The Application of Artificial Intelligence Technology in Ideological and Political Education

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***Abstract*—As for many schools, artificial intelligence will be more than a practical background; it is also a technical tool and an opportunity for development. Artificial intelligence's in-depth integration and standardization can inject new technological momentum into effectively identifying educational objects' ideological dynamics, improving educational content's accuracy, and expanding the spatial dimension. It has become one and such an inevitable trend of innovation and development. However, there are also many potential risks and practical problems at the value premise, technical limits, and specific operation level, such as privacy protection and ideological security risks, the loss of educational subjectivity, the digitization of educational relations, and the lack of specialized talents. Therefore, it is necessary to look at the technical momentum and potential risks of artificial intelligence dialectically, promote the rationality of educational value, strengthen technical supervision, forge an intelligent education team, reasonably define the integration boundary and application scope of artificial intelligence, and combine the main initiative of human beings with the intelligence of machines. It combines strengths, actively explores the path of coexistence and co-prosperity between education and technology, and consciously constructs an intelligent form of them.**

Keywords*—*Artificial intelligence; ideological and political education; wisdom development; semantic understanding and emotional analysis

I. INTRODUCTION

As the frontier one, to usher the ones in the intelligent era"[1], the wide fields of society will be prompting another profound change in education, which has profoundly impacted various educational practice activities [2]. In the face of the superimposed development of informatization, the Internet, blockchain, and artificial intelligence (AI) technology, He has repeatedly stressed that in education and other fields, innovate the intelligent service system"[3].

The dynamic changes in the attention and interest of educational objects track the interactive data between educators and educational objects on time and investigate the educational objects through data change trajectories. The state of thinking and behavior accurately grasp the individual needs of educational objects and provides reliable support for formulating scientific and effective educational programs. For artificial intelligence, the processing technology transcends traditional statistical analysis methods, can collect and analyze all data samples, and can integrate qualitative and quantitative data, historical and current data.

It is necessary to think deeply about how to update one iteratively, follow the trend, continuously strengthen the deep integration with artificial intelligence, and use the power of artificial intelligence to promote intelligent transformation and upgrade them to provide a high-quality future society [4]. The development of socialist modernization and the comprehensive construction of socialist modernization cultivate intelligent compound talents [5].

As a powerful scientific and technological force that subverts traditional educational concepts and shapes the future education form, its accelerated iteration and all-around integration have opened a new chapter in innovative development and have classified such objects and contents [6]. Quality improvement in distribution, space expansion, and discourse expression provides strong technical support [7].

"If Communist Party members want to do propaganda, they must look at the objects." The prerequisites are effective classification of objects, and accurate identification of object needs [8]. Subject to factors such as ideological complexity and technical limitations, traditional ones usually distinguish objects based on criteria such as field, age, major, and class, which makes it difficult to reflect the particularity, complexity, and dynamics of education [9]. For artificial intelligence, "the application of technology allows us to record them more completely, and provides convenience for using other research methods to understand people's thoughts."

People’s thoughts and concepts, emotional orientations, hobbies, and daily behaviors in the real world may be mapped to some digital existence, and people’s thoughts and behaviors thus become measurable, recordable, predictable, and cluster-analyzable.” Intelligent data becomes the second body of human beings [10].” "Once the relevant data was fully grasped, it is possible to completely predict and grasp individuals' behavioral tendencies and dispositions using digital drawing [11]." The data portrait of people's thoughts and behaviors opens new possibilities for people to understand themselves and profoundly changes them [12]. Their ecology has been realized, and the revolutionary leap for classification technology of ideological and political education objects has been established, thus establishing the internal relationship between the two [13].

For artificial intelligence, the processing technology transcends such traditional statistical analysis methods, can collect and analyze all data samples, and can integrate qualitative data and quantitative data, historical data and current data, individual data and overall data [14]., to more

completely outline the appearance of human thought and behavior [15].

First, objectively present the ideological and behavioral state of educational objects. Under the condition of AI empowerment, colleges and universities can, within the scope of laws and ethics, comprehensively collect data traces such as social preferences, browsing preferences, and value orientations of educational objects in their daily lives and clarify their different roles and responsibilities in the online world [16]. Artificial intelligence (AI) has penetrated into various fields, bringing unprecedented convenience to our lives and work. In the field of education, especially in ideological and political education in universities, the introduction of AI is changing the traditional education model, providing a more personalized and efficient learning experience [17]. AI can provide real-time learning guidance and troubleshooting for students through learning and analyzing a large amount of data, improving their learning effectiveness. AI can simulate human emotional communication, establish emotional connections with students, and enhance their learning motivation and satisfaction [18].

The second is to dynamically capture the changes in the thinking and behavior of educational objects [19]. With the help of technologies such as attention recognition, dynamic capture, and data association analysis, colleges and universities can correctly observe the dynamic changes in the attention and interest of educational objects, track the interactive data between educators and educational objects on time, and investigate the educational objects through data change trajectories [20]. The state of thinking and behavior accurately grasp the individual needs of educational objects and provides reliable support for formulating scientific and effective educational programs. For artificial intelligence, the processing technology transcends traditional statistical analysis methods, can collect and analyze all data samples, and can integrate qualitative and quantitative data, historical and current data [21].

Third, educational object classification standards are more scientific, and the presentation method is more intuitive. Under the background of artificial intelligence technology, it has become a reality to classify educational objects based on the standard of "difference in ideas"[22]. This standard helps classify educational objects by highlighting the individual's ideas, behavioral orientation, emotional attitude, hobbies, and differences. More importantly, artificial intelligence technology can turn college students' dynamically changing ideological behaviors, emotional concepts, and other vague elements into clear, accurate data and present different circles and types. This provides a technical prerequisite for them to carry out various activities for batches, circles, and methods [23].

It can simulate any other prediction function p(x) of the algorithm. This is not possible with any other machine learning algorithm [24]. One is the imitation theory. The theory of imitation mainly believes that artificial intelligence explores the thinking process of the human brain, mainly simulates human intelligence and studies the science of extending human mental work to some physical device. Artificial intelligence is the ability of machines (computers) to perform some complex functions related to human intelligence (such as judgment, pattern recognition, understanding, learning, decision-making, planning, problem-solving, etc.). Artificial intelligence's task is to replace the human brain and manual labor with machines partially. For example, some scholars think that the purpose of AI is to make the computer, the machine, think like a human. Artificial intelligence is a technology that simulates the realization of human thinking. Its main purpose is to give robots the unique ability to see, hear, speak, and abstract thinking in the brain. It is especially reflected in thinking activities such as judgment, reasoning, proof, identification, learning, and problem-solving. In general, it is a combination of knowledge and thinking. This statement is widely used in academic circles and imitation of human intelligence, imitating human thinking and action patterns [25].

The main contributions of this study are as follows:

1) Artificial intelligence can provide personalized educational programs for students by analyzing their learning habits, interests, and career plans. This educational approach helps to stimulate students' interest in learning, improve their learning outcomes, and also helps to enhance the pertinence and effectiveness of ideological and political education.

2) Artificial intelligence technology can assist teachers in teaching management, course design, and teaching evaluation. This helps to reduce the workload of teachers, improve teaching efficiency, and also enhance the quality of ideological and political education.

3) By building an intelligent learning platform, students can learn anytime and anywhere. This learning method helps to break the limitations of traditional classrooms and provide students with more flexible and convenient learning methods.

Section I first analyzes the advantages of AI empowerment. Universities can dynamically capture changes in the thinking and behavior of educational objects, and comprehensively collect their preferences. Section II introduces the relevant concepts and theoretical foundations. Section III utilized RCGA, which effectively addressed multiple domains. The focus is on the ability of wavelet functions to process synthetic data, as well as the classification of functions, hyperbolic tangent functions, and threshold linear functions. Section IV conducted a survey and analysis on the value demands of empowering college students with artificial intelligence in ideological and political education. Decompose the learning task of fuzzy cognitive maps based on their sparsity. This algorithm has overcome the shortcomings of existing methods and achieved breakthroughs of multiple orders of magnitude. Section V summarizes the entire text, and it is necessary to dialectically examine the technological momentum and potential risks of artificial intelligence, promote the rationality of educational value, strengthen technical supervision, build an intelligent education team, and reasonably define the integration boundary and application scope of artificial intelligence.

II. Related Concepts and Theoretical Basis

Its related inventions and applications have begun to cover our lives, and intelligent life has become within reach [26]. The research basis of the present work is the artificial intelligence environment and its use for the problems caused by traditional political and ideological education of college students, such as the inability to large-scale individualization in the process and for this chapter, a discussion will be held in conjunction with basic theoretical issues related to artificial intelligence, including the basic concepts and characteristics of artificial intelligence and the basic concepts, the new features of artificial intelligence and its application for education. Rather than optimizing some parameters in existing models, such as polynomial curves and nodal systems, the approach employed by neural networks is a specific perspective on data modeling that does not seek to exploit any independent system fully but directly approximates data functions. The neural network architectures are so familiar to model merely ideas. With the power of neural networks and continued research into the bottomless field of deep learning, data—whether video, sound, epidemiological data or anything in between—can be modeled; neural networks are indeed algorithms of algorithms [27].

A. Artificial Intelligence

A concept is a form of thinking that reflects the essential properties of an objective object. Understanding the concept of AI, especially the concept of intelligence, can effectively reflect the essential characteristics of artificial intelligence and is helpful. In academia, intelligent science and technology are the core of research in nature, humanities, and social sciences effects and changes [28].

This is compared with the concept of intelligence in the context of applied science, which was proposed as early as the 17AC and was first proposed in 1956. Still, in the short decades after it was proposed, artificial intelligence developed rapidly. Robot vision, intelligent robots, robot planning, and other categories include intelligent control in modern control theory, fuzzy mathematics, and fuzzy control theory in modern control theory [29].

There are many opinions in the academic circle about the definition of artificial intelligence. Among them are mainly divided into:

One is the imitation theory. The theory of imitation mainly believes that artificial intelligence explores the thinking process of the human brain, mainly simulates human intelligence and studies the science of extending human mental work to some physical device. Artificial intelligence is the ability of machines (computers) to perform some complex functions related to human intelligence (such as judgment, pattern recognition, understanding, learning, decision-making, planning, problem-solving, etc.). Artificial intelligence's task is to replace the human brain and manual labor with machines partially. For example, some scholars think that the purpose of AI is to make the computer, the machine, think like a human. Artificial intelligence is a technology that simulates the realization of human thinking. Its main purpose is to give robots the unique ability to see, hear, speak, and abstract thinking in the brain. It is especially reflected in thinking activities such as judgment, reasoning, proof, identification, learning, and problem-solving. In general, it is a combination of knowledge and thinking. This statement is widely used in academic circles and imitates human intelligence, thinking, and action patterns [30].

The second is the expansion theory. The expansion theory of the concept of artificial intelligence mainly believes that artificial intelligence is not only an imitation of human intelligence but should play a role in expanding human intelligence based on imitating human thinking and behavior and finally achieving the goal of enhancing human intelligence purpose.

Third, comprehensively. The comprehensive theory of artificial intelligence concept mainly refers to artificial intelligence, including all the terms of many sub-fields, involving an extensive range of applications. In the view of scholars who support the comprehensive theory, artificial intelligence does not only refer to robots that can imitate human thinking and behavior. They believe that artificial intelligence includes technologies such as image recognition, video recognition, semantic understanding, and sentiment analysis. It is a general term for specific technologies but does not regard artificial intelligence as a general ability.

This paper is considered the manifestation of the prosperity of deep learning algorithms based on big data, and it is not equivalent to the "general artificial intelligence" that tried to restore human intelligence and behavior in the form of robots in the past. It is not that only robots are artificial intelligence, as most people think. Artificial intelligence should be a comprehensive technology with six major technical directions: big data, statistical analysis, natural language processing, speech processing, planning and decision-making systems, and computer vision. One or several technical directions can be called artificial intelligence. Artificial intelligence can perceive, analyze, understand, think, decide, and interact. The ones (cloud computing) are the three cornerstones of today's artificial intelligence technology, of which the main technologies of artificial intelligence are deep learning and big data analysis. This paper is to conduct further research on this basis.

B. The Ideological and Political Education of College Students

Since the birth of New China in 1949, generations of outstanding college students have played a pivotal and historic role in gradually building our country into a prosperous, democratic, civilized, and harmonious modern socialist country. As pointed out in the one. On September 30, 2013, the ninth collective study of the Political Bureau of the Eighteenth Central Committee found that it is an important source of talent for socialist construction. As the primary position in the education of college students, it has great strategic significance in cultivating them into qualified construction. Logical reasoning is one of the most enduring for AI research. It is important to find ways to focus only on relevant facts in a large database, be on the lookout for credible proofs, and revise them as new information emerges. Finding a proof or disprove of a speculative theorem in mathematics is indeed an intelligent task.

1) Group characteristics of college students: They are mainly born after "95" and "00". Compared with the "post-90s", the group has more obvious group characteristics. The ideological and political education of college students must be targeted according to the group features of current college students, the pursuit of individualized value. "Post-00" college students grew up in an era that advocated independence and advocated that contemporary college students should have independence and autonomy. Therefore, when faced with choices, the new generation of college students who grew up in a material-rich environment tend to ignore material pursuits and pay more attention to personal emotional experience and the realization of self-worth. Without large-scale personalized teaching, it is impossible to meet the personalized pursuit of every college student. The characteristics of college students' value pursuit in the new era have brought challenges to the development of college students' ideological and political education.

Second, the network behavior is diversified. "Post-00" college students were born and grew up in the Internet age, and their daily lives and studies reflect "Internet thinking." As the "indigenous people" of the Internet, their daily communication is full of Internet terms; most of their communication methods use WeChat, QQ, and other software; the proportion of their online consumption far exceeds that of brick-and-mortar stores. The Internet has become the "residence place" of college students after "00". At this time, ideological and political education in college students should conform to the background of the Internet era, use big data, artificial intelligence technology, etc., and its relevance and effectiveness. Robots that can imitate human thinking and behavior. It includes technologies such as image recognition, video recognition, semantic understanding, and sentiment analysis. It is a general term for specific technologies but does not regard artificial intelligence as a general ability.

Therefore, the students should conform to the development of the times, and under the clear background of the times, macroscopically grasp the character characteristics of the entire college student group and carry out one and political education based on this. The group of college students who are mainly "post-00s" happens to be in the social background of the rise of artificial intelligence. It is vital to think about how to change the ideology and politics and whether to change or stick to it.

2) Main features: It has entered a new era, and it is required to firmly grasp the leadership of ideological work, cultivate and practice socialist core values, and strengthen ideological and moral construction. College students should also have a new form. As the main direction of technological innovation, the integration of AI with ideological and political education in college students is imperative, and it is conducive to the "intelligence enhancement" for artificial intelligence; learners should have new ideas, new forms, new models and new paths, in Fig. 1:

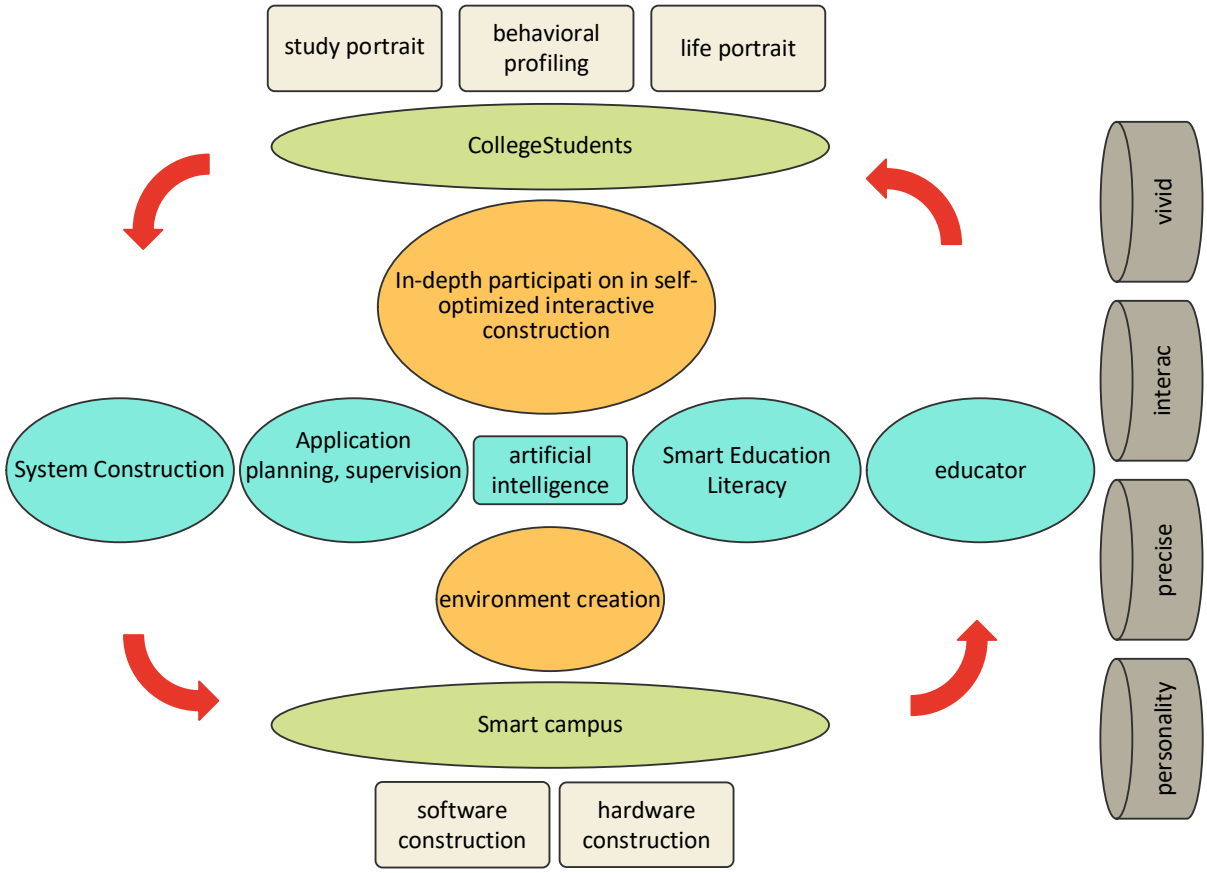

Fig. 1. Smart teaching mode of ideological and political education for college students.

The theory of human beings is the core theory of Marxist theory. Marx believes it mainly refers to such labor ability, social relations, the all-round development and great satisfaction of human needs, and the freedom of human personality. The comprehensive for college students lies in the comprehensive development of comprehensive quality, specifically the comprehensive, coordinated, and sustainable one.

Under the new historical conditions, there are differences in the individual ones. To achieve the all-round development of every college student, relying only on the existing forms of ideological and political education for college students is far from achieving the goal of promoting the all-around development in the general environment, mainly carried out in the form of ideological and political theory courses. The forms and contents of ideological and political education are gradually enriched with the reform. It is still impossible to consider every college student, and it is impossible to target education according to the personality characteristics of college students. With the blessing of artificial intelligence, they can conduct big data analysis based on the data intelligently sensed and excavated by artificial intelligence. By building a visual personality model of college students, they know the ideological development characteristics of college students and realize precise and personalized education., to achieve the all-round development of college students. College students have also changed from passively to being able to do independently and completing the basic required learning content to achieve free development.

Therefore, in the future, artificial intelligence will enable the emergence of a new concept of precise and personalized education, which can realize high-precision personalized education through big data and make large-scale personalized education a reality. Not only small-scale personalized education can be achieved.

III. Related Technologies

The RCGA-FCM algorithm automatically generates FCM by using historical data without human intervention. This method can provide a fully automated solution for learning FCMs. In addition, the algorithm also compared the size and connection density of FCM to select the most effective design environment. This chapter uses RCGA, and it has effectively dealt with multiple domains. Then, the chapter needs it, and this chapter focuses on the ability of wavelet functions to deal with synthetic data and classification problems for functions, hyperbolic tangent functions, and threshold linear functions rather than one. When learning such FCM, it will be

$$W = \left[w_{11}, w_{12}, \dots, w_{1N_n}, w_{21}, \dots, w_{2N_n}, \dots, w_{N_nN_n}\right] \quad (1)$$

The wavelet function-based FCM one is designed. The one which is an approximation of such one:

$$F = \frac{1}{\left(\frac{\beta}{N(T-1)} \sum_{t=1}^{T} \sum_{i=1}^{N} (C_i^*(t) - C_i(t))^2 + 1\right)} \quad (2)$$

A. Wavelet Fuzzy Cognitive Map

The wavelet function-based FCM one is designed. The one which is an approximation of such one. A wavelet function consists of the following:

$$L^2(R) = \left\{x(t):_R \int |x(t)|^2 dt < \infty\right\} \quad (3)$$

The mother wavelet ψ(x) ∈ L2(R) must satisfy the condition

$$L^2(R) = \left\{x(t):_R \int |x(t)|^2 dt < \infty\right\} \quad (4)$$

where, it represents the wavelet family achieved by the parent wavelet ψ(x) by dilation and translation. It will be like this:

$$\psi_{a,b}(x) = |b|^{-\frac{1}{2}} \psi\left(\frac{x-a}{b}\right) \quad (5)$$

where, ψa,b(x) represents the wavelet family achieved by the parent wavelet ψ(x) by dilation and translation. Reference [17] carried out a detailed analysis of wavelets. Based on Eq. (3) and Eq. (5), the kinetic equation of WFCM is:

$$C_i(t+1) = \psi_{a,b}\left(\sum_{j=1}^{N_n} w_{ji} C_j(t)\right) \quad (6)$$

Such artificial data and it then generates response sequences from each initial state vector by implementing step c) until T iterations are reached.

$$\psi_{a,b}(x) = \left(1 - \left(\frac{x-a}{b}\right)^2\right) e^{\left(-\frac{(x-a)^2}{2b^2}\right)} \quad (7)$$

where, a and b are parameters in WFCM. Since Eq. (7) is easier to handle than Eq. (5), the factor of |b|-0.5 is removed in this chapter.

B. Manual Data Regulation of Network Data

The algorithm will have the possibility of accurately learning fuzzy cognitive maps. The algorithm breaks through the shortcomings of existing methods and increases the learning scale of FCM from 40 to 1000 nodes, achieving breakthroughs of multiple orders of magnitude.

This chapter uses the following steps:

1) Typically, the target FCM is set to 20% or 40%, and each non-zero weight is randomly produced in [-1,1]. Note that the absolute value of each non-zero weight and other weights are set to 0;

2) Randomly generate initial state values belonging to [0, 1] and assign them to each node;

3) Use Eq. (2) and Eq. (3) to generate the next state value of each node;

4) Such artificial data contains S response sequences, each with T iterations, then generate response sequences from each initial state vector by implementing step c) until T iterations are reached.

The first metric is Data Error, which the available ones:

$$\text{Data Error} = \frac{1}{NS(T-1)}\sum_{i=1}^{N}\sum_{k=1}^{S}\sum_{t=1}^{T}\left(C_i^{k^*}(t) - C_i^k(t)\right)^2 \quad (8)$$

Ns (Ns=10) that differ from the initial state vectors applied in the learning process.

$$\text{Out\_of\_Sample\_Error} = \frac{1}{NN_s(T-1)}\sum_{k=1}^{N_s}\sum_{t=1}^{T}\sum_{i=1}^{N}\left|C_i^{k^*}(t) - C_i^k(t)\right| \quad (9)$$

Model_Error is to compare the weight of the learned FCM with the weight of the original FCM.

$$\text{Model\_Error} = \frac{1}{N^2}\sum_{i=1}^{N}\sum_{j=1}^{N}\left|w_{ij} - w_{ij}^{'}\right| \quad (10)$$

where, wij' is the weight from node i to node j in the candidate FCM.

There will be no connection between nodes; otherwise, there is a connection. Accordingly, SS_Mean is computed as:

$$\text{SS\_Mean} = \frac{2 \times \text{Specificity} \times \text{Sensitivity}}{\text{Specificity} + \text{Sensitivity}} \quad (11)$$

In

$$\text{Specificity} = \frac{TP}{TP + FN} \quad (12)$$

TP is to assess the classification ability of a classifier quantitatively; Two observers' agreement is measured using Cohen's kappa,

$$\text{kappa} = \frac{p_o - p_e}{1 - p_e} \quad (13)$$

Such observational data hypothesized such observational data to calculate the probability that it is like:

To compare the effects of one:

$$\psi(x) = e^{\left(-\frac{(x-t)^2}{2d^2}\right)} \quad (14)$$

where, d and t denote the parameters of the Gaussian function. In the present experiment, t=3, d=30. A linear function can be defined as follows:

$$\psi(x) = |x| \quad (15)$$

In the paper, Fig. 2 shows the image segmentation performance of an improved fuzzy clustering WFCM algorithm on artificial data generated by Gaussian functions. Fig. 2 shows the performance of using the RCGA-FCM evolutionary algorithm for image segmentation. This includes evaluation indicators such as accuracy, boundary clarity, and noise suppression. This image segmentation process is achieved through an evolutionary algorithm called RCGA-FCM. It uses artificial data generated by Gaussian functions, which simulate pixel intensity or grayscale values in actual images. Allow data points to belong to multiple clusters, each with a membership degree. This method is particularly suitable for image segmentation as it can better handle the boundaries and noise between pixels. RCGA will be computed and formed in the Fig. 2:

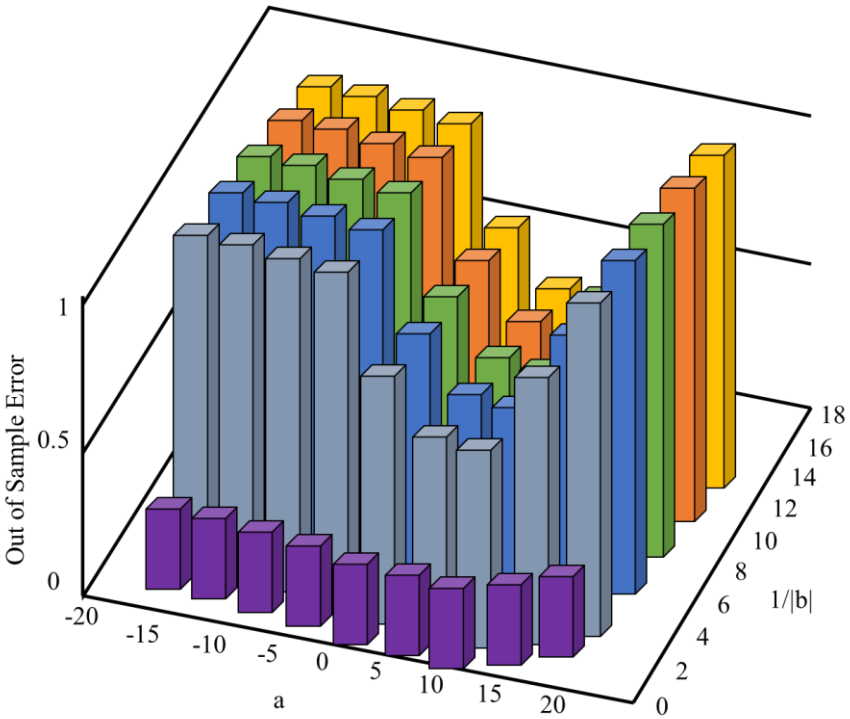

Fig. 2. Performance of WFCM on artificial data generated by Gaussian functions.

IV. Experimental Results and Analysis

A. Investigation and Analysis of the Value Appeal of AI Empowering College Students' Ideological and Political Education

It also become a development trend. In promoting the application of AI, the subjective feelings of college students cannot be ignored. In this regard, questionnaires and other forms should be used to objectively and rationally analyze college students' attitudes, opinions, and value demands on the ideological and political education empowered by AI robots that can imitate human thinking and behavior. Technologies include image recognition, video recognition, semantic understanding, and sentiment analysis. It is a general term for specific technologies but does not regard artificial intelligence as a general ability.

According to the survey, most ones, like problems in understanding knowledge points and insufficient sense of acquisition, exist only when there are difficulties as they want to change. College students anticipate it to be more aligned with their personal experiences than a theory elevated to the point where they feel no real benefit.

When investigating the question "What do you think are the difficulties encountered for theory courses" (see Fig. 3), 732 students chose "difficulty in remembering knowledge points," accounting for 71.07%; 585 students chose the item "difficult to understand," accounting for 56.8% of the respondents; 517 students chose the item "difficult to review," accounting for 50.19% of the respondents; 354 Students. The item "unbalanced course resources" was selected, accounting for 34.37% of the studied population; 350 students chose the item "lack of acquisition," accounting for 33.98% of the population. It can be seen that the difficulty of remembering knowledge points is a common difficulty faced by college students in ideological and political education, regardless of gender, education, and professional background. According to the survey results, fairness in education is the biggest challenge faced by college students, followed by the question of whether they don't feel like they've gained anything. According to the survey, most ones, like problems in understanding knowledge points and insufficient sense of acquisition, exist only when there are difficulties as they want to change. College students expect it to be close to their authentic personal life rather than a high above theory so that they have no real sense of gain.

When asking college students, "Do you think artificial intelligence has brought about a change in ideas?" (see Fig. 4), 676 students chose to diversify teaching methods, accounting for 65.63% of the surveyed; 584 573 students chose personalized teaching content, accounting for 55.63% of the respondents; 541 students chose intelligent resource search, accounting for 55.63% of the respondents 52.52% of the total number of students; 484 students chose the scientific evaluation method, accounting for 46.99% of the surveyed number; 454 students chose the dynamic teaching process, accounting for 44.08% of the surveyed number; 421 students chose teaching The environment is intelligent, accounting for 40.87% of the studied population; 243 students chose to reduce the burden of the classroom, accounting for 23.59% of the surveyed population.

Diversification, precision, and personalization—the goals and outcomes that political education seeks to accomplish—are the most often mentioned keywords when most students talk about the concept change, according to the survey results above. Their workload from school will not decrease with the arrival of artificial intelligence, and issues with assessments, like forgetting knowledge points, will persist.

To what extent the respondents know about artificial intelligence technology and its application, the statistical results in Fig. 5, but know nothing about its application" is the highest, indicating that most students currently cognition of artificial intelligence remains in the booking stage, but there is a lack of understanding of how artificial intelligence is applied; among the teachers, the proportion of "understanding some artificial intelligence technologies and partially understanding their applications" for the courses has a certain degree of mastery from theory to practice, but the degree is not too deep; the proportion of practitioners who "have a deep understanding of artificial intelligence technology, but have a partial understanding of its application" The highest, indicating that the practitioners group has made certain breakthroughs in the cognition and practice.

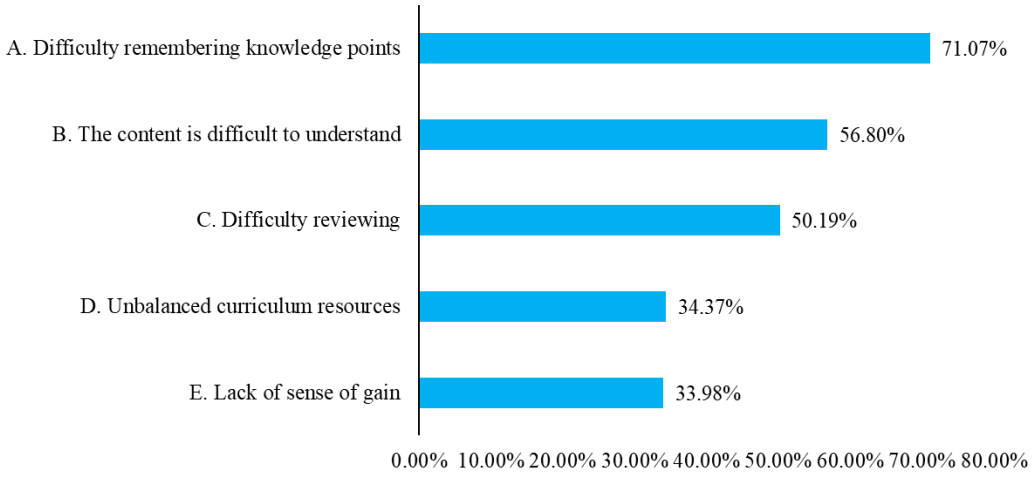

Fig. 3. Difficulties of college students in learning ideological and political theory courses.

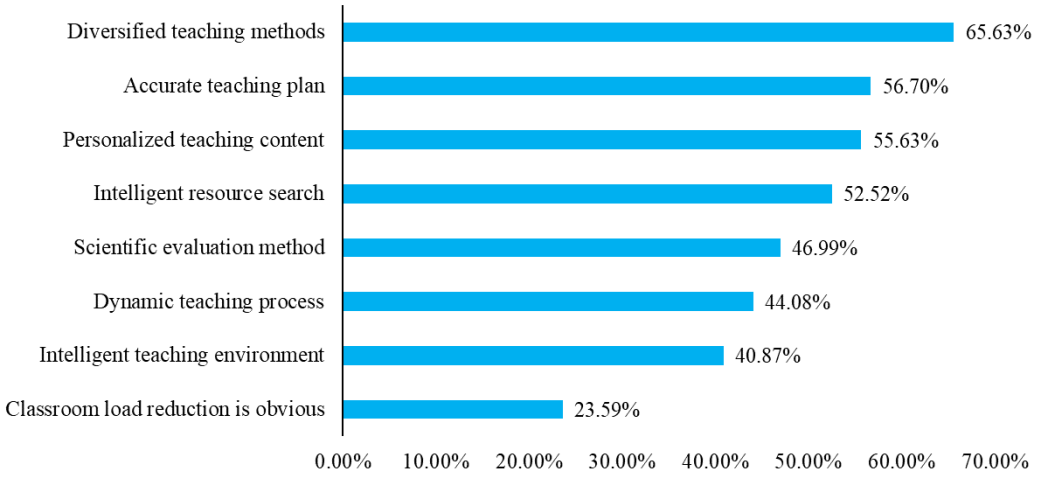

Fig. 4. The concept change brought by artificial intelligence to the ideological and political education of college students.

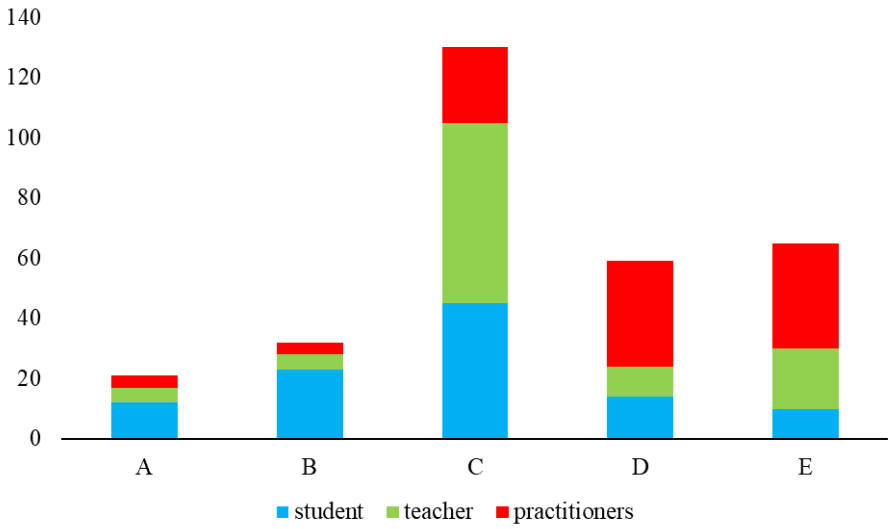

Fig. 5. How much is known about AI technology and its applications.

Regarding which technologies of artificial intelligence are most easily applied to art and design education, the statistical ones in Fig. 6 show that the top three are natural language understanding (AI translation, question answering system, etc.), computer vision (image understanding, 3D vision, dynamic vision, etc.), machine vision, etc.), biometric ones and the proportions are relatively close, all around 30%, indicating that from the perspectives of students, teachers, and practitioners, the current three This AI art and design education. According to the survey, most ones, like problems in understanding knowledge points and insufficient sense of acquisition, exist only when there are difficulties as they want to change. College students expect it to be close to their authentic personal life rather than a theory that is high above so that college students have no real sense of gain.

Regarding the artificial intelligence-related technologies currently used in learning/teaching/work, the statistical results show that computer vision (image understanding, three-dimensional vision, dynamic vision, etc.) The contribution proportion is the highest, indicating that AI technology is used most frequently among practitioners; the second is natural language understanding (AI translation, question-answering system, etc.), of which the proportion of students is the highest, indicating that the student group has the highest contribution to AI. The application of technology is mainly concentrated on natural language understanding; the proportion of teachers' application of the five technologies is relatively balanced. The proportion of practitioners who "have a deep understanding of artificial intelligence technology, but have a partial understanding of its application4.2 Experiment results of complex system modeling.

The results in Fig. 7 show that TLFCM has different functions in the data, and one behaves worse than other models. The one is the best in the data. In the experiment, seven cases in the 17 are better than others.

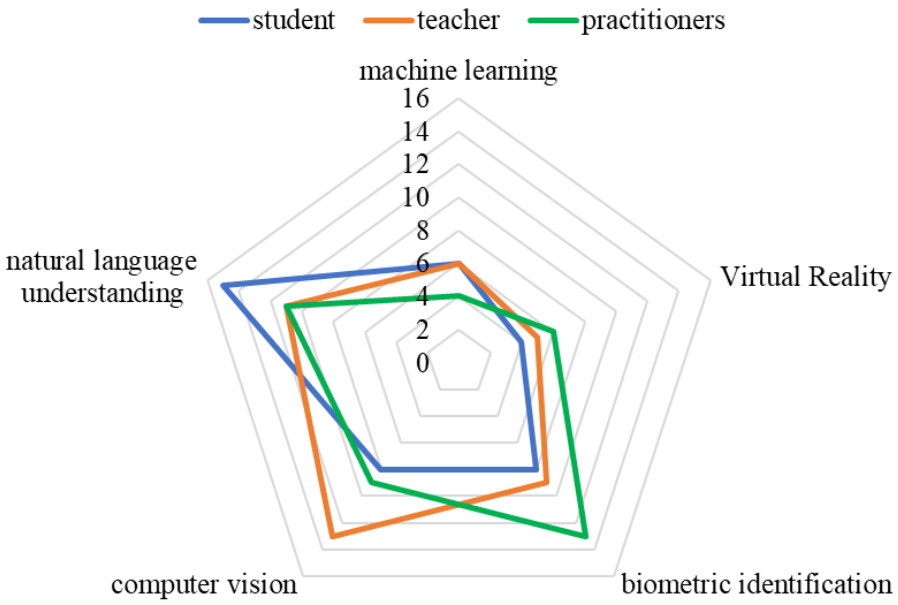

Fig. 6. Technology acceptance radar chart.

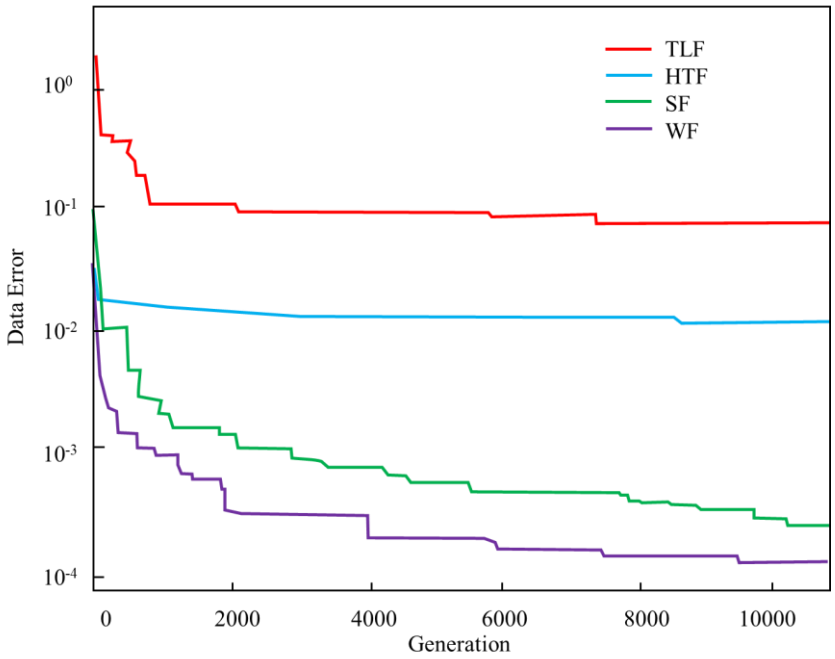

Fig. 7. The relationship between Data_Error and RCGA algebra on different FCM models.

From the experimental results in Fig. 8, as Data_Error increases, the ability of CS-FCM to learn FCM decreases. The change due to lack of information or interference by it and C S-FCM can achieve high accuracy over sparse FCM, which shows that our method is robust to noise in time series. With Data_ With the increase of Error, the dataset used by CS-FCM gradually deviates from the actual situation. This can lead to deviations between the patterns learned by the model and the real-world patterns. During the training process, if Data_ There are many errors, and CS-FCM may fall into a state of overfitting or underfitting. Overfitting means that the model is too complex and has a good fitting effect on the training data, but performs poorly on new data; Underfitting indicates that the model is too simple to capture complex patterns in the data. Generalization ability refers to the model's ability to predict new data. Data_ An increase in Error can lead to a decrease in the generalization ability of CS-FCM, as the knowledge learned during training may not be universally applicable.

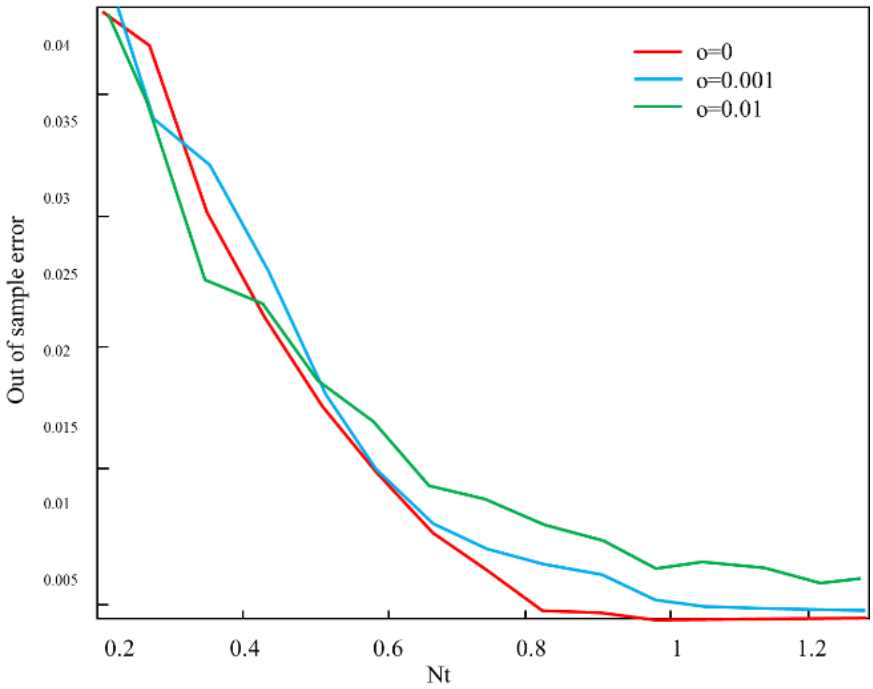

Fig. 8. The impact of time series relative data length Nt on Model_Error.

Better than the other four methods, Fig. 9 demonstrates that the Data_Error of CS-FCM stays zero in various cases. For 11 of the 30 examples, LASSOFCM outperforms CS-FCM. CS-FCM works better than LASSOCM in the remaining cases as well. According to Model_Error, CS-FCM performs better than dMAGA and ACORD in 29 of the 30 cases and DandC RCGA and RCGA in every instance. In 26 out of 30 examples, CS-FCM beats LASSOFCM and falls short four times. The fact that the standard deviation of CS-FCM is consistently lower than that of alternative techniques suggests that CS-FCM is stable. CS-FCM beats dMAGA in all but one of the 100-node cases. When it comes to CS-FCM performance, the scenario with S=5 and T=4 is not as good as the scenario with S=1 and T=20. The CS-FCM Model_Error is maintained at a low level concurrently.

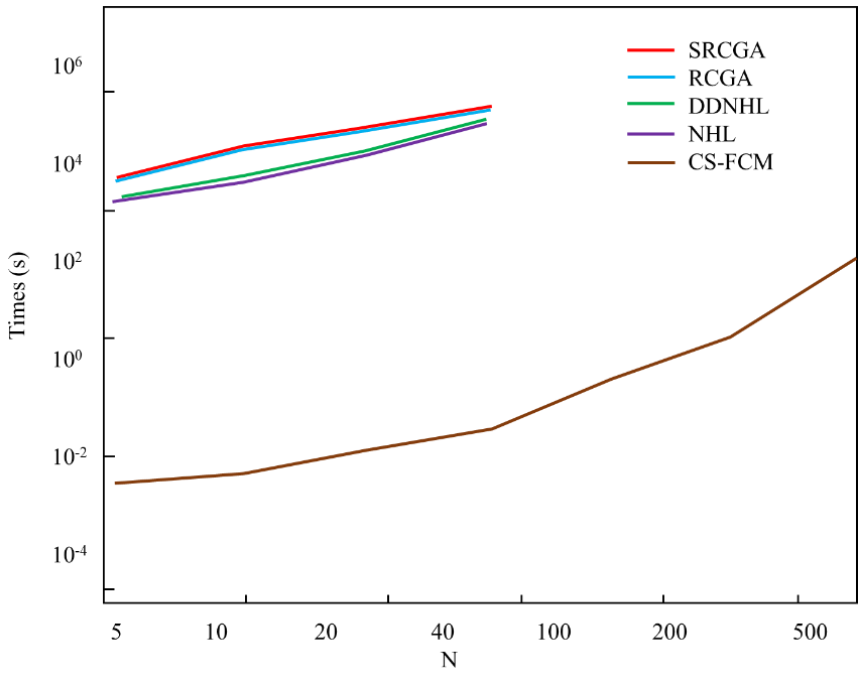

Fig. 9. Comparison of CS-FCM and other algorithms in running time.

It can further speed up CS-FCM. Although our algorithm works well in large-scale fuzzy cognitive graph learning problems, several shortcomings still need to be improved. For example, the algorithm in this chapter does not work well on noisy data. The algorithm in this chapter is worth thinking about. After a series of experimental verifications, the CS-FCM algorithm has shown good performance in processing artificial data generated by Gaussian functions. Compared with traditional FCM algorithms, CS-FCM has significantly improved accuracy, boundary clarity, and noise suppression. In addition, CS-FCM is insensitive to the selection of initial parameters and has strong robustness. However, there are also some potential areas for improvement in the CS-FCM algorithm. For example, how to further improve the real-time performance of algorithms to better apply them to real-time image processing systems; How to better handle more complex image data, such as color images or images with more complex textures.

V. Conclusion

The revolution was initiated by artificial intelligence in one area. The proposal of intelligent education points out the direction for development and AI empowerment, and one should also keep pace with the times and use artificial intelligence to empower college students' ideological and political education. It first takes artificial intelligence as the starting point, new forms, models, and paths. Through the questionnaire survey, the value demands empowered by artificial intelligence can be understood. It is possible by artificial intelligence to clarify such persistence and change empowered by artificial intelligence and finally propose an innovative path. However, there are also many potential risks and practical problems at the value premise, technical limits, and specific operation level, such as privacy protection and ideological security risks, the loss of educational subjectivity, the digitization of educational relations, and the lack of specialized talents. Therefore, it is necessary to look at the technical momentum and potential risks of artificial intelligence dialectically, promote the rationality of educational value, strengthen technical supervision, forge an intelligent education team, reasonably define the integration boundary and application scope of artificial intelligence, and combine the main initiative of human beings with the intelligence of machines. It combines strengths, actively explores the path of coexistence and co-prosperity between education and technology, and consciously constructs an intelligent form of them. To model large-scale complex systems, the graph learning method is proposed. The graph from complex system representation data is an urgent problem. Due to the large search space and slow convergence speed, it will have large-scale fuzzy cognitive graphs. Combined with the sparsity of fuzzy cognitive graph, the algorithm decomposes the learning task of fuzzy cognitive graph. The precise recovery ability of compressive sensing for sparse signals allows the algorithm to learn fuzzy cognitive maps accurately. The algorithm breaks through the shortcomings of existing methods and increases the learning scale of FCM from 40 to 1000 nodes, achieving breakthroughs of multiple orders of magnitude.

However, this article also has some limitations. The study of the value demands of ideological and political education for large-scale fuzzy cognition college students requires processing a large amount of data. This includes student personal information, learning behavior, social networks, and other information. Due to the large amount of data, effective data processing and analysis is a huge challenge. The implementation and maintenance of these algorithms and models require a high level of technical proficiency, as well as a significant amount of computing resources and time.

In the future, ideological and political education will be integrated with disciplines such as psychology, sociology, and computer science to study and understand students' thoughts, behaviors, and values from multiple perspectives. This interdisciplinary research method helps to deeply explore the potential of learning the value demands of ideological and political education for large-scale fuzzy cognitive college students.

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Competing of Interests

The authors declare no competing of interests.

Authorship Contribution Statement

Chao Xu: Writing-Original draft preparation, Conceptualization, Supervision, Project administration.

Lin Wu: Methodology, Software, Validation.

Data Availability

On Request

Declarations

Not applicable

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