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Research Article

Construction of Leisure Physical Education Teaching Model Based on Multisensor Fusion

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Physical education is an important part of course teaching. Doing well in the teaching of this course can not only improve students' quality, but also promote students' healthy and all-round development. With the rapid development of China's economy, leisure sports, as an important way of leisure life, are increasingly favored by people. However, the related leisure sports service talents and industrial management talents are in short supply, which has restricted the development of the leisure sports industry in breadth and depth. The demand in the leisure sports market for advanced applied talents has put forward the call of the times for the direction of running sports colleges and universities, which is also the significance of the study. To sum up, this paper builds a leisure physical education teaching model based on multisensor fusion. Firstly, it summarizes leisure sports and multisensor fusion technology and then introduces how to add multisensor technology to physical education teaching. Finally, some experiments are carried out using the data set published by the University of California. In the model training, the super parameters of the convolutional neural network with two to eight layers are tested. The experimental results verify the effectiveness of the model; it achieves an accuracy of 86% when the number of convolutional layers is 6. The connotation of sports leisure and entertainment and the content of talent training mode is clarified, which lays a theoretical foundation for the following research. Among them, the construction of a curriculum system is the core part of talent training measures, and it is also an important part of the construction of leisure sports specialty.

1. Introduction

In recent decades, China's economy has developed rapidly. At present, China has been regarded by the world economic organization as one of the countries with the fastest growth in the consumer market. With the improvement of China's urbanization, great urban transformation activities have been launched all over the country. The expansion of cities has enabled the overall space of the consumer market to develop rapidly [1]. Leisure sports activities, as an important part of social development and improving the quality of life, gradually become a social demand and show the characteristics of fashion. The weight of different industries in the national economy is different in different development periods. In recent years, the leisure sports industry has become the pillar of the sports industry in developed countries [2]. It has played an important role in supporting and promoting the development of the sports industry and even the national economy. In developed countries and regions, the urban economic scale has also begun to rely on the prosperity of the leisure sports industry. In this century, more and more countries and regions will gradually enter the modern leisure era with the development and changes in the social economy [3]. The remarkable sign is that leisure and entertainment activities will be integrated into the daily life of local residents and become an indispensable part of daily life, which will have a direct impact on the work and life of local residents. As an emerging industry, the modern leisure and entertainment industry and leisure tourism industry will have an important impact on the development of the global economy for a long time in the future and will become a new growth point of the global economy [4]. More and more people like to experience leisure life through sports. Leisure sports have gradually become an

indispensable part of the lives of some urban residents, and leisure sports consumption has gradually become a more fashionable way of life for urban residents.

At present, China's leisure, sports, and entertainment industry and related service industry are developing rapidly, and the scale of development is expanding rapidly. The demand for advanced applied talents engaged in this industry is also expanding rapidly. In the past decade, China's competition system has been changing. Professional leagues such as basketball, football, and table tennis have become more and more popular, attracting many enterprises to participate in them. Great changes have taken place in their sports concept [5]. The fashionable leisure sports represented by golf, ice and snow sports, outdoor market expansion, diving, etc., are more and more favored by urban residents. Thousands of people use their leisure time to participate in sports. Relatively speaking, the relevant service facilities are lagging behind, especially the sports service management professionals and leisure project service instructors that are in short supply [6]. In China, leisure sports education is still in its infancy and has not formed a systematic framework. The reasons for the rise of leisure sports include the following.

(1) The increase of leisure time provides possible conditions for people to relax.

(2) The increase of economic income provides a material basis for people's leisure.

(3) The growth of physical demand provides people with internal motivation for leisure.

(4) Technological progress provides a source of development for people's leisure.

However, only a few colleges and universities have set up leisure sports majors, and no comprehensive college has set up this major. In the western leisure sports developed countries, the training of leisure sports professionals has a very complete discipline system, which has an obvious multidisciplinary comprehensive nature [7]. It will be a great challenge to learn from the talent training experience of developed countries and establish a leisure sports specialty with Chinese characteristics. The idea that China's sports development strategy should complete the transformation from the Olympic gold medal strategy to the leisure and national sports stage has reached a consensus. In the industrial structure of western developed countries, the output value of leisure and related industries has occupied the main position of the national gross economic output value, and the urban economic scale has begun to shift and depend on the development of urban residents' leisure activities [7]. The leisure industry has become the pillar industry of the national economy of some countries in the world. In the 21st century, the market leisure sports industry in China has developed rapidly, but senior professional application-oriented talents such as industrial senior service talents and senior management talents, which are closely related to the market development, are rare and in great shortage [8].

Physical education is an important part of course teaching. A better and well-organized approach to the teaching of this course can not only improve students' learning abilities, but also promote students' healthy development. With the rapid development of China's economy, leisure sports are increasingly favored by people. However, the related leisure sports service talents and industrial management talents cannot fulfill the needs. This demand for talents has put forward the call of the times for the transformation of the direction of running higher physical education. To sum up, this paper builds a leisure physical education teaching model based on multisensor fusion. The main contributions of this paper include the following.

Firstly, we discuss and analyze leisure sports and multisensor fusion technology and then introduce how to add multisensor technology to physical education teaching. We introduce a deep neural network for automatic feature extraction and association and propose a data fusion strategy based on CNN. Finally, we use the data set published by the University of California and carry out experiments to test the effectiveness of the proposed approach.

2. Related Work

2.1. Leisure Mode of College Physical Education Teaching. The sports leisure mode advocates a civilized and healthy lifestyle, pays attention to establishing the idea of health first, and trains students' concept of lifelong exercise. At the same time, this teaching model also meets the personalized needs of students, helps to cultivate students' sound and perfect personalities, makes full use of leisure time to carry out physical exercise and learning activities, and plays an important role in promoting the healthy and all-round development of students. Therefore, its application has also been paid more attention [9]. The leisure life mode attaches great importance to the close connection between teaching and students' daily life so that students can feel like getting close to nature and enjoying their body and mind. It plays a positive role in the application of physical education teaching and has been paid more and more attention by teaching workers. The remarkable characteristics of this teaching mode are mainly reflected in the following aspects [10].

The leisure life mode focuses on allowing students to actively participate in sports practice, pursuing the healthy and all-around development of students, and fully demonstrating the competitiveness, entertainment, and education of sports teaching. During the teaching, let students participate in rock climbing, skiing, hip-hop dancing, and other activities; let students actively participate in practice and master physical exercise skills in life and leisure [11]. The leisure lifestyle model has the characteristics of leisure, with a variety of teaching methods and contents, including golf, rock climbing, qualitative sports, and dragon and lion dance. The introduction of these activities into physical education teaching can enrich students' cultural life, enable students to better participate in physical activities, improve students' tastes, and form a good habit from physical education to exercise [12]. Leisure sport is a kind of culture, full of humanistic characteristics, which is closely related to students'

daily life. Therefore, physical education teaching should not only master the basic theoretical knowledge of physical education, but also treat physical exercise as life and leisure, actively participate in physical exercise activities, and cultivate students' healthy, civilized, and scientific lifestyle and physical exercise habits [13]. In daily learning activities, students should be edified by sports culture, enjoy their body and mind, and improve their quality of life. Leisure modes of college physical education teaching are shown in Figure 1.

The function of physical education teaching is to cultivate students' interest in sports activities, enhance students' physical quality, and enable students to more effectively participate in learning activities. As a student, he/she should have a healthy physique, abundant energy, and achieve all-round development in morality, intelligence, and physique [14]. The leisure teaching method creates good conditions for students to take physical exercise, can mobilize students' enthusiasm to participate in the exercise, and let them develop good physical exercise habits. In daily life and study, students are generally faced with some pressure and need to take appropriate measures to relieve it. Leisure sports meet this need [15]. Its remarkable feature is that it can adjust students' emotions and entertain students' bodies and minds. By participating in physical exercise activities, students can better integrate into daily learning activities, let students relax psychologically and physically, regulate their emotions, keep students physical and psychological in a good state, and promote health and all-around development [16]. Although the application of the leisure life model in physical education teaching plays an important role, some teachers' ideas have not been completely changed, teaching methods are not innovative, and some schools' relevant facilities are not perfect, which has a negative impact on the promotion and application of this teaching model [17]. In order to change this situation, effective teaching countermeasures should be taken in combination with the actual situation of physical education teaching.

2.2. Analysis of the Research Background of Leisure Sports. For a long time, people have had a traditional idea that learning is the only valuable behavior and leisure is despised by people because it cannot directly create use-value. Therefore, people think that study (work) is valuable and is recognized and advocated by society, while leisure life is considered to be worthless, so it is denied and spurned by society. This view of learning as opposed to leisure is biased, because people who only know how to study but do not how to relax will not know the joy of life, and people who only know how to relax but do not how to learn [18] cannot reflect on their own value. Through education, we can guide people to correctly understand leisure, scientifically manage leisure, and form a good outlook on life and a healthy outlook on leisure. If the social environment is only a potential and macroeffect on students' leisure life, then, as the direct external environment of students' life, the impact of the education process and school on their leisure life is decisive in a sense [19]. The educational goal not only makes the educators master the means to seek survival but also realizes the self-creation, self-development, and self-realization of sustainable development. Going to school has become a poor survival tool and employment weight for students, causing students to only pay attention to the utilitarian purpose of external nothingness and ignore the real value of internal life [20]. The analysis of the leisure sports research background is shown in Figure 2.

In recent years, various schools have organized and carried out a variety of sports activities. These activities can be regarded as some effective attempts to enrich students' spare time life, but so many activities and attempts are still difficult to effectively eliminate students' boredom in their spare time. The key reason lies in the inherent defects of these activities [21]. In terms of guiding ideology, it takes "filling" students' leisure time and preventing students from "doing nothing" as its main value orientation but does not give comprehensive attention to the spiritual field from the perspective of human nature and the all-round development of students' personality and personality. The education day focuses on specific entertainment projects and activities, focuses on cultivating students' entertainment skills, and ignores the education of students' leisure values and healthy leisure lifestyle [22]. Help students analyze the value attitude and behavior of various leisure lives, help them establish their own leisure lifestyle, and thus ignore the formation of students' correct leisure values. As the main body of leisure life, students themselves should also bear the responsibility of not shirking. Under the background of social utilitarianism, the lack of "leisure education" in schools leads to the instrumentalism tendency of students' leisure values [23]. Because students cannot deeply understand the significance of leisure life for personality improvement and development, they can only deal with leisure time in the sense of means. At best, a leisure life is just a tool and transition for better learning. But we know that everyone's life includes not only the learning process of self-development but also the leisure process of self-recovery and healthy development. Therefore, people are not machines, but a mixture of flesh and blood and feelings [24]. Each life should become a part of the overall life, and these lives should develop in a balanced way.

Through education, people should also realize that leisure is not equal to simple material consumption and some sensory stimulation, but a positive attitude towards life and active preparation for life activities. As a kind of realistic existence, leisure is first expressed through people's own external forms and is determined by the cultural style, lifestyle, and value orientation established by people in a specific historical period for their life process and life ideals [25]. Under the condition of increasing leisure time, we should fully develop leisure education with the theme of leisure form and improve the civilized utilization of leisure time from the height of world outlook, the content of life, the structure of life, and ideas, so as to closely combine with the improvement of subject quality and reconstruct a new leisure concept different from the past. Objectively speaking, it is free time and free activities, which means that you have the right to autonomy [26]. You can freely choose leisure activities that are suitable for you according to your own wishes, physique, hobbies, income, etc., and independently

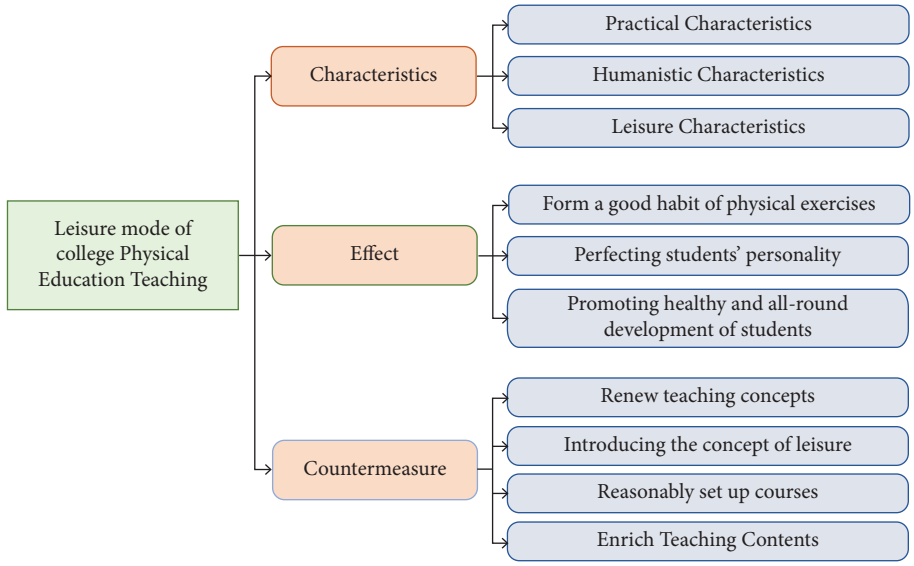

Figure 1: Leisure modes of college physical education teaching.

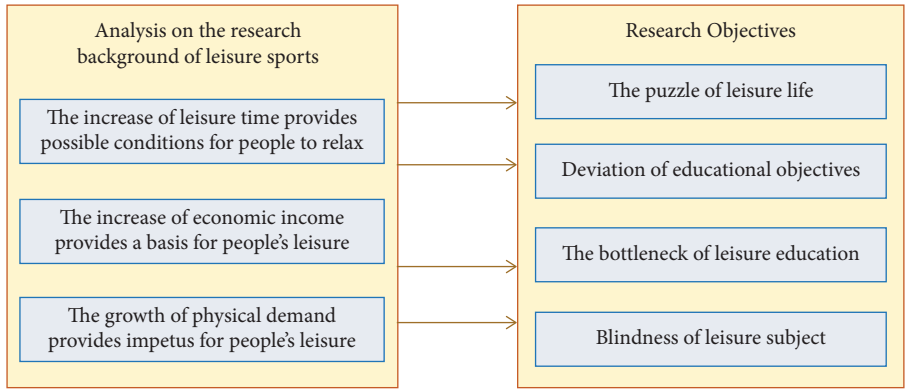

Figure 2: The analysis of the leisure sports research background.

determine your leisure goals. Subjectively, it refers to the freedom of sports experience, which is the easiest factor to identify leisure activities.

2.3. Multisensor Fusion Technology. Human activity recognition (HAR) has become an important research field. In recent years, with the development of sensor technology and the reduction of sensor equipment costs, a variety of sensors have been widely used in human activity recognition. This is mainly because the ability of a single sensor of recognizing human activities is limited. Multiple sensors can provide more recognition ability. More complex activities can be identified by processing and analyzing the data collected by various sensors [27]. With the progress of science and technology and the increase in demand, it is urgent to identify complex activities through the data collected by a variety of sensors. Using a multisensor for activity recognition, we can perceive the context information of human activities and infer fine-grained activities more accurately. However, when using multiple sensors for activity recognition, some sensor data play a positive role in promoting the activity recognition model, while others may have a negative impact on the learning process [28]. And when using multiple sensors for activity recognition, some sensors do not work on some activities; some redundant data will increase the amount of calculation and may also lead to the overfitting phenomenon and deteriorate the performance of the classification model. Therefore, multisensor data fusion is of great significance.

Based on multisensor human activity recognition, it is necessary to fuse the data collected by the multisensor [29]. Researchers have proposed different data fusion strategies for multisensor data fusion but using traditional machine learning methods for data fusion; each data fusion strategy has its own advantages and disadvantages. Deep learning technology is expected to meet the requirements of multisensor activity recognition. First, the performance of the deep learning method is better than the existing recognition techniques. Secondly, the deep learning method has the potential to discover the characteristics related to human movement [30]. The deep neural network is from simple motion features in the lower layer to more complex motion features in the upper layer, which may help to extend the

activity recognition to more complex activity recognition. At present, many researchers use deep learning methods to automatically extract features directly from the original data of sensors, reduce the dependence on manual feature extraction, improve model accuracy, and provide more useful judgments for activity classification [31]. Sensors have extensively been used in different domains for real-time time collections and modeling for decision-making [32–34]. Nowadays, most methods use scripts to collect data. The collected data is not in the state of people's complete natural activities. Most of them complete several actions in the laboratory according to the regulations, which is different from those in real life [35, 36]. This leads to the high accuracy of the experiment, but it is not optimistic to apply it to real life. Therefore, it is of great significance to collect and use complex activity data that are completely free from the specified constraints and to improve the accuracy of complex identification.

Table 1 summarizes some of the recent works in the area of leisure and sports activities and its impacts on physical health, social behavior, economy, etc.

3. Design of Application Model

We introduce a deep neural network for automatic feature extraction and feature association and extend three different data fusion strategies to deep learning. In this section, we discuss the data fusion strategy, data preprocessing, and the deep learning method for data fusion.

3.1. Data Fusion Strategy. Data fusion is to integrate the data collected by multiple mobile and wearable sensor devices to improve the accuracy, reliability, and generalization of the activity recognition system. For heterogeneous sensors, feature level and decision level fusion methods are mainly used. The multisensor data fusion strategy is shown in Figure 3.

The multisensor fusion of human activity recognition is to integrate the data collected by multiple mobile sensors or wearable sensors for human activity recognition, so as to improve the reliability of complex activity recognition in daily life. Data level fusion is the lowest level fusion method. It combines the original data of multiple sensors to make the data communication, storage, and processing of sensors more reliable and efficient. The decision level fusion method is to put different sensor data features into the corresponding learning algorithm and fuse the learning results of multiple classifiers. However, decision-making level data fusion cannot well learn the impact of the relationship between different sensor features on activity recognition. This method assigns the same weight to each sensor data.

The decision level weight data fusion method uses the idea of integrated learning. This method takes the output of a series of models as the input of the next model so that the hierarchical superposition of models can be realized. Compared with other fusion methods, the decision level weight data fusion method assigns different weights to each sensor data through a learning model to get the final classification results.

3.2. Data Preprocessing. The original sensor data may have some problems such as incomplete data and abnormal values. Data preprocessing mainly includes missing value processing, category imbalance processing, data normalization, and data division. Data normalization is mainly about scaling all data in proportion. Zero mean normalization is also called standard deviation normalization. The specific formula is

$$x^* = \frac{x - \overline{x}}{\sigma}. \tag{1}$$

The subsequent interpolation method is the mean interpolation method. According to the type of attribute, the mean value of the attribute is used for interpolation. Smote algorithm is adopted as oversampling method, which can prevent overfitting phenomenon compared with randomly copying some samples. The specific formula is

$$x_{new} = x + rand(0, 1) * |x - nx|. \tag{2}$$

Then, the original data of the sensor is segmented, and the time data of the sensor is segmented in time order by using the sliding time window. After using the sliding window to divide the original sensor data, it is necessary to manually extract the features of each segment of data. Feature extraction of original data can reduce the computing time and complexity and can improve the effectiveness of activity recognition.

3.3. Data Fusion Method Based on Deep Learning. It is found that, by using the traditional machine learning algorithm, each fusion strategy has its own advantages and disadvantages and cannot correlate the feature relationship between multiple sensor data well. Therefore, deep neural network is introduced for automatic feature extraction and feature association. This section extends the three data fusion strategies in the previous chapter to deep learning. Using the superposition ability and high-level feature abstraction ability of a convolutional neural network, a data fusion strategy based on CNN is proposed. The specific structure is shown in Figure 4.

Using the feature level data strategy, the original data of each sensor is merged together as the input of the neural network. After convolution layers, each layer automatically extracts the features of the original data of the sensor through the calculation of the convolution kernel and obtains the feature map represented by depth features. Then, the depth feature map is spread through a full connection layer, and, finally, the classification results are obtained through a layer. This scheme has fewer parameters and less calculation time. One level of late fusion: combine the depth characteristic maps of each sensor to get a large characteristic map. This is used as the input of the full connection layer to spread out the depth characteristic map. Finally, Softmax is used for classification. Two-level late fusion:

Table 1: Related work.

Ref.	Description	Area of focus	Framework/method used	Findings/conclusion
[9]	Main needs of adult individuals regarding leisure sports activities	Sports	Questionnaire and data analysis	Different sports are practiced for different needs and help maintain physical, social, and psychological progress
[11]	To explore how the work burden affected leisure sports and exercises during covid-19	Sports and exercises	Survey and data analysis	Sports and exercises time of working mothers were reduced more than the working fathers
[13]	To analyze physical activities and their relationship with psychological, behavioral, and biological factors	Physical activities in children of age 10–16	Survey and data analysis using linear regression	Physical activities are related to factors such as gender, friendship, fitness, and siblings and help in formulating strategies for PA promotion
[15]	A study of the link between exercise addiction, harmonious passion, obsessive passion, and dedication to sports	Sports and exercises	Questionnaire and data analysis	Team athletes were found to have greater harmonious passions and dedication to sports than the individual athletes
[16]	Physical activities in children of age between 6 and 18 years	Physical and recreational activities	Data analysis by a group of researchers	Physical activities have diverse effects on children's fitness, cognitive skills, engagement, and psychological development
[17]	A study to determine how leisure activities can contribute to life satisfaction	Leisure activities and social life	Regression models	Leisure activities have a good impact on life satisfaction while use of TV and internet adversely affects it
[18]	A study about the impact of covid-19 pandemic on sports leisure and recreation retailers	Leisure and recreation stores and customers	Survey and data analysis (analysis of variance)	They conclude that the pandemic had a bad impact on these stores and put forward a number of solutions
[19]	A study about the perceptions of individuals about outdoor sports who participate in leisure activities	Leisure activities and social life	Survey and data analysis	Leisure activities are preferred when there is opportunity. Leisure time spent in nature is effective in reducing stress
[21]	A study on the impact of leisure activities on the satisfaction with family relationship in children	Leisure activities and social life	Survey and data analysis (frequency, *t*-test, and ANOVA)	Adolescents participating in leisure activities had a greater satisfaction with family relationships. Parental participation group has a higher impact on satisfaction

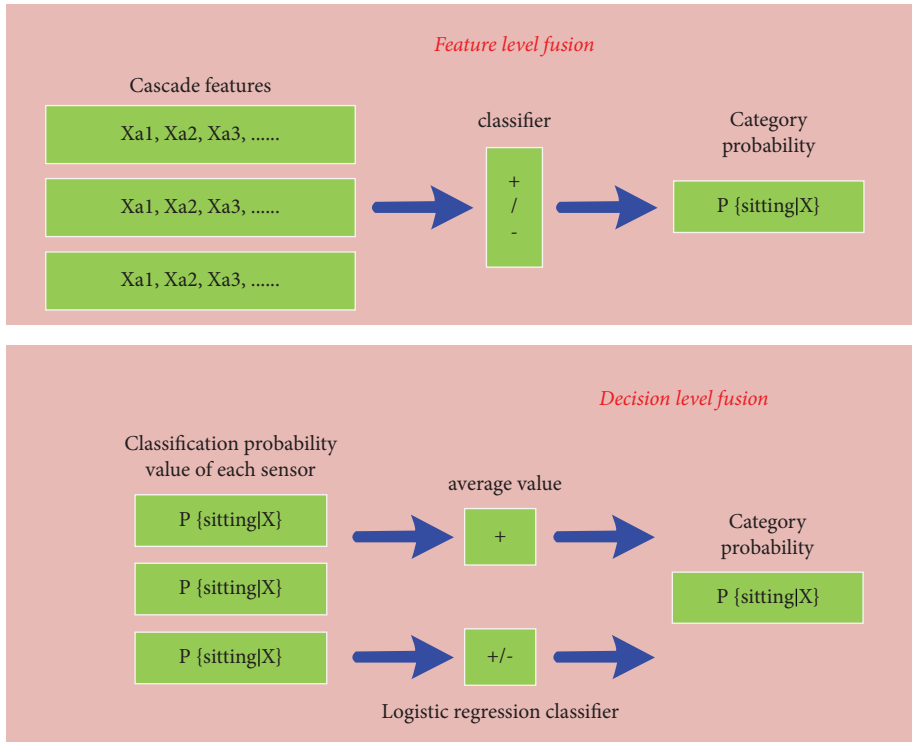

Figure 3: The multisensor data fusion strategy.

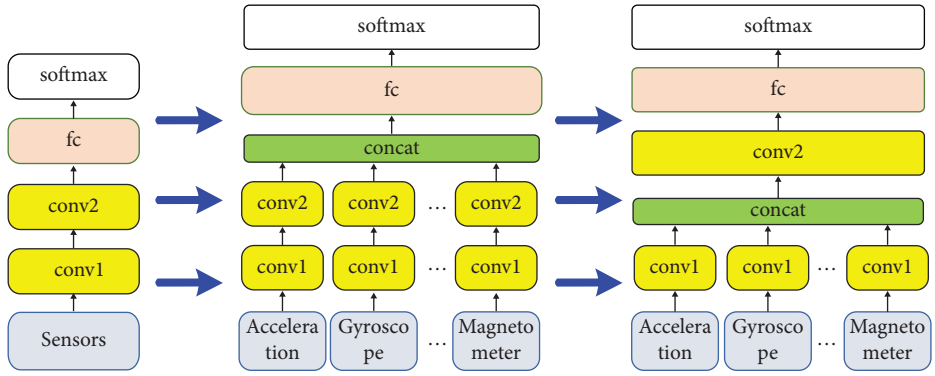

Figure 4: Data fusion network model based on CNN.

merge the depth feature map of each sensor data and then extract the relationship between the features of different sensor data through a neural network.

4. Experiments and Results

We used the data set published by the University of California for training and testing the proposed model and compared our approach with traditional machine learning approach. This section discusses the data set, the experiments, and the results in detail.

4.1. Data Set Introduction. The data set used in this paper is the data set published by the University of California. It is the data collected under the condition that the human body is completely unconstrained and it includes not only simple basic activities but also many complex activities with context labels. The data set is completely derived from the real activities of human daily life. Multiple sensors sense the state of the human body from different dimensions, and the data can complement each other. In order to improve the recognition accuracy of complex human activities, the data set is further analyzed and processed. The statistics of sensor data volume is shown in Table 2.

The tags of the data set are complex activity tags with context information. Many of them are concurrent complex activities that occur at the same time, which are closer to the activities that occur in real life. According to the concurrent complex activities, these activities are divided into two groups. Each group includes a kind of atomic activity. The first group is periodic basic activities, which are activities that often occur in life and last a long time. The second group is a special nonperiodic complex activity with poor periodicity and short duration, which is often carried out at the same time as the first group. The specific activity categories of the two groups and the proportion of each activity in the total data volume are shown in Table 3.

Based on the above analysis of the data set, the next section will further deal with the data set to solve the problems of missing values and unbalanced categories and prepare for more effective identification of subsequent activities.

4.2. Effect of Multisensor Data Acquisition. According to the structure of three data fusion deep convolution neural network models, each model is trained with the above-mentioned public data set. After constructing the network model, the model needs to be trained, and the loss function uses the cross-entropy loss function. The optimization function used in reverse gradient descent is the Adam function, where the learning rate is set to 0.0001. During training, the mini-batch gradient descent method is used to improve the training speed of the model. In the model training, the super parameters of the convolutional neural network are tested. Different structures of convolution layers from two to eight are tested. The experimental test results are shown in Table 4 and Figure 5. Through experimental comparison and analysis, a better effect is achieved when the number of convolution layers is 6. Each convolution layer uses 128 convolution cores, the size of each convolution core is set to (1, 3), and the dropout ratio is set to 0.5.

In order to verify the effectiveness of the data fusion method based on CNN for activity recognition. The data fusion strategy based on traditional machine learning proposed in Chapter 2 is taken as the baseline model and compared with the data fusion method based on CNN. The results are shown in Figure 6.

It can be found from Figure 6 that the data fusion method based on CNN has higher accuracy in activity recognition than the data fusion method based on a traditional machine learning algorithm. Therefore, it can be shown that the deep neural network can greatly improve the accuracy of activity recognition and also verify the advantages of deep learning over traditional machine learning in human activity recognition.

4.3. Application of Multisensor Fusion Technology in Physical Sports Course. In the control group, 27 boys and 23 girls were randomly selected from three classes in a middle school. There were 24 boys and 26 girls in the experimental group. There were 25 boys and 25 girls in the blank group. All the students in the experimental group used the leisure sports teaching method of multisensor fusion. Before all the experiments, the physical fitness of the control group, the experimental group, and the blank group was tested. At the

Table 2: The statistics of sensor data volume.

Sensors	Acc (Hz)	Gyro (Hz)	Magn (Hz)	Watch ACC (Hz)	GPS (Hz)	Audio
Sampling frequency	40	40	40	25	40	13MFCC

Table 3: Activity type and distribution.

Periodic activities	Distribution (%)	Aperiodic activity	Distribution (%)
Sit	24.7	Basketball	4.1
Stand	40.1	Football	1.6
Walk	12.3	Tennis	1.3
Run	20.36	Volleyball	0.68
Ride	1.64	Table tennis	0.29

Table 4: Statistical table of convolution layer pair recognition accuracy.

Number of layers		2	3	4	5	6	7	8
Recognition accuracy	EF	0.83	0.84	0.84	0.86	0.86	0.87	0.88
	OLLF	0.84	0.83	0.84	0.85	0.86	0.86	0.87
	TLLF	0.85	0.86	0.87	0.87	0.88	0.89	0.90

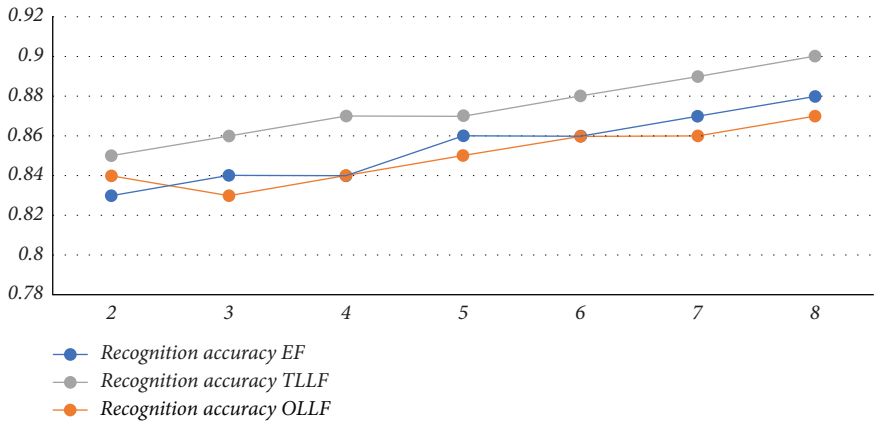

Figure 5: Influence of convolution layers on recognition accuracy.

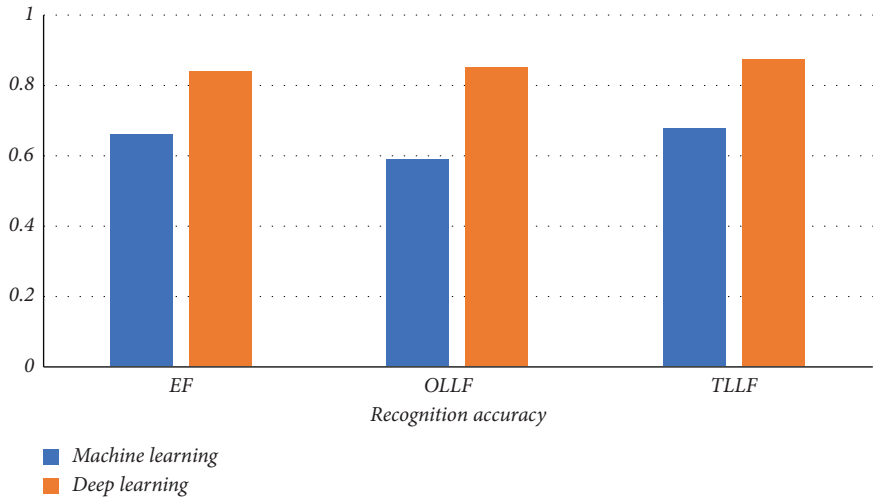

Figure 6: Comparison of activity recognition accuracy of different data fusion.

Table 5: Comparison of physical test data of boys in the control group.

Project	Before experiment	After experiment
Height	170.21 ± 7.94	173.13 ± 7.86
Weight	58.5 ± 10.95	58.25 ± 8.35
Vital capacity	2922.34 ± 818.41	3311.04 ± 811.03
50 m running	9.18 ± 1.13	8.42 ± 0.97
Standing jump	177.59 ± 29.37	189.66 ± 29.54

Table 6: Comparison of physical test data of girls in the control group.

Project	Before experiment	After experiment
Height	161.87 ± 5.22	164.14 ± 5.98
Weight	55.50 ± 6.97	55.64 ± 6.26
Vital capacity	2608.14 ± 561.41	3106.40 ± 774.48
50 m running	9.51 ± 1.00	8.87 ± 0.60
Standing jump	165.43 ± 13.16	168.26 ± 23.34

end of all experiments, the physical fitness of the control group, the experimental group, and the blank group was also tested, and the data before and after the whole experiment were collated and summarized. There was no significant difference in the physical fitness test data before the experiment. Tables 5 and 6 show the comparison results of sports data before and after the control group.

It can be seen that the students in both the experimental group and the control group, using the leisure sports teaching method of multisensor fusion, have greatly improved their physical fitness compared with that before training.

5. Conclusion

With the continuous improvement of social productivity and the rapid development of science and technology, people have more leisure time than ever before, which provides an essential basic condition for people to participate in leisure activities. The study of leisure sports in China is still in its infancy and has not yet formed a systematic research framework and complete research content. Leisure physical education courses are designed to meet the needs of social development, meet students' leisure needs, enable students to fully absorb the nutrition of sports, and promote their living ability. This paper builds a leisure physical education teaching model based on multisensor fusion. Firstly, it summarizes leisure sports and multisensor fusion technology and then introduces how to add multisensor technology to physical education teaching and proposes a data fusion strategy based on CNN. A number of experiments were performed using the deep learning-based model and traditional learning and the experimental results verify the effectiveness of the model. The deep learning-based model outperforms the traditional learning-based approach. The connotation of sports leisure and entertainment and the content of talent training mode is clarified, which lays a theoretical foundation for the following research.

Effectiveness of the proposed model may be tested by performing experiments on larger scale, involving more participants in the process and using other deep learning models. The basic goal of physical education is to cultivate students' comprehensive quality in all aspects, that is, to cultivate people with all-around development. Therefore, the establishment of a new leisure sports discipline system with a depth of theoretical courses and breadth of technical courses can truly achieve the educational goal of leisure sports. Physical education teachers, as the main body of physical education reform, play an important role in teaching activities. As far as schools are concerned, they should strengthen the training of physical education teachers and timely adjust the training objectives of physical education teachers.

Data Availability

The data sets used during the current study are available from the author upon reasonable request.

Conflicts of Interest

The author declares that he has no conflicts of interest.

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