

Retraction

Retracted: Design of New Working Environment Based on Artificial Intelligence Algorithm

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This article has been retracted by Hindawi following an investigation undertaken by the publisher [1]. This investigation has uncovered evidence of one or more of the following indicators of systematic manipulation of the publication process:

- (1) Discrepancies in scope
- (2) Discrepancies in the description of the research reported
- (3) Discrepancies between the availability of data and the research described
- (4) Inappropriate citations
- (5) Incoherent, meaningless and/or irrelevant content included in the article
- (6) Manipulated or compromised peer review

The presence of these indicators undermines our confidence in the integrity of the article's content and we cannot, therefore, vouch for its reliability. Please note that this notice is intended solely to alert readers that the content of this article is unreliable. We have not investigated whether authors were aware of or involved in the systematic manipulation of the publication process.

In addition, our investigation has also shown that one or more of the following human-subject reporting requirements has not been met in this article: ethical approval by an Institutional Review Board (IRB) committee or equivalent, patient/participant consent to participate, and/or agreement to publish patient/participant details (where relevant).

Wiley and Hindawi regrets that the usual quality checks did not identify these issues before publication and have since put additional measures in place to safeguard research integrity.

We wish to credit our own Research Integrity and Research Publishing teams and anonymous and named external researchers and research integrity experts for contributing to this investigation.

The corresponding author, as the representative of all authors, has been given the opportunity to register their agreement or disagreement to this retraction. We have kept a record of any response received.

References

- [1] B. Zhou and L. Qu, "Design of New Working Environment Based on Artificial Intelligence Algorithm," *Journal of Sensors*, vol. 2022, Article ID 6130761, 11 pages, 2022.

Research Article

Design of New Working Environment Based on Artificial Intelligence Algorithm

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With the three industrial revolutions sweeping the world, especially since the third industrial revolution, the complexity of human work has greatly increased, and in the new era of technology and information, workers have new standards and new requirements for their work environment, and new form of work environment design has come into being. In this paper, a work environment system is designed by artificial intelligence algorithm to improve the workers' work environment by assessing the good and bad degree of their natural and social work environment, and an intelligent service system is designed by using artificial intelligence algorithm, which can not only analyze and process the work environment assessment results but also execute the subjective and reasonable requirements made by the workers to help the workers maintain a good mood at work and improve their efficiency.

1. Introduction

The work environment, i.e., the environment in which the worker lives, can be subdivided into the social environment and the natural environment, which is necessary for the worker to complete the work efficiently and successfully. Natural environment generally refers to the temperature, climate, humidity, vibration, noise, lighting, odor, and other natural factors of the worker's environment. Social environment mainly refers to social work activities such as workers' communication with people, participation in group activities, and group building in the work process [1]. Both the natural and social environments can have a great impact on human work status and work efficiency. If the work environment is not good, the worker's body and mind will cause great harm and will lead to some unsafe events, not only affect the work process; if the work environment is relatively bad, it will cause serious personal injury. Thus, to improve the efficiency and protect the physical and mental health of workers, it is necessary to improve the working environment of workers, to create a comfortable natural environment and a comfortable social environment, and to design and

improve both working environments with the times, in order to protect the health and safety of workers [2].

The continuous development of artificial intelligence and algorithms has made the human living environment gradually intelligent [3]. In today's data era, the increasing development of big data and the continuous upgrading of data algorithms give a solid foundation and fertile ground for algorithms to move from simple algorithms to intelligent algorithms [4]. Artificial intelligence algorithms provide tremendous support and backing for humans to predict results, build models, process data, etc. The most core element in the development of artificial intelligence is the intelligence of algorithms [5]. Intelligent algorithms act on all aspects of human life through big data, and as the amount of data increases, the algorithms are upgraded, and big data is applied to life day by day, greatly advancing artificial intelligence that meets the application requirements of the times. The main application of artificial intelligence algorithms is to calculate the correlation of big data and apply the data to the practical needs of humans and daily life, developing the understanding of big data in the process. However, for humans, AI algorithms have become increasingly involved

and are slowly becoming part of the choice and guidance of the direction of human development. In terms of the nature of big data and AI algorithms, AI algorithms determine the way in which data is analyzed and interpreted [6].

The use of AI algorithms for the design of new forms of work environments is a very useful approach. The use of AI algorithms for the analysis of work environments that affect human work can be used to design new forms of work environments that better meet the needs of human work and increase efficiency by examining the main factors of big data. In an environment where various industries are blossoming and the types and requirements of various jobs are increasing, workers' requirements and standards for their work environments are also showing a gradual increase. The complexity of the natural and social environment has also increased [7]. The behavior of workers is the main reason that affects the efficiency of work and their own physical and mental health, while the work environment is the direct reason that affects the behavior of workers [8]. Therefore, it is of great significance to provide and guarantee a good working environment for workers and to achieve efficient control of their working environment from the root by designing and improving it to improve their safety and health as well as their work efficiency [9].

The significance of this paper is to clearly describe the specific design of the work environment that affects the interaction of workers' behavior and safety, to improve the current research gap, and to improve the understanding and control of the work environment design practitioners on their work and work content. In addition, this paper seeks to combine artificial intelligence algorithms, through continuous experimentation and iteration, to eventually derive the focus of work environment design and distill it into a specific design framework. The specific framework and the focus of work environment design will be used to guide the practice of work environment design, to ensure the effective implementation of work environment design and to further extend the experience gained to guide real-life production practices. The research methodology used in this paper can be applied not only to work environment design but also can be easily transferred to other fields and industries to provide ideas for subsequent research on work environment design in various fields [10].

In this paper, we analyze big data through artificial intelligence algorithms and design a work environment system to improve workers' work environment by assessing how good or bad their natural and social work environments are and design an intelligent service system using artificial intelligence algorithms that can not only analyze and process the work environment assessment results but also execute the subjective and reasonable requests provided by workers to help workers maintain a good mood at work and improve the efficiency of workers [11].

2. Research Background

The development of artificial intelligence has had a profound impact on society, human development, and progress. As an important part of artificial intelligence technology,

intelligent algorithms play an important role in the process of information transmission [12]. The research on artificial intelligence can be traced back to the relevant theories of modern neuroscience: there are many neocortex in the human brain, which can be used as the carrier of learning knowledge and producing memory. Cognitive neuroscience grew out of the study of the neocortex in the human brain. This is the study of the human nerves and mind. It focuses on the neurons in the cerebral cortex. With the deepening of the research of this science and gradually applying to the development of algorithms, artificial intelligence algorithms have been constantly developed and improved [13].

In the 1950s, the Canadian psychologist works published about behavioral science and neuroscience, this book gives a new explanation on learning and memory, the memory mechanism of nerve in this innovative book proposes a "synaptic plasticity of neural mechanisms," and the neural mechanism means the neurons that fire at the same time are connected to each other, also known as Hubb's law [14].

At Dartmouth in 1956, the development of artificial intelligence was given direction and goals. Two years later, an American scholar put forward a kind of very practical-perceptron network model, it is a kind of single neural network model of variable parameters, and the model through the algorithm describes the use of human brain learning process makes the machine through the data knowledge learning; it is the foundation of machine learning and laid the core framework for machine learning. Since then, people's research on theories related to cognitive neuroscience has developed rapidly. Especially after the 1990s, artificial intelligence technology has developed more rapidly and has been closely linked with various disciplines [15].

Since the beginning of the 21st century, Internet technology has been developing rapidly, computer technology has been improving continuously, and the proportion of personal computers has also been rising. The computing power and data integration ability of computers have been enhanced [16]. Researchers have proposed deep learning algorithms based on big data. At present, deep learning has been applied to speech recognition, image analysis, and other fields in a wide range and deep dimension and has achieved very obvious results. Nowadays, artificial intelligence technology is shining in all fields [17]. For example, artificial intelligence and network can maintain the network and provide personalized service needs according to the characteristics of each network user. Another example is artificial intelligence and medicine, which can summarize and process patients' past medical records and reports. After big data analysis, it can put forward auxiliary treatment measures or disease prediction for patients, with high accuracy. In today's era, the national economy is the lifeblood of any country [18]. In the economic and financial field, artificial intelligence will analyze the needs of customers, customize personalized financial plans according to the requirements, predict the trend of stock funds, and avoid risks. It can be said that the development of artificial intelligence is remarkable; now it has been widely used in smart phones, tablets, computers, attendance systems, and other aspects.

There are three main areas of research in artificial intelligence: natural language processing, computer vision, and deep learning [19]. The steps of natural language processing simply have two steps; one is natural language understanding, but natural language generation. Natural language processing for human and machine is introduced, its purpose is to realize the communication between people and machine, it is used by human natural language input, it may be not accurate enough into a computer but can accurately identify and determine the internal language; all in all, natural language processing is to get the natural language to realize unambiguous, universal high quality computer language transformation. Computer vision is to let the machine instead of the biological eyes “see the world,” using the camera record, and then computer analysis, so as to track and identify the observed target, so that you can get the needed information from pictures, videos, and other multidimensional perspective [20]. With the continuous development of computer technology in artificial intelligence algorithm, computer vision technology has been able to deal with problems including image recognition and image processing. This technology has been applied to face recognition, fingerprint recognition, and many other fields to identify and authenticate human beings. Artificial intelligence algorithms are a broad umbrella term that can be subdivided into many subcategories, including machine learning, representative learning, and deep learning. Among them, the deep learning algorithm is to use the computer to establish a network for information transmission, similar to the neocortex of neurons in the brain, so that the computer can acquire knowledge and skills and continuously learn and organize, so as to improve its own performance.

For artificial intelligence system, it should have the characteristics of cognitive ability such as learning and reasoning, which requires the system to have the support of hardware and software at the same time, that is, computer, recognizer, various algorithms, and so on. In these modules, algorithm is the most important and is the most critical module to achieve intelligence. Artificial intelligence and algorithms continue to integrate into and adapt to the needs of daily life. With continuous evolution, iteration, and development, human beings can more easily understand and transform the world. At the same time, artificial intelligence also makes the world closely linked together, and artificial intelligence will be more widely used in all aspects of human life in the future.

The discussion and research on artificial intelligence technology is the most interdisciplinary and broadest research at present. The combination of artificial intelligence and traditional industries has also created new opportunities for many traditional industries. With the development of science and technology, the continuous improvement of artificial intelligence, and the continuous application of artificial intelligence to various fields, most countries around the world have made the development of artificial intelligence a key development object, and now various fields have more or less changed under the progress of artificial intelligence, such as the way of work and industrial structure, which has a significant impact on the development of human soci-

ety. In the future, AI technology will be integrated and reshaped into various industries as a basic need, and the development of AI technology will be faster and faster. As long as all industries can clearly develop their goals, find their future development direction, rationally combine with AI, and reasonably use the convenience brought by the development of technology; then in the future, AI will definitely bring greater convenience and development to human society.

3. Materials and Methods

3.1. The Overall Framework of Artificial Intelligence Algorithm. Intelligent algorithms are generally designed and used based on two basic motives: one is to purposefully provide information that the user is expected to receive; the other is to provide information that the user himself needs. Artificial intelligence is for humans, so human needs must be taken into account, which places higher development requirements on AI to incorporate more algorithms and use more data collection and analysis methods. After collecting data, the AI algorithm can perform data analysis, design subsequent execution steps, and then design subsequent algorithms for different steps; by analyzing the collected data, it is possible to get the ideal environmental needs of workers as much as possible and to evaluate the working environment of workers, so as to provide personalized work demand configuration; managers can, based on the data, use the data to make more reasonable work arrangements for workers.

In order to analyze the strengths and weaknesses of the current worker environment and to provide intelligent services based on worker needs, we first need to build a software work environment, i.e., a system that can monitor and evaluate. In the Python language environment, the data acquisition system, image and speech recognition system, and artificial intelligence algorithms required for the system can be implemented.

The software system mainly consists of three main systems. The system's operating environment design system module is mainly responsible for the collection, setup, and organization of various data, in addition to the supervision and inspection of the work of other system modules. The work environment assessment system is mainly divided into natural environment assessment and social environment assessment. The natural environment assessment system mainly collects the data of temperature, humidity, and noise of the workers' working environment and then evaluates them; the social environment assessment system mainly evaluates the workers' status in the work, work efficiency, and the behaviors generated in the work. The intelligent service system is to provide workers with personalized configurations when they need services, such as whole hour chime, off duty reminder, break prompt, and take-out order. The overall model of the system is shown in Figure 1.

First of all, there is the operation environment design system, which is an important part to ensure the normal operation of the whole assessment system, and it is mainly responsible for the collection, setting, and finishing of

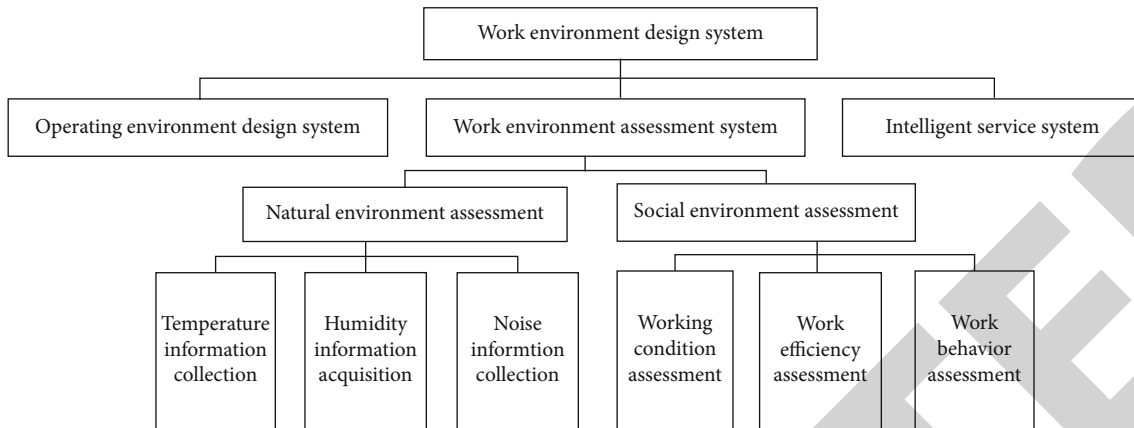


FIGURE 1: Overall model of work environment assessment system.

various data. This operation environment design system can be simply divided into three aspects: system environment parameters, work environment assessment parameters, and data management settings. System environment parameters include commuting time, worker list, and basic office environment structure. Work environment evaluation parameters include temperature collection system, humidity collection system, noise collection system, workers' work content, and the number of times to use Internet applications collection. The data management setup is to organize and classify all the data needed for the operation of the whole system and to coordinate and regularly optimize all the algorithms involved in the operation of the system.

The most important part of the whole system is the work environment assessment system.

Temperature information is collected through temperature sensors, transmitted to the computer, and analyzed by artificial intelligence algorithms. A good working environment for workers needs to maintain a suitable temperature, and because the temperature is too low or too high, it will have a negative impact. When the working environment temperature is too high, the body will keep sweating, blood output will increase, pulse rate accelerates, and it is easy to feel dry mouth, but it also affects the attention, more likely to affect the human memory and thinking, in the psychological irritability. In the low-temperature environment, the body surface temperature drops, pores and blood vessels contract, people will become pale, pulse and breathing weaken, and blood pressure drops; low-temperature environment will also affect the dexterity of the hands and hand coordination; in addition, the low-temperature environment will lead to weakened nerve conduction, psychological tension, and anxiety.

Humidity information collection needs to be passed through the humidity sensor, transmitted to the computer, and analyzed by artificial intelligence algorithms. The humidity of the working environment is the degree of dryness and humidity of the air in the working environment, which is generally described by relative humidity, which is the ratio of actual water pressure to saturated water pressure. If the humidity in the air is too high and too low, it will have a bad impact, and for too high humidity, the impact on people is a

little more. For example, if the worker is in an environment with a low temperature, but the humidity is high, moisture will further absorb heat in the body, people will produce a strong feeling of cold, cold hands and feet, and in the long run, it also triggers arthritis easily; If workers are in an environment with high temperature and high humidity, they will feel sticky on their bodies; this is because sweat cannot be discharged properly, and in the long run, people's throat and breathing will also feel very uncomfortable.

The noise information is collected through the noise monitor, and the results are transmitted to the computer and analyzed by artificial intelligence algorithm. Noise in the work environment has a negative impact on people both physically and psychologically. Noise can cause an accelerated pulse rate and increased blood pressure, disrupting a person's normal metabolism. If the worker is in a work environment that is often disturbed by very strong noise, the person's vision will also have a bad effect, which sounds unbelievable, but in fact, noise can make people's eyesight diminish. Not only that, but noise can also do great harm to the worker's stomach and intestines, which may cause gastroenteritis, stomach ulcers, and other very serious gastrointestinal diseases, causing great harm to the human body. In short, noise has a very negative impact on workers.

These natural environmental factors are synthesized through monitoring and analysis and algorithms and finally will be displayed to the workers, who can make positive adjustments to improve their natural working environment according to the current working environment they are in.

The work status assessment is done by evaluating the worker's work process in terms of arrival time, discipline at work, work motivation, emotional stability at work, work skills and learning progressiveness, and drawing the corresponding conclusions. If the worker's working condition is not good, the system will give corresponding prompts and make corresponding adjustment measures according to the worker's own condition and make some comments; if the worker's working condition meets the work requirements and is in the ideal condition, he can continue to work and the system will continue to evaluate.

Work efficiency assessment, as the name implies, is to analyze the efficiency of the worker's work. During working

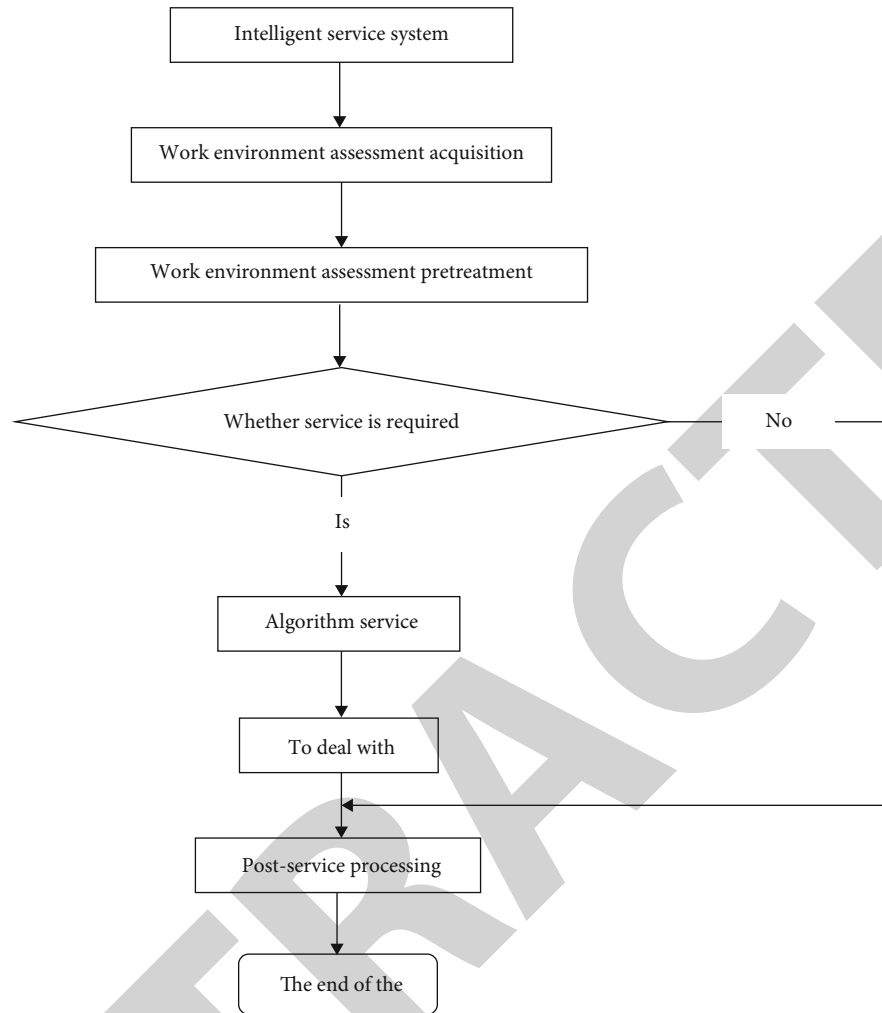


FIGURE 2: Intelligent service system workflow diagram.

hours, the worker's work efficiency is evaluated by recording the length of various applications of the worker using the Internet, comparing the time needed to complete a certain work with the time actually completed, and measuring the degree of work completion and other aspects. If the worker's normal work efficiency meets the requirements, he or she is given a confirmation; if the worker's work efficiency is too low, or if he or she often does something else during working hours, he or she is given a reminder or warning to try to ensure that the worker makes full use of working hours and completes his or her work on time.

Work behavior refers to various work-related behaviors at work, such as mutual communication among colleagues, attending meetings, completing work independently, inspecting work, and traveling. These are normal behavioral patterns at work. Evaluating these patterns is helpful for workers to summarize and reflect on their work. By evaluating and analyzing work behaviors, the system can also predict the work patterns of the worker so that the worker can be reminded to do the corresponding work at the appropriate time.

Social environment assessment is an effective way to improve the working environment and increase the efficiency of workers.

3.2. Intelligent Service System Working Mode Design. The workflow diagram of the intelligent service system is shown in Figure 2.

Based on this analysis, the specific requirements of the system are as follows.

First, there is the real-time work environment assessment and processing requirement. The system is an intelligent service system based on deep learning algorithm, so it is indispensable to obtain real-time work environment assessment, and at the same time, the active instruction of workers is also the data source for the work of intelligent service system.

Second, it is the integration of deep learning algorithms and inference calculation demand. There are many models and frameworks of deep learning in the current industry, so how to unify these algorithmic models and be able to meet the real-time requirements of real-life scenarios is a crucial issue. At the same time, future iterations of algorithmic models with excellent performance and good functionality will be available, and the system needs to update and extend these algorithms in a timely manner.

In addition to this, there are multiple data, especially feature vectors, storage, and query requirements. The system

gets a large amount of data after the algorithms handle the work environment assessment or the subjective requirements of workers, and only by storing these data can we get accurate results in the subsequent analysis.

Not only that, the distributed deployment and expansion of the system are also important. Standing in the development perspective, the future belongs to big data; for the single machine, the system can carry a limited amount of data, and it is one of the factors that hinder the development of the system, and the distributed deployment of the system can solve this problem; once the system is not able to meet the current data processing needs, we only need to increase the server to meet the demand.

Finally, it is the need for an interface that is easy for workers to operate. The interface of the system is a layer of direct contact for workers, who can exercise subjective control over the intelligent service system through the interface or follow the recommendations provided on the interface based on the results of the work environment assessment.

3.3. Design of Artificial Intelligence Algorithms. The creation of the different work environment assessment models designed in this paper needs to be implemented using a very common classification algorithm in artificial intelligence algorithms, which is called the plain Bayesian classification algorithm. This algorithm focuses on classifying different feature conditions in the collected data by the classical plain Bayesian algorithm so that their joint probability distribution can be calculated. Using the obtained joint probability distributions, it is possible to calculate their posterior probabilities, which for this paper are the different environmental assessment systems. This classification algorithm calculates the posterior probabilities from the distribution probabilities, so it is possible to find very accurate environmental assessment system; the various data collected through different sensors and identifiers should belong to and thus move to the next level of algorithmic evaluation. The main process of the plain Bayesian classification algorithm is as follows:

Assume that the classification model samples are as follows: $(x_1(1), x_2(1), x_3(1), \dots, x_n(1), y_1)$, $(x_1(2), x_2(2), x_3(2), \dots, x_n(2), y_2)$, \dots , $(x_1(m), x_2(m), x_3(m), \dots, x_n(m), y_m)$, i.e., there are m samples, each sample has n features, and the feature output has K categories, defined as C_1, C_2, \dots, C_k .

The prior probability distribution and conditional probability are used to obtain the joint distribution as follows.

$$\begin{aligned} P(X, Y) &= P(X, Y = C_k)P(Y = C_k)P(X = x|Y = C_k) \\ &= P(Y = C_k)P(X_1 = x_1, X_2 = x_2, \dots, X_n = x_n|Y = C_k), \end{aligned} \quad (1)$$

where equation (1) is calculated, and the plain Bayesian model assumes that the n dimensions of X are independent of each other, so that it can be derived:

$$\begin{aligned} P(X_1 = x_1, X_2 = x_2, \dots, X_n = x_n|Y = C_k) \\ &= P(X_1 = x_1|Y = C_k)P(X_2 = x_2|Y = C_k) \\ &\quad \dots P(X_n = x_n|Y = C_k). \end{aligned} \quad (2)$$

Calculate all the K conditional probabilities $P(Y = C_k|X = X^{(\text{test})})$, and then, find the category corresponding to the largest conditional probability. The predicted category C_{result} is the category that maximizes the calculation result, and the mathematical expression is as follows:

$$\begin{aligned} C_{\text{result}} &= \underbrace{\operatorname{argmax}}_{C_k} P(Y = C_k|X = X^{(\text{test})}) \\ &= \underbrace{\operatorname{argmax}}_{C_k} P(X = X^{(\text{test})}|Y = C_k) \cdot \frac{P(Y = C_k)}{P(X = X^{(\text{test})})}. \end{aligned} \quad (3)$$

$P(Y = C_k|X = X^{(\text{test})})$, and the denominator of equation (3) is the same as $P(X = X^{(\text{test})})$; therefore, the prediction formula can be simplified as follows:

$$C_{\text{result}} = \underbrace{\operatorname{argmax}}_{C_k} P(X = X^{(\text{test})}|Y = C_k)P(Y = C_k). \quad (4)$$

Using the independence assumption of the plain Bayesian, the plain Bayesian inference formula in the usual sense can be obtained:

$$C_{\text{result}} = \underbrace{\operatorname{argmax}}_{C_k} P(Y = C_k) \prod_{j=1}^n P(X = X_j^{(\text{test})}|Y = C_k). \quad (5)$$

Secondly, the evaluation algorithm used in this paper is a multilayer evaluation method for work environment systems based on multiple limit learning machines. In the first layer of the evaluation model, the evaluation results are first given quickly for some operating points (OPs) that are far from the stability boundary of the system. In this layer, only a small number of ELM features to be selected is used because the OPs are easy to discriminate. It is also easy for the computer to process the data, which ensures a certain evaluation speed. For OPs close to the stability boundary, the first layer cannot give a confident evaluation result and will be sent to the second layer. In the second layer, more features and ELMs are added to ensure the evaluation accuracy. The evaluation process is similar to the first layer. Samples that still cannot give a confidence assessment result will be sent to the third layer and so on. If an accurate conclusion still cannot be given in the final layer, it means that the OP is extremely close to the stability boundary of the system, at the edge of stability and instability, and its state is difficult to estimate. The evaluation model performs the first layer of transient stability assessment on the samples in the dataset: first, different ELMs are trained using the core set of features extracted based on the MRMR algorithm, and then, multiple ELMs are used to evaluate the previous samples, and some of the samples will obtain stable or unstable confidence assessment results, while the samples that cannot obtain confidence assessment results will be sent to the

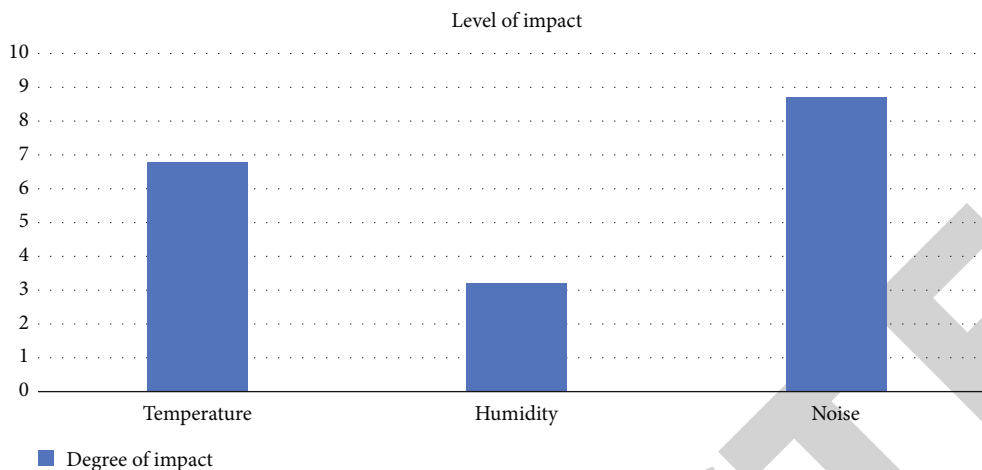


FIGURE 3: The degree of influence of natural environmental factors on workers’ work efficiency and physical and mental health.

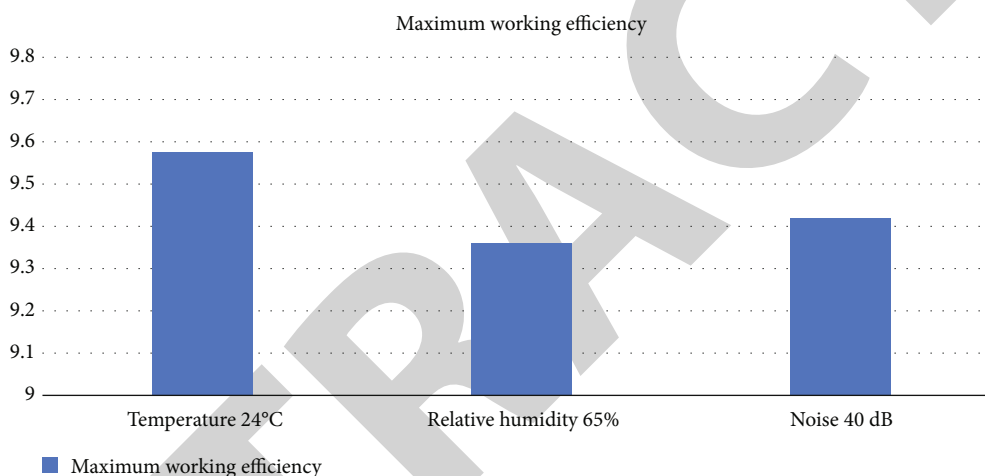


FIGURE 4: Graph of temperature, humidity, and noise environment results for the highest work efficiency (maximum value of 10).

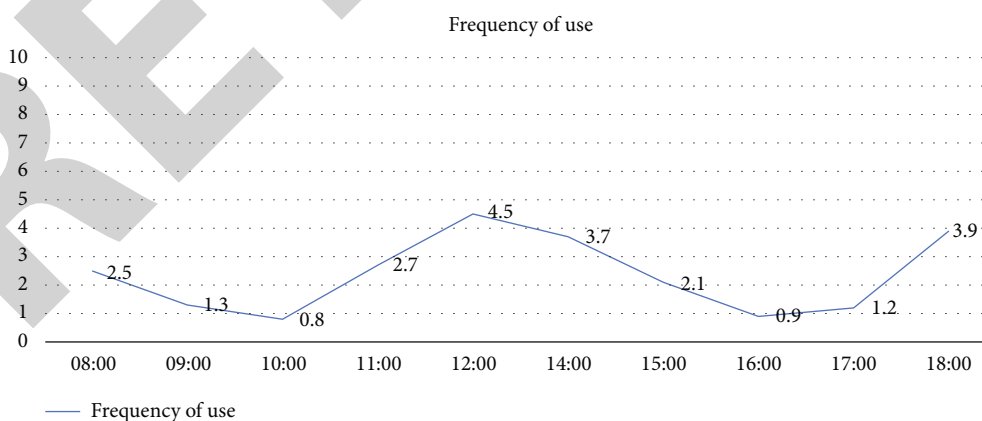


FIGURE 5: Frequency of using applications other than work in different time periods.

second layer; in the second layer, there are more core features and the number of ELMs; repeat the process in the first layer, and send some samples that cannot obtain confidence assessment results to the next layer, until all samples are evaluated.

4. Results and Discussion

The survey showed that the three aspects of natural environmental factors that affect workers’ work environment, namely, temperature, humidity, and noise, have the degree

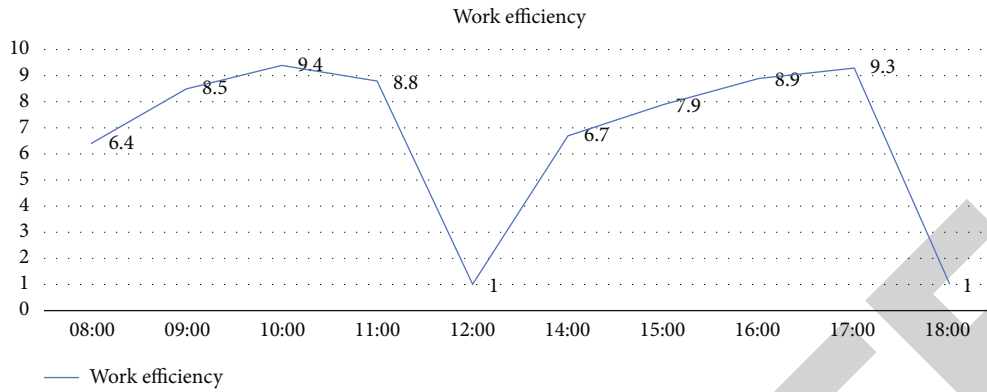


FIGURE 6: Work efficiency of workers in different time periods during work hours.

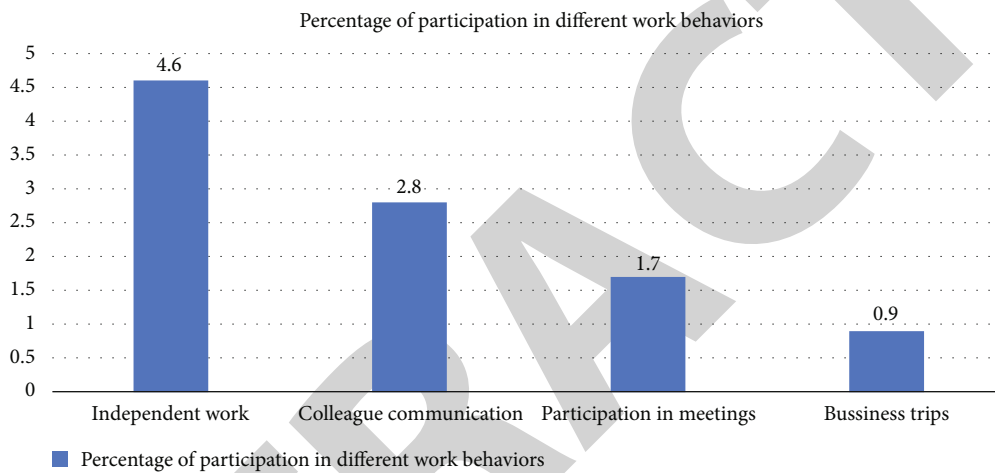


FIGURE 7: Proportion of workers engaged in other work behaviors in the course of work.

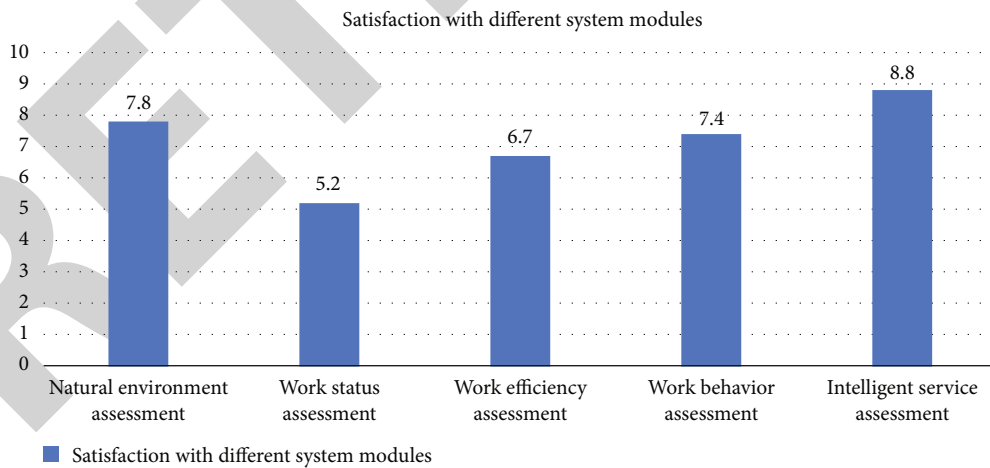


FIGURE 8: Satisfaction survey of each service of work environment design system.

of influence on workers' work efficiency as well as their physical and mental health as shown in Figure 3.

After the artificial intelligence algorithm evaluated and analyzed the natural working environment, the result graph shown in Figure 4 was obtained. Figure 4 shows the results of temperature, humidity, and noise environments with the

highest work efficiency during the most efficient working hours, i.e., around 10:00 am.

According to Figure 4, we can get the following conclusions: for temperature between 20 degrees Celsius and 30 degrees Celsius, workers generally have higher work efficiency, as well as a more stable work mood compared to

other temperatures; humidity does not have a great degree of influence on workers, but if the humidity is too low, the human body will become dry and uncomfortable, which will damage the body, and too high humidity will produce a stifling feeling, which will reduce work efficiency. Relative humidity between 60% and 70% of the highest work efficiency: noise on the work efficiency of workers will have a greater impact; in addition to the abovementioned damage to the human body, too much noise will affect the ability of workers to think and work faster, interfere with the workers' work ideas, and interrupt the workers' work process; the workers have a great impact on the results of their work; working in a quiet, harmonious external environment, that is, the noise is less than 50 decibels, will have a more positive impact on workers' work efficiency and physical and mental health.

After the analysis of the AI algorithm, the results of the social environment assessment during the working hours are shown in Figures 5–7.

Among them, Figure 5 shows the frequency of using applications other than work during different time periods studied by the AI algorithm analysis, Figure 6 shows the work efficiency of workers in different time periods during work hours, and Figure 7 shows the proportion of workers involved in other work behaviors during the work process.

According to the survey, the most frequently used application outside of work is WeChat, followed by Jitterbug, and the frequency of microblogging is also very high among young workers. From Figure 7, we can see that workers are still working independently most of the time, but of course, they also need to communicate and discuss with colleagues, complete collaborative projects, attend meetings some of the time, and travel to perform tasks some of the time.

After the statistics of workers' working environment, working habits, and daily working style, based on these evaluation results, the intelligent service system can provide corresponding services for workers to improve their working environment, such as reminding workers to hydrate on time, to take a break from using computer too much, to set up green plants around the desk to purify the air, etc. According to workers' working habits, workers can be reminded to attend regular meetings, receive emails, participate in discussions, etc. In addition, the intelligent service system can also help workers order take-out, play music to soothe the body and mind, and remind workers to exercise. As shown in Figure 8, the satisfaction survey of workers with the services of the work environment design system is shown.

From the above figure, we can see that the workers are satisfied with the natural environment assessment and intelligent service system, but they are not very satisfied with the work status assessment and efficiency assessment. Some workers think that the work status assessment is not accurate enough, and the assessment is only one-sided by the length of time of using other applications and should be improved. Most of the workers are satisfied with the intelligent service system because it improves the efficiency of workers to a certain extent and helps them maintain a healthy body after work.

5. Conclusion

5.1. Summary. This paper is a new form of work environment designed by artificial intelligence algorithm, which reads the environmental factors of workers' work through sensors and uses big data to analyze and study various behaviors of workers at work, so as to evaluate the natural and social environment of workers' work and achieve the goals of supervising workers' work, improving workers' work environment, keeping workers in a better working mood, and improving workers' work efficiency. The purpose is to supervise workers, improve their working environment, keep them in a better mood, and improve their efficiency. The main work carried out is shown below.

- (1) The basic types of work environments and their effects on workers are introduced
- (2) The concept of artificial intelligence algorithm is introduced, and the history of the development of artificial intelligence algorithm is introduced through literature research and the importance of artificial intelligence algorithm to the present society
- (3) The basic framework of the new form of work environment setting system is proposed based on AI algorithms, and the functions and tasks of each framework are outlined
- (4) The artificial intelligence algorithm is used to evaluate the work environment of workers, and the intelligent service system is used to serve workers and help them face their work in a better state and mood and improve their work efficiency
- (5) A survey was conducted on the satisfaction of workers using the work environment design system to collect opinions for further improvement in the future

5.2. Outlook. Since the emergence of artificial intelligence technology, more and more terminal devices have appeared in people's daily life. Artificial intelligence is increasingly penetrating into all corners of human life and social development, and this influence is increasing, and human productive life becomes more convenient because of artificial intelligence. On this basis, the deeper development of artificial intelligence will be able to create an artificial intelligence cyberspace based on digitalization, intelligence, and virtualization with the help of artificial intelligence technology to expand and enrich human production relations and life content.

With the continuous development of science and technology, the work content of workers is also constantly innovating and optimizing, which puts forward higher requirements for workers while also providing them with a better working environment, and a good working environment can stimulate better creativity. The new form of work environment design proposed in this paper is the use of artificial intelligence algorithms to build a better atmosphere for workers, and I believe that with the progress and optimization of

artificial intelligence algorithms, a more humane work environment will be created in the future.

The new form of work environment design proposed in this paper is the use of artificial intelligence algorithms to build a better atmosphere for workers, and I believe that with the progress and optimization of artificial intelligence algorithms, a more humane work environment will be created in the future. There are still some shortcomings in the new form of work environment designed by using AI algorithms proposed in this paper that can be improved.

First, the consideration of this paper is not comprehensive enough, there are many other aspects of the work environment that affect the work of workers, and different types of workers work in different environments; this paper only provides a work environment system for the office type of workers, not very suitable for workers who work outdoors.

Secondly, the system designed by artificial intelligence algorithm in this paper is the result obtained through big data analysis, which may not be completely accurate, and the satisfaction of the designed social environment assessment system is not high enough, and further optimization is needed.

In the long history of human development, people have continued to pursue their intelligence, creativity, and cognitive ability in depth, contributing to the development of artificial intelligence today. In today's society, AI has the great significance of fundamentally advancing the civilization of human society. The future path of AI, though obstructed and long, is bound to have exciting results.

Data Availability

The dataset is available upon request.

Conflicts of Interest

The authors declare no conflicts of interest.

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