difference ratio. The linear fuzzy matrix is input to the single-layer binarization, and the output result on a [0, 1] interval is output: [0.9,1.0] is red; (0.8,0.9] is orange; (0.7,0.8] is yellow; (0.6,0.7] is blue; [0.0,0.6] is no warning.

3. Division of Data Sources and Calculation of Time-Domain Integral of Results

The campus is a reduced version of a social group, with the interweaving of various interpersonal relationships. In the era of Internet mobile communication, the students' way of thinking has changed and got advance now, which dominates the trend of the younger generation.

Short videos, We Media, and school intranet have become the entertainment methods of school students. While recording their life clues, they also expose their personal information and daily path to software app. The more personal information resources are collected, the easier it is to define the individual. Furthermore, different software systems share the user's personal information. After image and sound extraction, face recognition, voice communication system recognition, landmark recognition, key background music recognition, and personal data will be basically formed [8, 9].

The legitimacy of data capture is agreed to avoid capturing nonpublic information and encourage the opening of semipublic information. In recent years, more and more system software obtains the approximate geographical location of users by sharing users, resulting in the violation of users' privacy by bad apps, as shown in Figure 2.

The new key point recognition process of image information and sound uses the spatial convolution algorithm, and its basis function is shown in (3).

In order to achieve the above image processing objectives, the spatial convolution basis function is applied:

$$y = \int_{-\infty}^{+\infty} g(x) j(a - x) dx, \tag{3}$$

where *g(x)* is the original image, *j(a-x)* is the convolution kernel, x is the traversal variable, a is the auxiliary positioning variable, and y is the output value of neural network.

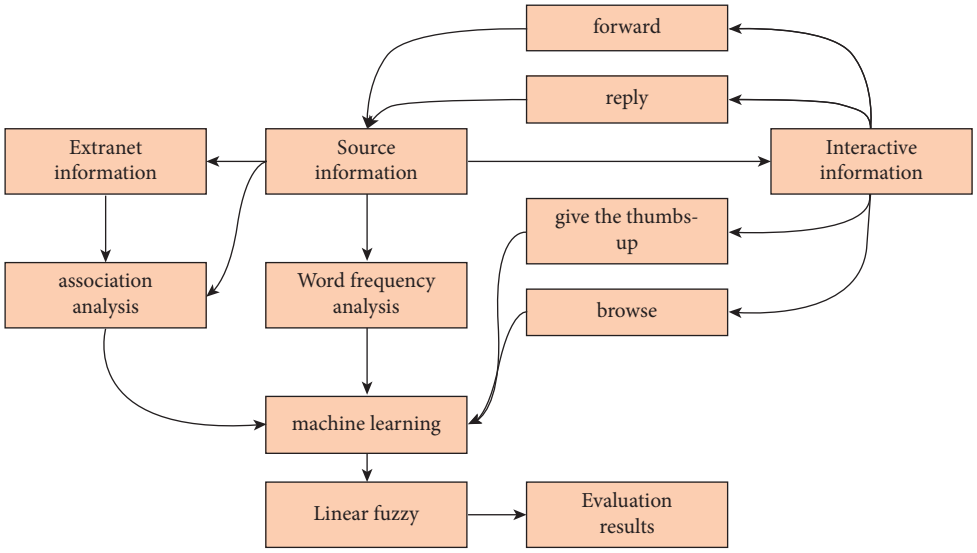

Figure 1: Capture and evaluation scheme of ideological information in colleges and universities.

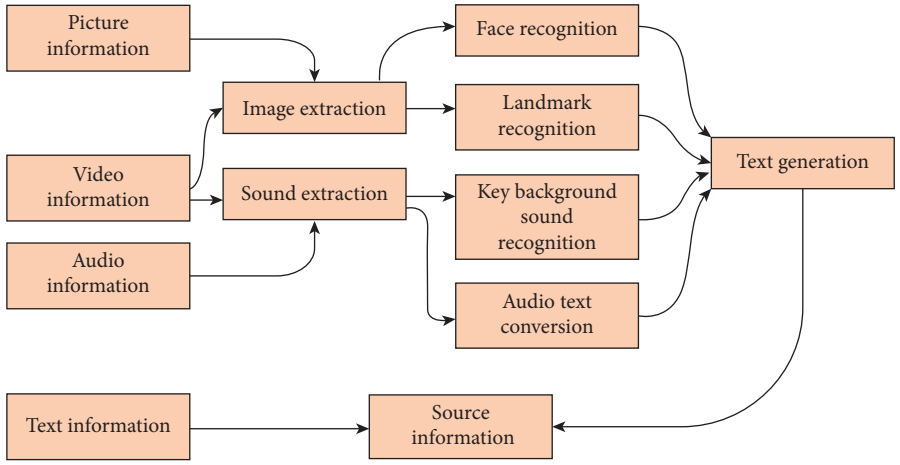

Figure 2: Data preparation process of data source.

4. Data Association Analysis Driven by News Fusion Technology

Hierarchical one to many data fission association: each information corresponds to multiple forwarding, likes, collections, browsing, and other operations. It focuses on the forwarding action of information and tracks all associated operations in the forwarding process.

For capturing and securing information of strong contacts and weak contacts, the spatial propagation clustering method signifies each node as the linear composition of other nodes. For this purpose, it takes the global linearity of the data and does the random extraction of multiple tuples from the captured data as the initial centers of multiple clusters. Then, the distance between other data and these initial centers is calculated by it. Each tuple is classified into the nearest group, to go through the distribution of clustering groups.

AP algorithm takes all nodes as a potential cluster center, mainly uses the similarity between two nodes in the dataset for iterative calculation, and finds the optimal similar cluster center through the propagation between nodes. The similarity is expressed as the negative number of the square of the Euclidean distance between two nodes. The formula of the similarity matrix between input nodes is as follows:

$$S(i, j) = -\left\| x_i - x_j \right\|. \tag{4}$$

In the AP algorithm, the center point $P = \text{median}(s)$ needs to be confirmed, which is used to refer to the value of the offset center. It defaults to the average value of the similarity matrix. The algorithm adds A (Availability) algorithm and R (responsibility) algorithm to the calculation process. The data in the two matrices are superimposed and updated continuously in the iterative calculation process.

Among them, $A = (a(i,j))_{max}, a(i,j)$ is the information value sent from node j to node i, which is defined as the optimization degree of node i selecting node j as the cluster center; $R = (r(i,j))_{max,} r(i,j)$ is the information value sent by node i to node j, which is defined as the optimization degree of node i selecting node j as the cluster center. The iterative formulas of input attribution matrix and attraction matrix are as follows:

$$\begin{aligned} r(i,k) &= s(i,k) - \max\{a(i,j) + s(i,j)\} j \in \{\{1,2,...,N | j \neq k\}\}, \\ r(k,k) &= p(k) - \max\{a(k,j) + s(k,j)\} j \in \{\{1,2,...,N | j \neq k\}\}, \\ &\begin{cases} a(i,k) = \min\left\{o, r(k,k) + \sum\{\max\{o, r(j,k)\}\}\right\} \\ j \in \{1,2,...N \mathrm{I} j \neq i, j \neq k\} \end{cases}, \\ a(k,k) &= \sum\{\max\{o, r(j,k)\}\} j \in \{\{1,2,...,N | j \neq k\}. \end{aligned} \tag{5}$$

In order to prevent drift, a damping factor is added to the matrix of attribute similarity λ. To increase the stability of the algorithm, the input formula is as follows:

$$\begin{aligned} r(i,k)^{t+1} &= \lambda . r(i,k)^{t} + (1-\lambda) . r(i,k)^{t-1}, \\ a(i,k)^{t+1} &= \lambda . a(i,k)^{t} + (1-\lambda) . a(i,k)^{t-1}. \end{aligned} \tag{6}$$

According to the iterative calculation method of the above formula, we calculate the matrix of attribution and attraction to maximize the clustering objective function. The clustering function is as follows:

$$\mathrm{S}(\mathrm{C}) = \sum_{i=1}^{N} s(i, c_i) + \sum_{k=1}^{N} \delta_k(C), \tag{7}$$

where c_i is the cluster center point of node i, C is composed of c_i is a vector consisting of i, i is 1, 2, N (n is the number of nodes), and S(C) is the sum of the similarity of all nodes to their respective cluster centers. The input formula of $\delta_k(C)$ is as follows:

$$\delta_k(C) = \begin{cases} -\infty, C_k \neq kAn\ d\exists i, C_i = k, \\ 0, \quad other. \end{cases} \tag{8}$$

This formula is used as the constraint term of consistency. If there is a node i, select k as the central point of its clustering, that is, $C_i = k$ is established, node k must choose itself as the cluster center, that is, $C_\lambda = k$. Otherwise, the value of the function is -∞ so that node i no longer selects k as its own clustering center in the next iteration.

After iteration, the cluster center point is selected again by calculating the value of $A + R$. When $(r(k,k) + a(k,k)) > 0$, node k becomes the cluster center point. The formula of cluster center point C_i in each node is as follows:

$$c_i = arg \max_k \{a(i,j) + r(i,k)\}. \tag{9}$$

The expression of the formula selects the cluster center with the largest sum of attribution and attraction for each node as its own cluster center.

5. Verification Results of Educational Practice

From 2018, it will be deployed to guide college students' ability to control the algorithm because it is the main link to deal with the risk of college ideological algorithm; cultivate college students' ability and literacy to use the algorithm, and the algorithm will help improve college ideological education and give play to the ability to guide college students' ideas and gather ideological consensus [10]. The necessity and results of the risk and prevention mechanism of the algorithm are verified from three aspects: students' examination results, the effect of discipline management, and students' employment.

5.1. Comparison of Students' Test Scores. Statistical analysis is made on the examination situation of students from 2017 to 2021, that is, from the aspects of pass rate, excellent rate, achievement improvement rate, and teachers' teaching evaluation, so as to verify the effectiveness of this research algorithm.

In Table 1, since the implementation of the algorithmic risk and prevention mechanism of ideology in Colleges and universities in 2018, the passing rate, excellence rate and achievement improvement rate of students have increased year by year, and the satisfaction with teachers' teaching evaluation has also increased year by year, which shows that with the increase of implementation time, students' examination scores have also improved, which are positively correlated.

In order to make the data in Table 1 look more simple and clear, we make broken line, as shown in Figure 3.

In Figure 3, it can be clearly seen that the passing rate and excellent rate of students increase with the increase of years; especially, when the ideological algorithm risk and prevention mechanism of the study is used in 2018, the growth rate is the highest.

5.2. Comparison of the Effect of Student Discipline Management. The discipline management of students in colleges and universities is a very important link. College life is relatively loose. If there is no restriction, it is easy to be affected by the external environment, resulting in the neglect of studies. The algorithm helps to improve ideological education in colleges and universities, helps schools to restrict and manage themselves, and makes effective use of time to learn professional knowledge.

In Table 2, according to the data from 2017 to 2021, when the algorithm was not deployed and implemented in 2017, students' discipline was poor, and there were many phenomena such as missing classes, exams, and being late. However, the use of the algorithm in 2018 enhanced students' sense of identity with the mainstream ideology and made students more self-discipline and discipline. Therefore, since the application of the algorithm in 2018, students' enthusiasm for class has increased, so the late rate and absence rate have decreased year by year. At the same time, the number of people who abide by the examination discipline has increased, so the absence rate and cheating rate have also decreased year by year.

Table 1: Comparison of students' test scores.

Year	Pass rate (%)	Excellent rate (%)	Performance improvement rate (%)	Satisfaction with teaching evaluation results (%)
2017	61.35	5.64	16.35	63.57
2018	67.51	7.65	21.84	70.23
2019	80.93	15.67	33.62	85.64
2020	85.25	19.74	39.41	88.62
2021	89.56	23.11	43.83	91.61

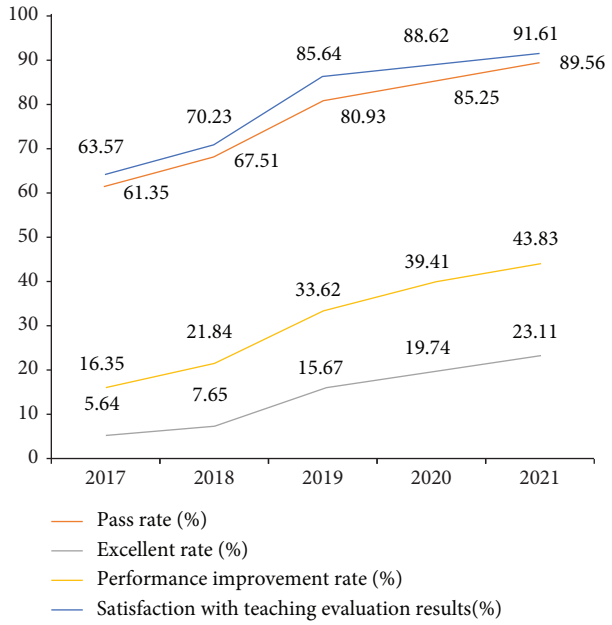

Figure 3: Student performance during 2017–2021.

Table 2: Comparison of the effects of student discipline management.

Year	Absenteeism rate (%)	Late rate (%)	Absence rate (%)	Cheating rate (%)
2017	26.52	24.57	17.94	32.57
2018	21.36	20.81	14.35	26.34
2019	12.68	11.02	8.37	17.58
2020	10.57	7.68	6.41	11.69
2021	6.94	4.23	3.72	7.54

5.3. Comparison of Student Employment. The school is the cradle of distribution of knowledge to students, with the purpose of improving employment. Because the laziness of study causes the inconsistency of professional knowledge and expertise, the employer cannot pass the assessment, and the employment intention is not clear. Through this algorithm, students can be educated and guided to have a correct ideological understanding, to correct their learning attitude and their own habits and management, expand their knowledge in other fields, and improve their comprehensive quality while receiving professional knowledge.

In Table 3, it can be seen from the employment data of students from 2017 to 2021 that when the deployment and implementation of the algorithm were not carried out in 2017, the one-time employment rate of students reached 85.67%, the one-time turnover cycle was also short, only 3.54%, and students' employment satisfaction and enterprises' satisfaction with students were not too high. However, since 2018, various indicators of student employment have improved significantly. The one-time employment rate has increased to 98.41%, and the time of one-time resignation cycle has become longer, reaching 26.87%, which shows that the employment situation is relatively stable.

Figure 4 covers all the verification indicators. It can be seen from Figure 3 that, in 2017, all indicators are not favorable. It improved in 2018 following the deployment and implementation of the design algorithm. A year after the implementation in 2019, all indicators have shown swift improvement demonstrating that the algorithm has a considerable impact on college students' ideological security education.

6. Summary

In contemporary society, the network has become the most important tool for people to communicate and disseminate information resources. In the age of mobile Internet, this

Table 3: Comparison of student employment.

Year	Primary employment rate (%)	One turnover cycle (month)	Employment satisfaction rate (%)	Enterprise satisfaction rate (%)
2017	85.67	3.54	73.91	80.02
2018	88.54	9.31	79.26	84.36
2019	96.57	18.25	88.94	92.21
2020	97.84	23.54	93.97	95.35
2021	98.41	26.87	95.68	97.68

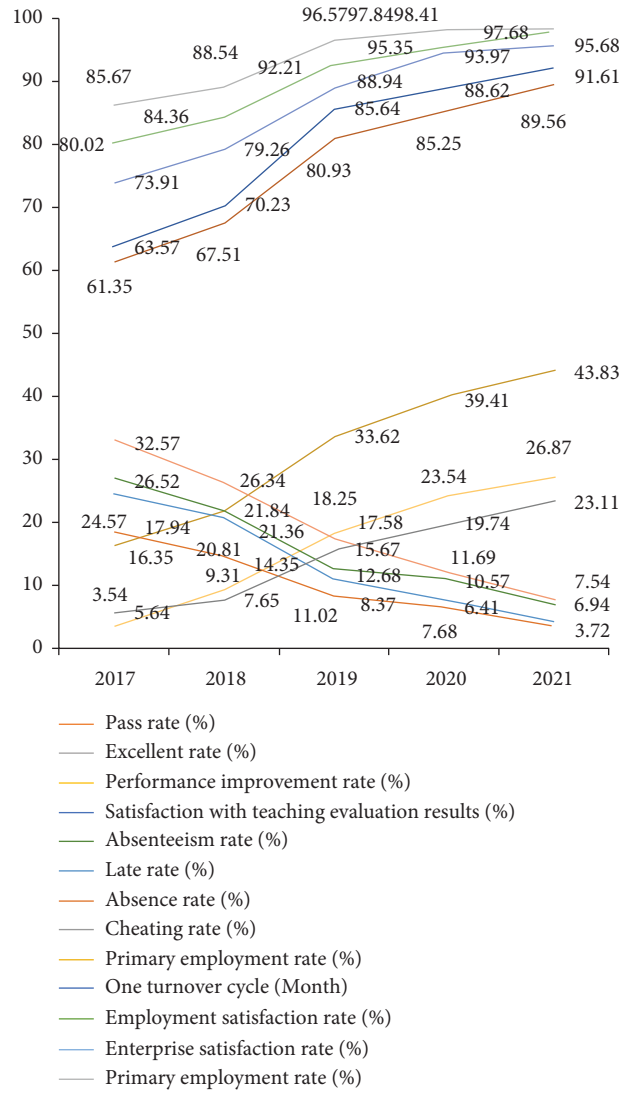

Figure 4: Verification results of educational practice.

study, therefore, designs the algorithm risk and prevention mechanism of college Ideology so that college students can master the discourse power of college ideology security independently making the system of college ideology security discourse power more understandable and reliable. From the perspectives of students' examination outcomes, discipline management effect, and student employment, this study verifies the practicality and superiority of the design. The design can be deeply integrated through the combination of mobile Internet and ideological security education in colleges and universities, which is conducive to the smooth development of ideological security education in colleges and universities, and can be popularized and used among all colleges and universities. However, the research algorithm design will be optimized and improved in the follow-up to better serve the mainstream ideological security education for students in colleges and universities [11].

Data Availability

The data underlying the results presented in the study are available within the article.

Disclosure

The authors confirm that the content of the manuscript has not been published or submitted for publication elsewhere.

Conflicts of Interest

There are no potential conflicts of interest in this study.

Authors' Contributions

All authors have seen the manuscript and approved to submit to the journal for publication.

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