

# Design of Sports Decision Model Based on Data Mining and Neural Network

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**Abstract:**In our country, the physical training of college students is mainly based on classroom learning and supplemented by amateur exercise. It is basically in a disordered state. There are many unreasonable factors that cannot meet the needs of college students to improve their physical fitness. My country's traditional sports industry of college students' sports a new way of dissemination of sports information has emerged because of sports-related data deep mining, and the sports evaluation decision-making support system is optimized. Based on data modeling and factor analysis of sports, summing up 8 winning factors, this paper studies the design of sports decision-making model.

**Keywords:** Sports Decision Model, Data Mining, Neural Network, Big Data

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## 1. INTRODUCTION

The degree of mastery of translation learning has dynamic grasp and clear cognition. College English teachers should deeply learn and understand the requirements of translation courses from the course structure and macro level, and constantly update the information mode of translation course teaching, so that college English teachers can truly become participants and implementers of college English translation course teaching information reforms [1-6].

Data mining technology and information processing technology are used to make intelligent decision-making for sports evaluation. Through the data collection of sports related information and sports performance summary of athletes in the early stage, it provides data support for athletes' next training. Therefore, research on sports evaluation decision support system has positive significance in improving the scientificity and rationality of sports training [7-11].

The sports training of professional athletes attaches great importance to training and scientific research, and has a relatively complete scientific training system, such as a team of high-level professional coaches, comprehensive evaluation groups such as physiology, biochemistry, and psychology, medical supervision, and information exchange, Life management and other groups as a guarantee. However, the management of sports training for college students is far from reaching such a high level. In my country, college students' sports are generally based on physical classroom learning and amateur exercises, which are basically in a state of disorder, which cannot achieve the goal of my country's physical education "to strengthen students' physical fitness, promote physical and mental development, and train students to engage in the awareness, interest, habits and ability of sports, improve sports literacy, and lay a good foundation for lifelong sports." [12-16]

But the system is a highly complex intelligent data analysis and processing platform, and its core technology is the precise recognition technology of human posture. In recent years, human gesture recognition technology has gradually matured, and the key parameters to measure the performance of gesture

recognition algorithms are real-time and accuracy [1]. With the development of artificial intelligence technology, deep learning of neural network has been widely used in many fields [2]. Backpropagation (BP) neural network has the advantages of high adaptability, simple principle, and easy implementation.

Chinese scholars have developed an intelligent decision support system for sports psychological consultation and psychological training for psychological training in sports training. The system has the functions of psychological disorder type diagnosis, psychological disorder degree diagnosis, competitive mental ability diagnosis, and psychological training method selection. It realizes the organic combination of qualitative and quantitative sports psychological consultation in training, and implements systemic psychology for the whole process of athletes' physical and mental development. Consultation and training provided a reference. The sports decision-making sports evaluation system can be installed with This will reasonably allocate sports information resources the IEEE 488.2 standard, the Internet of Things protocol is constructed for sports-related information data collection, and the HP E1485A/B to meet the needs of organizations and individuals at all levels. The demand for sports information evaluation decision support. Human-computer interaction, using GNU development tools of X86 architecture for system VIX bus data collection [17-20].

Chinese scholars have also established a system model for the diagnosis and evaluation of athletes' competitive ability for individual sports, rowing and weightlifting, with the goal of exerting the best state of each factor of the competitive ability, and established the decision-making for the optimization design, simulation and regulation of the sports training process The support system, which integrates the whole process of sports training, can not only reduce the work intensity of coaches and managers, but also provide a scientific reference for coaches to control training [21-24].

Of course, when studying boxing skills and tactics training, it is necessary to systematically combine the questionnaire with the text information of books and other contents to enrich the

cognition and understanding of boxing technical and tactical training. Considering the characteristics of the current information age, online literature and research results can be used to enrich our specific understanding of boxing skills and tactics training activities. The development of any subject is not only inseparable from the names of outstanding scholars in this subject field. Chinese scholars have established a high-level intelligent support environment for decision-making in the field of sports, which provides a powerful auxiliary decision-making tool for high-level decision makers to make national macro-level sports development strategic decisions and regional departments' overall development strategy decisions.

## 2. THE PROPOSED METHODOLOGY

### 2.1 The Sports Decision Model

Sports decision prediction is a highly nonlinear prediction problem. Its input and output can be regarded as a special mapping relationship, and it is a prediction related to time series. There are data showing that neural networks have good applications in non-linear time series, and from Chapter 1, Section 2 we know that neural networks have also achieved good results in Sports decision prediction, so theoretically BP network is feasible for Sports decision prediction. Data processing, storage and determination of decision-making indicators. After the physical test data is obtained, the desensitization process is performed first, and the data of absent and exempt students are deleted at the same time, and then 7000 pieces of data are obtained. According to the "National Student Physical Health Standards" issued by the Ministry of Education, the evaluation indicators of physical fitness mainly include height, weight, lung function, endurance, reaction force, explosive force, speed, flexibility, waist and abdomen strength, latissimus dorsi strength, and upper limbs. And the strength of the lower limbs. Data processing process of sports evaluation decision support system. Since my country resumed sports, which had been suspended for nearly 28 years since 1986, the primary task at that time was to achieve a gold medal breakthrough at the 11th Beijing Asian Games. Since my country's boxing had only just recovered at that time, the foundation was poor and the level was low. In order to improve the level of my country's boxing as soon as possible, many experts from North Korea, the former Soviet Union, and Cuba were invited to teach in our country. Due to ethnicity and other reasons.

With reference to the index system, the standards for judging college students' physical fitness are divided into 7 test items: BMI (height to weight ratio), vital capacity (lung function), long-distance running (endurance, 50 meters (explosive power), sitting and lying body Front drive (flexibility), standing long jump (lower limb strength), pull-ups (upper limb strength and waist and abdomen strength, boys), sit-ups (waist and abdomen strength, girls), realize the unitization of these indicators, and complete the corresponding data in the database Table creation.

so it is usually used in gesture and action gesture recognition. Because the information provided by newspapers, magazines or horse racing websites is not consistent, the horse racing analysis and prediction provided by horse critics are also different, the background database structure of each website is also different, and the forms published on the website are also different.

### 2.2 The Data Mining

Therefore, it is difficult to be scientifically accurate when people analyze the information provided by various aspects and bet on the fastest horse they think is the fastest. To achieve rapid and accurate horse racing analysis and prediction, it is necessary to use or establish some automated tools to quickly obtain the data we want. As a specific step in the knowledge discovery process, it is a series of technologies and their applications. Or it is a collection of methods for investigating and modeling large-capacity data and the relationship between data.

And to achieve unified management of horse racing data. When analyzing and comparing a large amount of original data, remove unnecessary data redundancy, ensure the consistency of original data, obtain useful knowledge, and then use the obtained knowledge for comparison, and finally achieve accurate prediction results and realize advanced modern management of horse racing information. . When using support vector machine for stock price forecast analysis. The setting of the preset document generally includes items such as book title, author, language, unit price, subject to which the document belongs, document content, publishing house, and publication time.

Its goal is to convert large volumes of data into useful knowledge and information. At present, data mining technology has been applied in many industries and achieved certain practical results. In a certain order of priority, by setting multiple filtering conditions, the records that have participated in the same race schedule as the current match to be predicted are selected from the database by setting multiple filtering conditions, and the recorded time is regarded as t1. If not, it means that the horse has not participated in the race of the schedule, and the information of similar horses in the same shift can be used as a reference. In Len Bass's "Practice of Software Architecture", software architecture reconstruction can be divided into activities.

The so-called "Internet +" means "Internet + traditional industries". Use modern Internet information technology to infiltrate and diffuse in various sectors of social production and life, deep integration with it, and mutual application. This is not purely adding the Internet to traditional industries, but the emergence of a new social form, actively exerting the integration and optimization functions a very important part of determining the accuracy of the forecast model is how to effectively select each component of the input vector and select the analysis object fields of social production.

### 2.3 The Neural Network

The guiding role of college English teachers. More importantly, the fundamental purpose of the reform of the teaching informatization of At present, people do not know enough about the mechanism of nonlinear problems such as the fluctuation of the Shanghai Stock Exchange. Therefore, experience plays an important role. In this paper..

the daily closing price of the Shanghai Composite Index on the previous trading day is selected as the input vector, and the closing price of the next day, i.e. the first day, is selected as the analysis object. In the support vector machine, the selection of the kernel function determines the structure of the feature space, and the selection of the parameters of the kernel function affects the prediction accuracy. Generally, the fitting effect of radial basis kernel function is better than other kernel functions. Important selected parameters are as follows, This paper uses OpenPose to expand the design, which is a C++

real-time multi-person key point detection and multi-threading library based on OpenCV and Caffe is a supervised learning algorithm that is often used to train multilayer perceptrons a simple structure for people to simulate the human nervous system, the simplest analog neuron, which means that the neuron receives 2 input signals  $x_1$  and  $x_2$ , and outputs 1 output signal  $a$  after processing. The processing of a single neuron is generally a simple linear operation and a nonlinear activation, so  $w_1$  and  $w_2$  are the weight parameters corresponding to the input  $x_1$  and  $x_2$  respectively, and  $b$  is the default bias parameter, although  $b$  is not in the neuron Make it clear, but every neuron must have it.  $g$  is the activation function, a non-linear operation, it can have a variety of options, the detailed activation function will be introduced in the next section.

OpenPose provides real-time positions of 18 body joints, as shown in Figure 2. The article obtains data containing body part locations and detection confidence in JSON format. These 18 joint coordinates can fully and uniquely represent each pose and ensure low computational complexity. However, since these pixel-based descriptors will change during the geometric transformation, it is difficult to define a distance metric. This paper uses joint trajectory estimation to solve this problem. Analysis and prediction cannot be made out of thin air, it must be based on a large number of existing events and horse data.

### 3. CONCLUSIONS

In order to improve the behavior of college students' sports prediction and decision-making, data predicting is provided for the system through sports-related data mining, and the sports evaluation decision-making support system is optimized. This paper studies the design of sports decision-making model based on big data mining model and neural network algorithm. First, the necessity and function of sports decision-making models are introduced. Traditional sports decision-making models cannot adapt to the diversified sports of the new era; then the application of data mining and neural networks in sports decision-making models is analyzed; finally, a sports decision-making model is designed.

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