Hindawi
Mobile Information Systems
Volume 2023, Article ID 9797180, 1 page
https://doi.org/10.1155/2023/9797180

Retraction

Retracted: Research on the Construction of Urban Leisure Physical Culture Healthy Big Data Service Platform Based on In-Depth Learning

Mobile Information Systems

Received 17 October 2023; Accepted 17 October 2023; Published 18 October 2023

This article has been retracted by Hindawi following an investigation undertaken by the publisher [1].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) Peer-review manipulation

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] J. Yuan and J. Chen, "Research on the Construction of Urban Leisure Physical Culture Healthy Big Data Service Platform Based on In-Depth Learning," *Mobile Information Systems*, vol. 2022, Article ID 4583471, 12 pages, 2022.

Hindawi
Mobile Information Systems
Volume 2022, Article ID 4583471, 12 pages
https://doi.org/10.1155/2022/4583471

Research Article

Research on the Construction of Urban Leisure Physical Culture Healthy Big Data Service Platform Based on In-Depth Learning

Jifang Yuan and Jianguo Chen

Physical Education Department, Anhui University of Finance and Economics, Bengbu 233030, Anhui, China

Correspondence should be addressed to Jianguo Chen; 120081189@aufe.edu.cn

Received 21 June 2022; Revised 18 July 2022; Accepted 25 August 2022; Published 13 September 2022

Academic Editor: Praveen Kumar Reddy Maddikunta

The national fitness service system must focus on meeting the sports needs of residents, innovate the construction mode of urban leisure sports big data service platform, and promote the construction of urban leisure sports health big data service platform. The healthy development of urban leisure sports should also adhere to the principles of demand orientation and problem awareness. Big data is an industry with urban leisure and sports health as its core data. It is a production process that continues to cycle in the life cycle of big data. Therefore, this paper uses in-depth learning to study the construction of big data service platform for urban leisure sports health. The in-depth learning improvement project is an expert team organized by the urban leisure sports health basic textbook development center of the Ministry of education. The data revolution driven by deep learning examined the value of data, conquered the data ocean, and created a new era of personalized medicine in the fields of urban leisure, sports, and health. On the basis of in-depth learning, this paper constructs a big data service platform for urban leisure sports health. On the one hand, the establishment of this platform will help to speed up the construction process of sports service informatization and the reform of various fields of sports, on the other hand, it will help to promote the improvement of the physical quality of the whole people.

1. Introduction

Urban leisure physical culture healthy is one of the important components of Chinese health. At the same time, the implementation of urban leisure physical culture healthy is also an important way to promote the health of the whole people [1]. The healthy development of urban leisure sports should also adhere to the principle of demand orientation and problem awareness first. The national fitness service system must take continuously meet the sports needs of residents as the primary task and innovate the way of urban leisure sports mega data service platform to improve the construction of urban leisure physical culture healthy mega data service platform. The mega data era is having an impact on the healthy growth of urban leisure sports, making it a news source. While selecting the least features, the learned features can represent the characteristics of the original data to the maximum extent. Urban leisure physical culture healthy is a basic project to realize the fundamental task of educating people and improving their comprehensive quality. At present, there is an urgent need for a mega data service platform to adapt to the healthy development of urban leisure sports and to address a knowledge gap in the building of urban leisure physical culture [2, 3]. The basis of the big data sector is urban leisure, sports, and health data. It is a circular production process around the life cycle of big data. At the same time, it is also a highly complex industry generated by the division of labor and coordination of various industries. It has been a very popular term in recent years. On the one hand, the creation of this platform will aid in the speeding up of the information construction process for urban leisure sports and health services, as well as the reform of various fields of urban leisure sports and health; on the other hand, it will aid in improving the physical quality of the general public and, ultimately, laying a solid foundation for the general public's health [4, 5].

The "Deep Learning" improvement project is an expert team organized by the Development Center of Basic Urban Leisure Physical culture healthy Textbooks of the Ministry of Education. Based on the relevant research and practical experience at home and abroad, combined with the reality of urban leisure physical culture healthy reform in China, it is a project to guide the development of "Deep Learning" as a mega data service platform [6, 7]. Deep learning (DL) is not only a problem in the field of computer science but also combines the knowledge of neuroscience and logic disciplines, involving the intersection of knowledge in many interdisciplinary fields [8]. In the physical module teaching-oriented to deep learning, students actively participate and devote themselves wholeheartedly, to obtain healthy physical and mental development, be physically strong, cultivate physical exercise habits, form a healthy self-awareness of urban leisure sports, and the ability to build a mega data service platform [9]. DL is the theoretical basis of the new curriculum reform, the reflection and improvement on the health of urban leisure sports, and an important way to cultivate core literacy. It has a guiding and improving effect on guiding and leading senior high school physical education classes in China, better assisting senior high school students to "have fun, strengthen their physique, improve their personality, and temper their will" in physical activity, and promoting the healthy and all-round development of urban leisure sports [10].

With the help of the technology innovation strategic alliance of urban leisure sports and health industry and the advantage of Internet technology based on the mega data service platform, we will build the Internet plus intelligent sports public service guarantee system for the integration of sports talents online, sports resources data, and core city sports services. Using deep learning to intelligently process information makes the construction of urban leisure physical culture healthy management and mega data service platform smarter [11, 12]. Therefore, it is necessary to build a deep learning model under big data technology, integrate big data technology into deep learning, help to master learners' learning status in real-time, realize the visualization and accurate prediction of urban leisure physical culture healthy data, help teachers and learners realize automatic feedback, and play a very important role in improving learners' learning effect. In the data transformation driven by deep learning, explore the data value, conquer the data ocean, and create a new direction of personalized medical treatment in the field of urban leisure sports and health [13, 14]. Physiological data analysis based on in-depth learning can help people better understand their physical conditions and help doctors formulate personalized medical plans for patients.

The rest of the paper is organized as Section 2 gives related work, Section 3 provide principles and models of deep learning, Section 4 gives construction of urban leisure physical culture healthy mega data service platform, and conclusion is given in Section 5.

2. Related Work

Literature [15] pointed out that one of the most important applications of urban leisure sports health big data is disease prevention and control. In literature [16], the growing integration of urban leisure through the method of big data analysis, the advancement, and depth of integration of physical and medical services have been accelerated by a healthy physical culture, health, and medical services. With the support of doctors' prejudgment, the notion of "sports is a good doctor" and "great doctors can prevent diseases" has steadily seeped into the medical sector, and the sports department has improved various exercise methods, nutrition, and sports dangers. Literature [17] research shows that many research institutions also attach importance to the quality of data to obtain good research results in the process of gene research, as Japanese scholar Takashi Kido pointed out: obtain massive and accurate user gene data, analyze and study the user's data and genetic information, and remove noise data and leave useful data. Literature [18] puts forward that with the guidance of government policies, "residents' health first" and the support of the public service system of urban leisure physical culture healthy and Internet plus the idea of building an information platform of combining physical and medical services with fitness services should be implemented. Literature [19] through the method of big data analysis, the health model of urban leisure sports was established, and the mega data service platform was used to find out the pathogenic factors, predict the development trend of diseases, and assess the risk level of diseases. Finally, the corresponding treatment plan was made for patients. In literature [20], the information platform of physical and medical health services serving the national fitness is reformed and constructed, according to research, through the cultivation and introduction of compound talents integrating urban leisure physical culture healthy and medical care, as well as the monitoring of national fitness big data and the prediction and evaluation of sports risks, to promote the mutual penetration and integration of sports, medical care, and health data. Literature [21] proposed that the integration of sports and medicine health information service platforms is mainly to facilitate the acquisition of national fitness, sports risk assessment, and scientific exercise, nutrition, and rehabilitation guidance information. In the construction of the platform, follow the principles of comprehensiveness and mass demand, build a comprehensive sorting service platform for personal sports and medical data through the monitoring of the physical culture healthy industry, and the guidance of the medical and health departments. Literature [22] analyzed and predicted the cancer risk of users through big data analysis methods, user credit card consumption records, and took preventive measures in advance for groups with high-risk coefficients to reduce the risk of cancer. According to research published in the literature [23], project researchers track and record the heart data of a fixed group for a long time in the early stages, then analyze the data using big data technology to uncover the causes of heart disease, and finally formulate relevant countermeasures based on the specific causes. According to the literature [24], big data technology can evaluate and understand the features of huge data in a relatively short time, allowing researchers to learn and identify illness characteristics and laws. Such a large-scale data analysis

Table 1: Summary of urban leisure sports health.

Big data of urban leisure and fitness	Urban leisure health big data is mainly applied to three scenarios in the fitness field: first, at the government level, second, at the sports marketing level, and third, in the field of health management.
Big data of urban leisure sports competition	The physical and psychological conditions of athletes before the competition, the weather conditions during the competition, the surrounding environment of the competition, and the performance of athletes on the field will affect the competition. In addition to the continuous rapid response of athletes on the field, the timely adjustment of competition strategies and tactics is also the key to winning the game.
Big data of urban leisure sports communication	Big data technology helps the live broadcast of real-time data on video signals, brings the audience a panoramic view of the whole game, and provides in-depth statistical data such as the running speed, cumulative distance, coverage map, and ball possession rate of players and teams.
The generation of health demand for urban leisure sports	Urban leisure sports health is one of the important fields to promote the rapid development of sports, and the demand for urban leisure sports health is expressed in implicit and explicit forms, and the relevant factors affecting the demand are relatively complex and diverse, including not only economic factors, social factors, natural factors, but also personal, family, similar groups and other factors.
Combination of big data and urban leisure sports health technology	Urban leisure sports health technology is a powerful booster for the development of the sports industry, and among many new sports technologies, big data undoubtedly plays the most important role. In the internet era, data is the most precious resource. Big data is leading and combining with traditional industries, giving birth to new vitality.

method is likely to be impossible for a person to process all his life.

Urban leisure sports health is one of the important components of Chinese health. It not only plays a key role in promoting people's living health and improving people's physical fitness but also plays a fundamental role in promoting the all-round development of the public. At the same time, the implementation of urban leisure sports health is also an important way to promote the health of the whole people. This paper builds a big data service platform for urban leisure sports health based on in-depth learning, which can accurately improve the path of urban leisure sports health, innovate the traditional research methods to improve urban leisure sports, and further improve the health level of urban leisure sports. Based on the above literature, this paper summarizes the urban leisure sports health as follows, as shown in Table 1.

3. Principles and Models of Deep Learning

Shallow learning has a lot of flaws when it comes to learning the deep abstract characteristics of data. As a result, deep learning is developed based on traditional machine learning theory in the field of artificial neural network research to learn the high-order abstract feature representation of data and tackle many hard tasks linked to artificial intelligence [25]. The concept of "deep learning" is put forward relative to "shallow learning." DL came to the attention of researchers after it was put forward in the 1970s. However, it was not until the new century, 2006, that a breakthrough was made in the theoretical research of deep learning. After that, it quickly achieved great success in computer vision, audio, voice analysis, text classification, image recognition, and other fields. The concept of deep learning (DL) originates from the research of ANN. Multilayer perceptron (MLP) with multiple hidden layers is a kind of DL structure. DL is a high-end, in-depth acquisition, a kind of high-cognitive behavior, involving high-order thinking activities [26, 27].

Compared with physical education teaching, deep learning mainly has three obvious characteristics: first, deeply interpret the knowledge and skills of physical education and truly participate in it. Second, deepen the subject thinking method and cultivate the quality of learning physical education. Students concentrate on the main learning theme, gaining a thorough understanding and internalization of the essence of urban recreation [28]. Physical culture healthy knowledge in advanced learning and training competition situations in specialized sports and use current knowledge transfer to difficult learning tasks and tournaments. The development of students' core literacy includes the cultivation of thinking ability, and the improvement of thinking ability includes the formation of certain excellent sports projects in practice through continuous participation in learning and thinking continuous training, as well as spiral rise, which lays a foundation for students to develop their expertise. The deep network consists of a nonlinear computing layer containing many hidden layers. The output of the previous layer of the deep artificial network is used as the input of the higher level networkp [29]. Such a network structure can learn more critical and effective deep feature representation from a large number of input data. In terms of representation, deep learning can build a deep structure by stacking single-layer training modules together. DL realizes the wireless approximation of complex functions through a deep nonlinear network and solves the problem of shallow learning's ability to represent complex functions with limited samples and calculation units. By reducing the reconstruction error, the automatic encoder determines the parameters of the decoding function and learns how to reconstruct the input signal space from the output, which is called decoding. The coding parameters of the automatic encoder are also used to

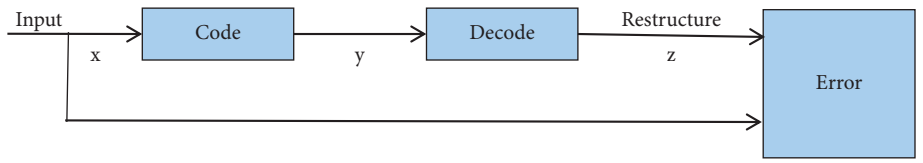

Figure 1: Schematic diagram of automatic coding [11].

reconstruct the input signal. If the reconstructed signal is similar to the input signal, the hidden layer Y can be regarded as another representation of the input, that is, the feature. The learned deep feature representation contains much nonobvious structural information of the input data, which is a method to learn the effective features of the data from the data. The general deep network structure needs to be combined with ordinary machine learning algorithms in many practical applications. By determining the parameters of the coding function, the automatic encoder transforms an input space into a new distributed expression, which is called coding, as shown in Figure 1.

Self-coding neural network is a network model composed of many automatic encoders. Unsupervised autonomous learning can represent the characteristics of health status from unlabeled original high-dimensional time-series physiological big data and show users' health status of urban leisure sports intuitively in front of people, to help people have a clear understanding of the health status of urban leisure sports and provide scientific guidance for their health management. In deep learning, stack self-coding neural network belongs to unsupervised neural network. In this network, the output of its lower self-encoder is used as the input of its higher self-encoder, see Figure 2 for the detailed reconstruction diagram.

Then, the coding process of the trestle self-coding neural network trains the step expression algorithm of the network parameters of each layer in order from front to back

$$\begin{aligned} a^{(l)} &= f\left(z^{(l)}\right), \\ z^{(l+1)} &= W^{(l,1)}a^{(l)} + b^{(l,1)}, \end{aligned} \tag{1}$$

where $a^{(l)}$ represents the automatic encoder, and $z^{(l)}$ represents the coding parameters, and conversely, the decoding of each layer of automatic encoder is performed from back to front.

$$\begin{aligned} a^{(n+l)} &= f\left(z^{(n+l)}\right), \\ z^{(n+l+1)} &= W^{(n-1,2)}a^{(n+l)} + b^{(n-1,2)}. \end{aligned} \tag{2}$$

The energy function between that visible lay variable v and the hidden layer variable h is expressed as

$$E(v,h;\theta) = -\sum_{ij} W_{ij}v_i h_i - \sum_i b_i v_i - \sum_j a_j h_j. \tag{3}$$

If the deep learning model is a 4-layer network training model, taking (x (1), y (1)) as the network training set, the forward propagation algorithm is briefly described as

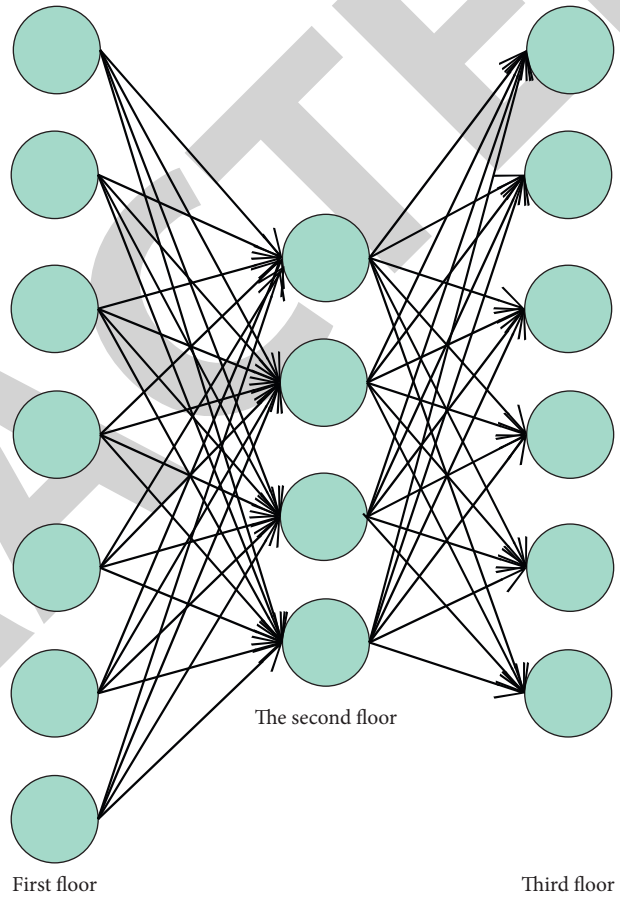

Figure 2: DL structure model.

$$\begin{aligned} a^{(1)} &= x, \\ z^{(2)} &= \theta^{(1)}a^{(1)}, \\ a^{(2)} &= g\left(z^{(2)}\right)\left(a\,d\,da_0^{(2)}\right), \\ z^{(3)} &= \theta^{(2)}a^{(3)}, \\ z^{(4)} &= \theta^{(3)}a^{(3)}, \\ a^{(4)} &= h_\theta(x) = g\left(z^4\right), \end{aligned} \tag{4}$$

where $a^{(2)}$ represents the reconstructed signal and $a^{(3)}$ represents the input signal. After the forward propagation is calculated, the backward propagation can be started based on the idea of error (the deviation between the output value $a^{(4)}$ and the actual value $y(k)$ of the training set). The specific steps are as follows.

The error is represented by the variable δ, then [12].

$$\delta^{(4)} = a^{(4)} - y. \quad (5)$$

Students can learn urban leisure physical culture healthy courses without being affected by time or place, understand and self-study favorite sports, master more sports theoretical knowledge, avoid sports injuries, and improve the teaching by providing mega data service platform video resources for each urban leisure physical culture healthy public course, self-study videos of various sports, physical culture healthy and health recovery, and other theoretical knowledge.

DL is an important branch of machine learning and a subset of neural network methods. Because of its large-scale parallel distributed processing, self-organization, self-learning, adaptive, transportable learning ability, and data diversity, deep learning has the characteristics of memory function and robustness to sequence signals. Deep learning refers to the amount of nonlinear calculation combination of nonlinear calculation units in the hidden layer of the network, which is also represented in the number of layers of the network, as opposed to shallow neural networks. DL models mainly include convolutional neural network model, deep trust network model, stack self-coding network model, automatic coding machine, restricted Boltzmann machine, and cyclic neural network, a neural network with multi-model fusion, etc.

4. Construction of Urban Leisure Physical Culture Healthy Mega Data Service Platform

In this section, we will discuss construction of urban leisure physical culture healthy mega data service platform based on in-depth learning and analysis of experimental results in detail.

4.1. Construction of Urban Leisure Physical Culture Healthy Mega Data Service Platform Based on In-Depth Learning. It is the key to improving the status of urban leisure physical culture healthy mega data service platform and gradually form a good lifestyle. The mega data service platform of urban leisure physical culture healthy with in-depth learning is the learning goal of physical education teachers under the guidance of literacy. The deep feature representation of urban leisure physical culture healthy is the premise and foundation of mega data service platform for urban leisure physical culture healthy assessment.

This study investigates how to construct the network architecture of urban leisure, physical culture, and healthy mega data service platforms using deep learning theory. Unsupervised autonomous learning can represent the characteristics of health status from unlabeled original high-dimensional time-series physiological big data and show users' health status of urban leisure sports intuitively in front of people, to help people have a clear understanding of the health status of urban leisure sports and provide scientific guidance for their health management. Students focus on the leading learning theme, realize the understanding and internalization of the essence of urban leisure physical culture healthy knowledge in the specific sports advanced learning and training competition situation, and apply the existing knowledge transfer to challenging learning tasks and competitions. While selecting the least features, the learned features can represent the characteristics of the original data to the maximum extent. Physical culture in the city is a crucial initiative for realizing the core mission of teaching people and increasing their overall quality of life. It includes a one-of-a-kind feature for implementing a mega data service platform with sports intelligence and sports heart. DL can be understood as learning for migration or as a process of building a mega data service platform for urban leisure physical culture healthy knowledge. Through this process, students can apply what they have learned in one situation to the new situation. Combining the mega data service platform of urban leisure physical culture healthy with in-depth learning to create a new model of urban leisure physical culture healthy management has become a new focus in academia. In many countries in the world, including China, the "big data strategy" has been raised to the national policy level. Countries take the development of big data of urban leisure physical culture healthy as a major national strategy and put it into practice. The theory of deep learning puts forward that in teaching practice, we mainly pay attention to the mutual transformation of practical experience and knowledge, make students become the real teaching subject in active activities, and help students grasp the essence of knowledge and skills through deep processing.

DL can effectively design the new curriculum of physical education and health with high-level skills and carry out the learning process, learning design, learning effectiveness, and learning acquisition around the fundamental task of "teaching. In physical education classroom teaching, it is a process of emotion-experience-internalization. By using various effective methods, emotion, attitude, and values can be seamlessly infiltrated into training students' ability, specific situations, knowledge, skills, and attitudes. Diligent practice and regular competition," to improve student's learning ability in the situation of critical thinking and solving complex problems, guide high school physical education teachers to accurately understand the connotation and significance of deep learning, and realize the core literacy of physical education and health, as shown in Figure 3.

Physical education teachers should pay attention to cultivating students' awareness of higher order thinking. In teaching, by creating situations and carefully designing problems and topics that must be discovered and solved by using higher order thinking, they can provide and guide the use of various resources, especially information tools, so as to promote students' development of core literacy of physical education and health in the process of solving problems and completing tasks. Simulate social practice in teaching activities. The goal of the urban leisure physical culture healthy mega data service platform is to enable students to adhere to the mainline of urban leisure physical culture healthy topic skill teaching through instructors' targeted and planned implementation and deep student involvement. Mega data service platform to develop students' knowledge and abilities in the sphere of urban leisure,

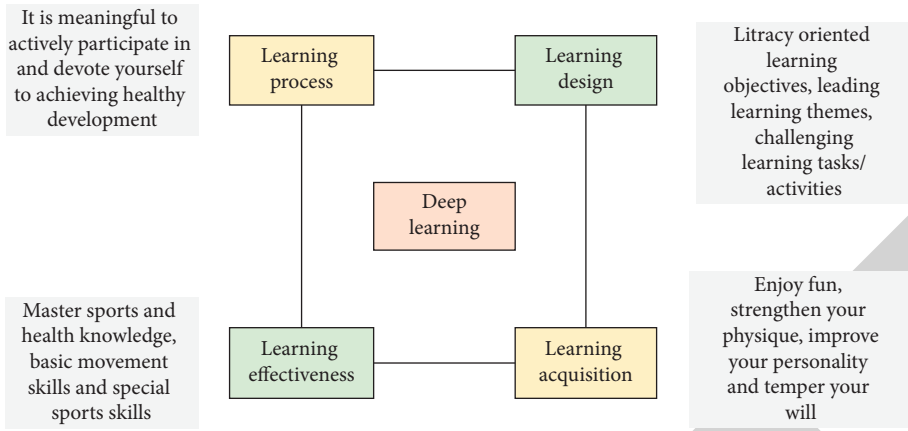

Figure 3: Connotation of "four learning elements" of healthy and in-depth learning of urban leisure sports.

Table 2: Functional module screening table of urban leisure physical culture healthy test data platform.

	X	S	CV
Primary index			
Data monitoring of students' physical health	5.12	0.00	0.00
Secondary index			
Basic data	4.4	0.51	0.11
Behavioral data	4.16	0.57	0.13
Three-level index			
Physical fitness test data	4.12	0.42	0.10
Medical examination data	4.41	0.50	0.11
Psychological evaluation data	4.49	0.51	0.11
Physical education class activity data	4.66	0.48	0.10
Extracurricular sports activity data	4.57	0.50	0.10

physical culture, and healthy living. After the analysis of the Likert five-point scale, the average scores of primary indicators are 5.00, 5.00, and 4.75, respectively, the average scores of secondary indicators are more than 3.5, and the coefficient of variation is lower than 0.15, as shown in Tables 1–3.

Experts are asked to self-evaluate the judgment basis (CS) and familiarity (CA) of the function screening of the mega data service platform module of urban leisure physical culture healthy test in the first round of the questionnaire. The quantitative values are shown in Tables 4–6, respectively.

The authoritative coefficient (CR) of statistical experts in the evaluation of mega data service platform for various elements of urban leisure physical culture healthy is calculated as $Cr = (CS + Ca)/2$. It is generally believed that $CR \geq 0.7$, and its reliability meets the standard. It can be seen from Table 7 that the CR values of the two systems are greater than 0.7, indicating that the data obtained from this opinion collection has high reliability.

Allow students to learn about urban leisure, physical culture, and the building of a mega data service platform, as well as when, where, and why they should apply the knowledge and skills they have gained. When students realize that new problems or situations are related to the knowledge they have learned, they can use the knowledge of urban leisure physical culture healthy, and the construction of mega data service platforms to solve the real problems in physical culture healthy knowledge. In the process of learning, students can transfer what they have learned to new situations and comprehensively apply what they have learned to solve problems in their lives. This feature reminds teachers to create and create appropriate activities and opportunities, so that students can realize the practical transformation and comprehensive application of knowledge, cultivate innovative consciousness, and form positive social feelings, attitudes, and sense of responsibility in such activities.

4.2. Analysis of Experimental Results. In the feature extraction stage of urban leisure physical culture healthy, this paper uses a deep neural network composed of two layers of convolution layer and two layers of lower sampling layer constructed by mega data service platform to learn the characteristics of the original signal. First, the probability distribution of urban leisure physical culture healthy characteristics is obtained by using the multivariate Gaussian model and then it is divided into different probability intervals. A typical representation of the health state of urban leisure sports is some characteristic points in the

Table 3: Functional module screening of physical health intervention for urban leisure sports students.

	X	S	CV
Primary index			
Students' physical health intervention	5.11	0.00	0.00
Secondary index			
Physical health diagnosis and evaluation	5.11	0.00	0.00
Exercise prescription	4.57	0.50	0.13
Physical education curriculum intervention	4.82	0.38	0.07
Three-level index			
Physical function and quality evaluation	4.82	0.38	0.07
Medical index diagnosis	4.41	0.50	0.11
Exercise prescription design	4.11	0.42	0.10
Feedback of exercise prescription evaluation	3.24	0.44	0.13
Curriculum assessment	4.41	0.50	0.11
Curriculum evaluation	3.32	0.48	0.14

Table 4: Functional module screening of sports resources and information in urban leisure sports schools.

	X	S	CV
Primary index			
School sports resources and information	4.74	0.44	0.11
Secondary index			
Sports competition and activity information	3.82	0.38	0.11
Stadium equipment resource management	3.74	0.44	0.11
Tertiary indicators			
Display of sports competitions and activities	4.32	0.48	0.10
Registration of sports competitions and activities	4.41	0.50	0.11
Daily inspection of venue equipment	3.98	0.42	0.10
Maintenance of venue equipment	3.74	0.44	0.11

Table 5: Judgment is based on quantitative value.

Judgment basis	Big	Middle	Small
Theoretical analysis	0.29	0.21	0.11
Practical experience	0.48	0.41	0.31
Peer communication	0.11	0.12	0.12
Intuitive choice	0.12	0.13	0.13

Table 6: Quantitative value of familiarity.

Familiarity	Very familiar	Quite familiar	General familiarity	Not very familiar	Be unfamiliar with
Quantized value	4	3	2	1	1

Table 7: Statistical table of expert authority coefficient.

	Cs	Ca	Cr
Module function screening	0.87	0.89	0.88

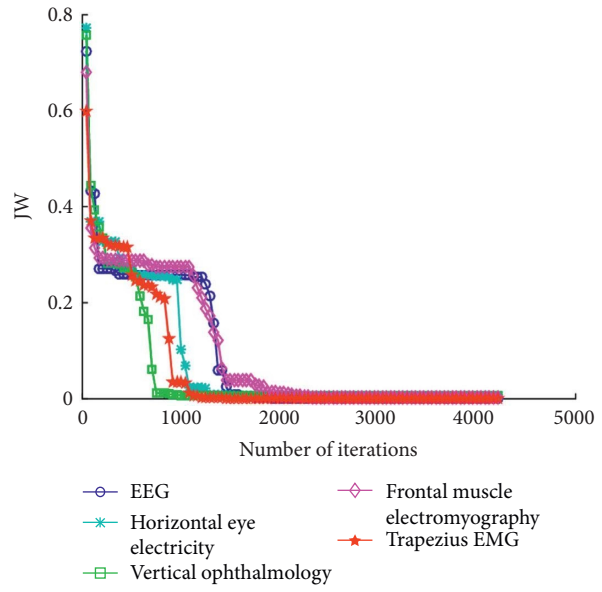

Figure 4: Curve relationship between iteration time and JW.

tiny probability interval. With reference to the academic quality level of physical fitness module, the specific performance of students in various literacy dimensions is determined, including specific literacy dimensions, corresponding physical fitness learning contents, observable physical fitness behaviors, situations or conditions where physical fitness behaviors occur, etc., which can be used as the basis for physical education teachers to organize physical fitness exercises, select exercise methods, and evaluate students' learning effects. According to the size mark of the probability mean of the interval characteristic points, the characteristic points in the probability interval of different mega data service platforms are separated into the health status level of urban leisure sports.

As shown in Figure 4, with the increase of iteration times, Jw gradually tends to zero and then remains stable, and the reconstructed signal is almost identical to the original signal. When JW is small enough to be close to a decimal, the feature learned by the convolutional neural network is another effective expression of the original signal.

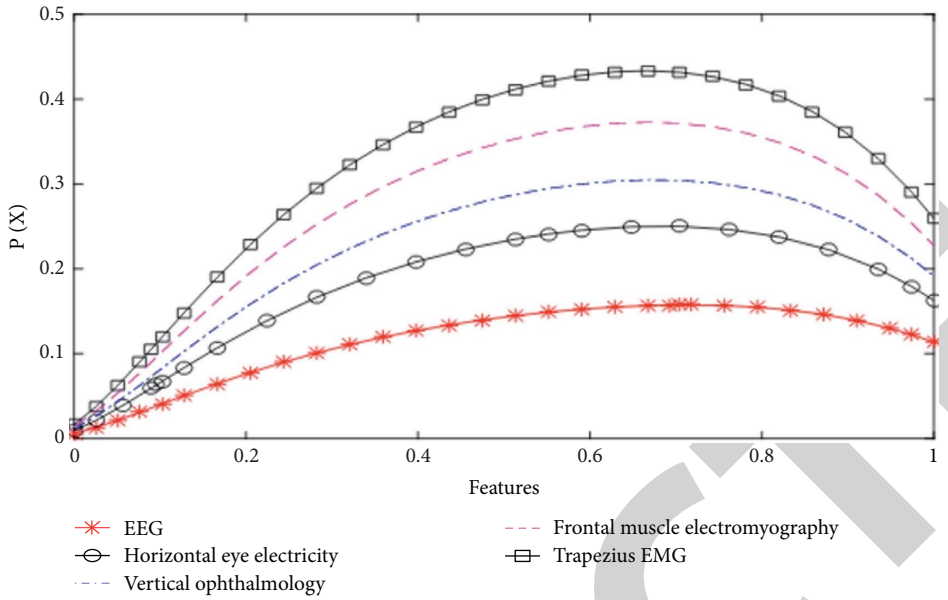

Figure 5: Gaussian distribution of health characteristics of urban leisure sports.

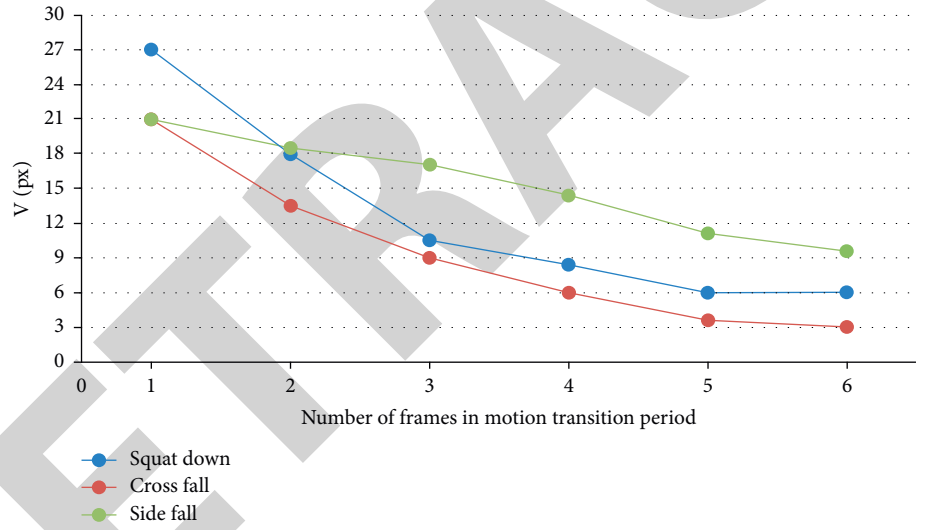

Figure 6: Change of V in sports transition cycle.

We must also evaluate if the learned features agree with the Gaussian distribution while learning features from the original signal and delivering them to the multivariate Gaussian model for urban leisure physical culture healthy evaluation.

The Gaussian distribution of the physiological signal characteristics of urban leisure physical culture healthy has been calculated separately to verify whether it accords with the Gaussian distribution. As shown in Figure 5, it is intuitive to see that the eight physiological signal characteristics obtained in this experiment accord with the Gaussian distribution.

During the transition period of urban leisure sports, V can distinguish squat and lateral fall well, but the distinction between squat and lateral fall is relatively small. As can be seen from the figure, D can better distinguish squat from side fall during the exercise transition period. Challenging learning task consists of a group of interrelated, structured, and logical series of learning activities, which is a module learning process to implement the module learning objectives. The challenging learning tasks of the module include physical recovery, physical evaluation, physical combination exercises focusing on aerobic and strength, physical challenges, principles and methods of developing physical abilities, etc. The figure further reflects the different advantages and emphases of these two static features, as shown in Figures 6 and 7.

The longitudinal coordinate of neck of falling behavior tends to the final value at the 10th frame, while the longitudinal coordinate of lying down changes more slowly and tortuously. It is further verified that dynamic characteristics have obvious value significance, as shown in Figure 8.

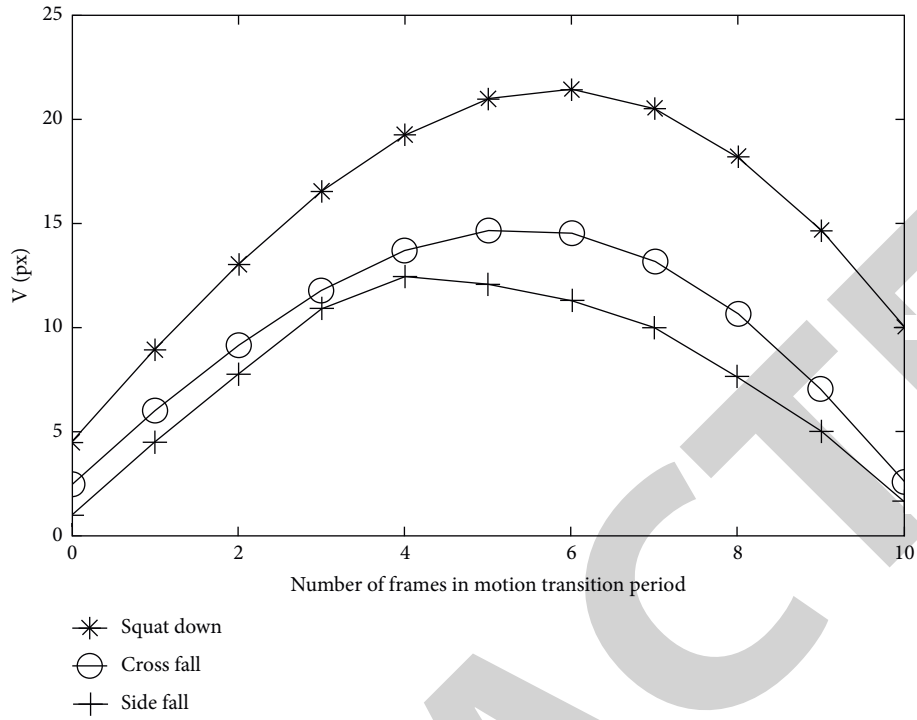

Figure 7: Change of D in sports transition cycle.

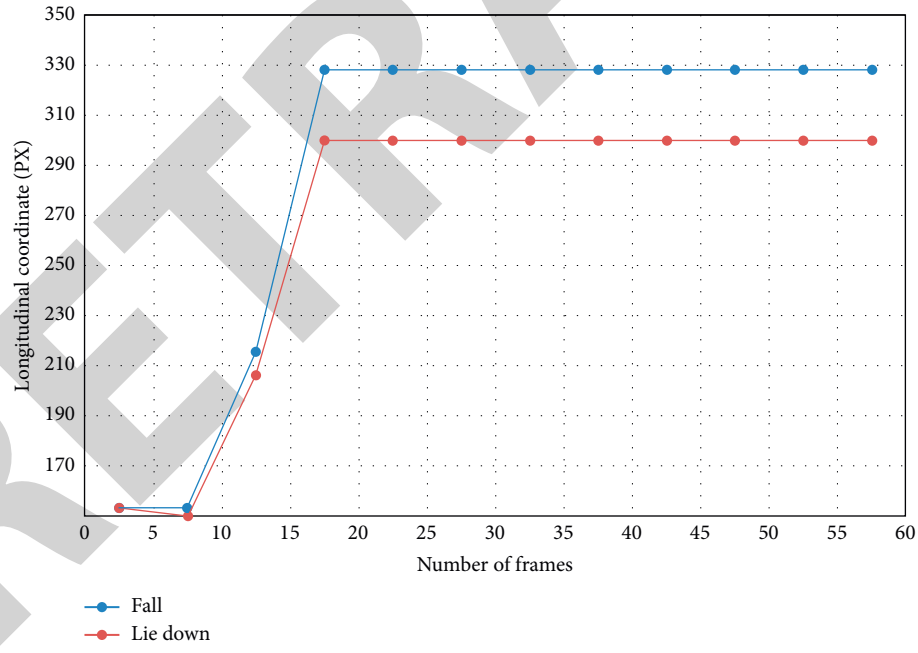

Figure 8: Changes of longitudinal coordinates of falling and lying down.

The ROC curve and AUC area of three algorithms on large data set and small data set are shown. Among them, the larger the AUC area, the better the performance of the representative algorithm. As can be seen from Figures 9 and 10, the algorithm proposed in this paper has better performance on both small data sets and large data sets.

The mega data service platform development module for urban leisure three functions are included in a healthy physical culture. The first is the addition of a physical education curriculum to the curriculum. Through specific requirements such as practice time, practice times and group number, and through various ways such as cyclic practice, high-intensity interval practice, and challenge practice, it reflects the learning and competition of physical exercise, highlights the integrity, relevance and result orientation of physical exercise, and emphasizes students' task of

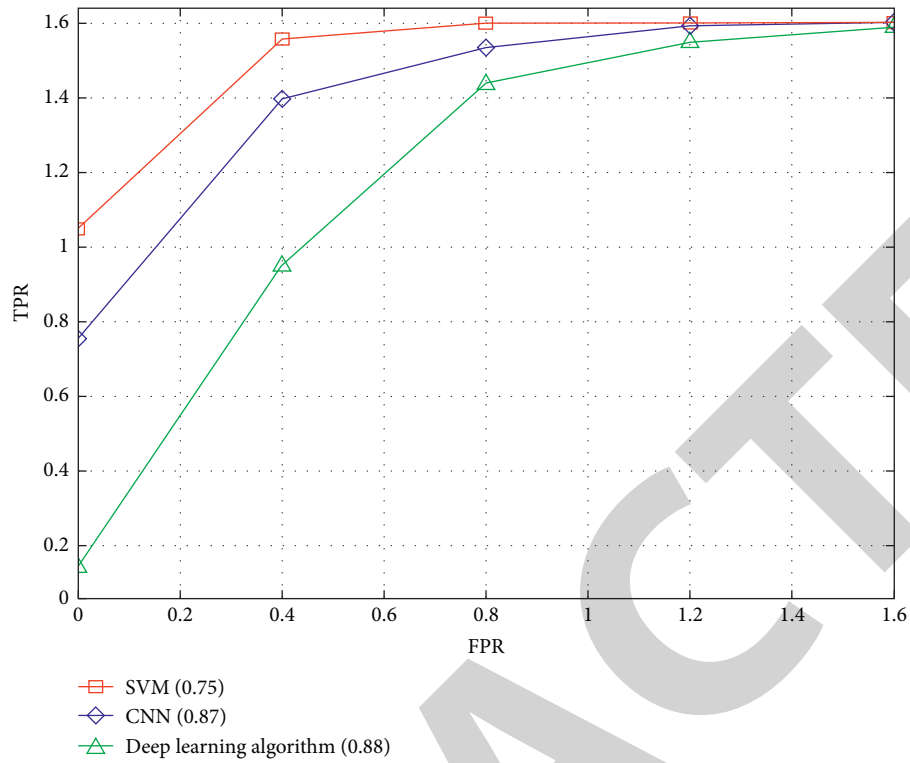

Figure 9: Comparison of data sets of three algorithms in urban leisure physical culture healthy.

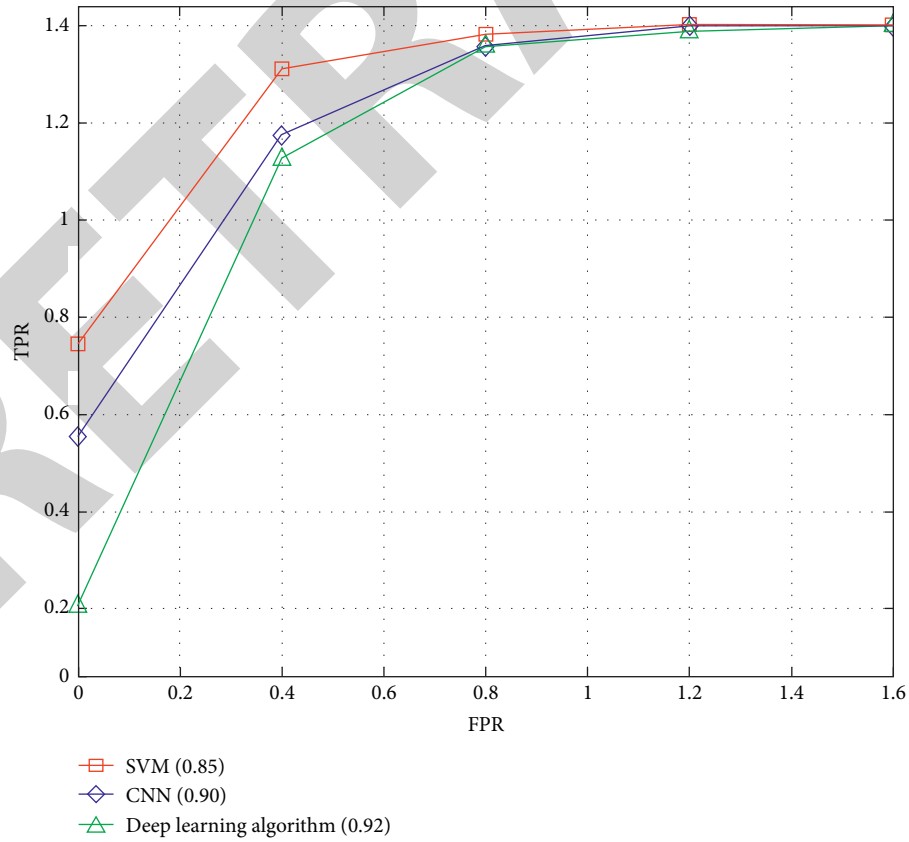

Figure 10: Comparison of data sets of three algorithms in urban leisure physical culture healthy.

completing a series of physical activities. The function of urban leisure physical culture healthy teaching resources is set to solve this problem. By providing mega data service platform video resources for each urban leisure physical culture healthy public course, self-study videos of various sports, physical culture healthy and health recovery, and other theoretical knowledge, students can learn urban leisure physical culture healthy courses without being affected by time and place, understand and self-study favorite sports, master more sports theoretical knowledge, avoid sports injuries, and improve the teaching effect of mega data service platform of urban leisure physical culture healthy public course and students' autonomy in learning. Through a complete module, we can gradually recover, improve, consolidate, and strengthen students' physical fitness, and it can develop from physical fitness to physical fitness improvement to the formation of physical exercise habits.

5. Conclusion

Nowadays, sports development and reform necessitate the informatization of urban leisure physical culture healthy, and the construction of a mega data service platform, as well as the improvement of management efficiency, working efficiency, and the reduction of management expenses. It is the inevitable transition of human production activities from the original spontaneous and disorderly behavior to the standardized and orderly behavior. With the ongoing advancement of sports, the informatization of urban leisure physical culture healthy and the creation of mega data service platforms is developing, thus informatization and sports development and construction are mutually conditional. The construction module of mega data service platform for urban leisure physical culture healthy includes three functions. The first is the introduction of the physical education curriculum. It mainly shows the school's physical education curriculum to students, including the teaching objectives of the curriculum, the curriculum assessment standards, and the introduction of sports and the fitness effect, etc. The arrival of the era of big data brings a new spring to the progress of urban leisure physical culture is healthy and takes the health needs of urban leisure sports as the starting point and destination. In this paper, deep learning theory is used to analyze and model the construction of urban leisure physical culture healthy mega data service platform and how to use deep learning for feature learning in the construction of urban leisure physical culture healthy mega data service platform to build an effective health assessment model is studied. Experiments prove the effectiveness of the method designed in this paper.

Data Availability

The data used to support the findings of this study are included within the article.

Conflicts of Interest

The authors declare that they have no conflicts of interest.

Acknowledgments

This work was supported by the Ministry of Education, Humanities and Social Science Projects: the evolution and optimization of urban leisure sport public space under the background of the new era (no. 19YJA890035) and Humanities and social science projects of Anhui Provincial Education Department (SK2020A0042 and SK2021A0254).

References

[1] C. Wei, Q. Wang, and C. Liu, "Research on construction of a cloud platform for tourism information intelligent service based on blockchain technology," *Wireless Communications and Mobile Computing*, vol. 2020, Article ID 8877625, 9 pages, 2020.

[2] X. Zhang, X. Ming, and D. Yin, "Reference architecture of common service platform for Industrial Big Data (I-BD) based on multi-party co-construction," *International Journal of Advanced Manufacturing Technology*, no. 2, pp. 15-16, 2019.

[3] B. Claudio, B. Filippo, C. Antonio, and D. R. Carlos, "LocalFocus: a big data service platform for local communities and smarter cities," *IEEE Communications Magazine*, vol. 56, no. 7, pp. 116–123, 2018.

[4] W. Liu, S. Long, D. Xie, L. Yanjie, and W. Jinkun, "How to govern the big data discriminatory pricing behavior in the platform service supply chain?An examination with a three-party evolutionary game model," *International Journal of Production Economics*, vol. 231, pp. 231–234, 2021.

[5] M. Kavand, M. Soleimani, T. Kaghazchi, and N. Asasian, "Competitive separation of lead, cadmium, and nickel from aqueous solutions using activated carbon: response surface modeling, equilibrium, and thermodynamic studies," *Chemical Engineering Communications*, vol. 203, no. 1, pp. 123–135, 2016.

[6] M. S. Yang, W. K. Joo, K. S. Choi, and Y. Kim, "Development of platform-based knowledge map service to get data insights of R&D institution on user-interested subjects," *Wireless Personal Communications*, vol. 98, no. 8, pp. 1–21, 2017.

[7] Z. Li, D. Seco, A. Sánchez Rodríguez, and Alexis, "Micro-service-oriented platform for internet of big data analytics: a proof of concept," *Sensors*, vol. 19, no. 5, Article ID 1134, 2019.

[8] X. Zhang, "The construction of urban public sports service from the perspective of public health," *Revista Brasileira de Medicina do Esporte*, vol. 27, no. spe, pp. 69–72, 2021.

[9] Z. Guo, Q. Zhu, X. Wu, and C. Wenda, "Research on bond–slip performance between pultruded glass fiber-reinforced polymer tube and nano-CaCO3concrete," *Nanotechnology Reviews*, vol. 9, no. 1, pp. 637–649, 2020.

[10] D. A. Gonzalez✕hica, E. Hoon, and N. Stocks, "Multimorbidity, health-related quality of life and health service use among individuals with mental health problems: urban-rural differences in South Australia," *Australian Journal of Rural Health*, vol. 28, no. 2, pp. 110–119, 2020.

[11] X. Li, J. Song, and B. Huang, "A scientific workflow management system architecture and its scheduling based on cloud service platform for manufacturing big data analytics," *International Journal of Advanced Manufacturing Technology*, vol. 84, no. 1-4, pp. 119–131, 2016.

[12] J. Wang, M. Qiu, and B. Guo, "Enabling real-time information service on telehealth system over cloud-based big data platform," *Journal of Systems Architecture*, vol. 72, pp. 69–79, 2016.

[13] Y. J. Choi, *From M2M to IoT: Platform, Network and Service*, pp. 1–3, Peer-to-Peer Networking and Applications, Ajou University, Republic of Korea, 2017.
[14] J. Shen, J. Cheng, and W. Huang, "An exploration of spatial and social inequalities of urban sports facilities in nanning city, China," *Sustainability*, pp. 12-13, 2020.
[15] S. Camporesi and M. Hmlinen, "The construction of categories in sport: unfair advantages, equality of opportunity and strict attainability," *European Journal of Sport Science*, pp. 1–13, 2021.
[16] M. Winkler and U. Paderborn, "The role of superlinear damping in the construction of solutions to drift-diffusion problems with initial data in L1," *Advances in Nonlinear Analysis*, vol. 9, no. 1, pp. 526–566, 2020.
[17] C. Wu, "Indicator system construction and health assessment of wetland ecosystem——taking Hongze Lake Wetland, China as an example," *Ecological Indicators*, vol. 112, p. 114, 2020.
[18] M. S. Won and C. P. Langcuyan, "A 3D numerical analysis of the compaction effects on the behavior of panel-type MSE walls," *Open Geosciences*, vol. 12, no. 1, pp. 1704–1724, 2020.
[19] B. D. Gayer, T. A. Saurin, and P. Wachs, "A method for assessing pull production systems: a study of manufacturing, healthcare, and construction[J]," *Production Planning & Control*, no. 2, pp. 1–21, 2020.
[20] S. Guofen, L. Jinghan, Y. Yang et al., "Large-area 3D hierarchical superstructures assembled from colloidal nanoparticles," *Small*, vol. 15, no. 18, Article ID e1805308, 2020.
[21] G. Mifeng, "Utilization of tailings in cement and concrete: a review," *Science and Engineering of Composite Materials*, vol. 26, no. 1, pp. 449–464, 2019.
[22] S. Yaqi, "Application of solar photovoltaic power generation system in maritime vessels and development of maritime tourism," *Polish Maritime Research*, vol. 25, no. s2, pp. 176–181, 2018.
[23] S. Shao, T. Wu, A. Guo et al., "The training contents, problems and needs of doctors in urban community health service institutions in China," *BMC Family Practice*, vol. 19, no. 1, pp. 3–8, 2018.
[24] A. Wj, A. Ag, B. Rh, and D. Andy, "Work-related ill-health in construction: the importance of scope, ownership and understanding," *Safety Science*, vol. 120, pp. 538–550, 2019.
[25] L. Xu, X. Zhou, X. Li, R. H. Jhaveri, T. R. Gadekallu, and Y. Ding, "Mobile collaborative secrecy performance prediction for artificial IoT networks," *IEEE Transactions on Industrial Informatics*, vol. 18, no. 8, pp. 5403–5411, 2022.
[26] H. Wang, X. Li, R. H. Jhaveri et al., "Sparse Bayesian learning based channel estimation in FBMC/OQAM industrial IoT networks," *Computer Communications*, vol. 176, pp. 40–45, 2021.
[27] B. Khan, R. Naseem, M. A. Shah et al., "Software defect prediction for healthcare big data: an empirical evaluation of machine learning techniques," *Journal of Healthcare Engineering*, vol. 2021, Article ID 8899263, 16 pages, 2021.
[28] Z. Lv and L. Qiao, "Analysis of healthcare big data," *Future Generation Computer Systems*, vol. 109, pp. 103–110, 2020.
[29] X. Gou and Z. Xu, "An overview of Big Data in Healthcare: multiple angle analyses," *Journal of Smart Environments and Green Computing*, vol. 1, no. 3, pp. 131–145, 2021.