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Research on the Integration method of Aerobics High difficulty Movement oriented to Web Technology

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Abstract

In order to improve the ability of adaptive information fusion and scheduling of aerobics difficult movements, a Web - based aerobics integration method of high - difficulty movements is proposed to guide the training of aerobics difficult movements. Big data analysis method is used to quantify the movement characteristics of the collected aerobics high difficulty action information. According to the classification results of the characteristics of the aerobics high difficulty movement information resources, the resources allocation and adaptive motion registration are carried out. Under the background of Web technology, the fuzzy scheduling and adaptive information fusion of aerobics high difficulty movements are carried out, and the information fusion model of resource integration is constructed, and the optimization and integration of aerobics high difficulty actions are realized by fuzzy scheduling method. The simulation results show that the information fusion ability of this method for the integration of the high-difficulty movements of aerobics is better, and the ability of feature extraction for the high-difficulty movements of aerobics is better, and the ability to decompose and identify the movements is improved.

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1. Introduction

Aerobics, as a popular sport at present, is characterized by high complexity of movements and great difficulty in teaching. In the process of aerobics teaching, it is necessary to optimize and integrate the high-difficulty aerobics movements. Combined with the big data information fusion method to carry out the Web network control and information fusion of aerobics high-difficulty movements, combined with the characteristics of aerobics high-difficulty movements for movement decomposition, improve the teaching effect of aerobics high-difficulty movements. Big data analysis method is adopted for the integration of high-difficulty aerobics movements to promote the improvement of aerobics teaching classroom effect. The research on the integration method of high-difficulty aerobics movements under the background of Web technology is of great significance in promoting the improvement of aerobics teaching reform [1].

With the development of Web technology and intelligent control technology, artificial intelligence (AI) control and big data analysis technology are adopted for the integration of high-difficulty aerobics movements to improve the integration ability of high-difficulty aerobics movements [2]. On the basis of data analysis and information fusion of the integration of high-difficulty aerobics movements, the design of the integration system of high-difficulty aerobics movements is based on the application of relevant data analysis and information collection technology to analyze the correlation indexes reflecting the high-difficulty aerobics movements. Combines the technique of Web control to realize the integration of aerobics difficult moves, extract the aerobics difficult moves associated characteristics, the regularity of information fusion using rough set model and the aerobics difficult moves integration model based on support vector machine (SVM), aerobics movements of dynamic decomposition, improve the ability of integration and information fusion [3] However, there are some problems in the integration of the above methods, such as too much calculation cost and poor registration performance of movement characteristics.

In view of the above problems, this paper proposes a Web - based aerobics integration method of high - difficulty movements. Firstly, the collected high-difficulty aerobics movement information was quantitatively allocated by using big data analysis method. According to the characteristic classification results of high-difficulty aerobics movement

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information resources, the resource allocation and adaptive movement registration were carried out. Under the background of Web technology, fuzzy scheduling and adaptive information fusion of high-difficulty aerobics movements are carried out. Then, an information fusion model of resource integration is constructed, and the optimization and integration of high-difficulty aerobics movements are realized by fuzzy scheduling method. Finally, the simulation results show the superior performance of this method in improving the integration ability of calisthenics.

2. Information sampling and feature extraction of aerobics difficult movements

2.1 Aerobics advanced movement information sampling model

In order to realize the integration design of high-difficulty aerobics movement under the background of Web technology, distributed information sampling of high-difficulty aerobics movement is carried out. Under the collaborative Web network platform, multi-sensor information fusion processing method is adopted to collect the image and video information of high-difficulty aerobics movement [4]. The collected high-difficulty aerobics movement information is quantified and configured with movement characteristics by big data analysis method. The initial clustering center of multi-sensor information fusion of aerobics high-difficulty movement sampling is P_0, the distribution node density of aerobics high-difficulty movement is δ, combined with the distributed sensor dynamic networking technology, and the Web network model is constructed to realize the feature extraction and three-dimensional information reconstruction of aerobics high-difficulty movement. The detection performance curve of high-difficulty aerobics movement feature extraction was described by binary differential equation $V(x(t))$, and the singular decomposition result of movement feature was obtained:

$$V_1(x(t)) = x^T(t)Px(t) + \int_{t-d_1(t)}^{t} x^T(s)Q_1x(s)ds + \int_{t-d(t)}^{t-d_1(t)} x^T(s)Q_2x(s)ds \quad (1)$$

Denoted as：

$$k_1 = \max_{t\in I} \int_0^1 \left|G(t,s)a(s)\right| ds \quad (2)$$

$$k_2 = \max_{t\in I} \int_0^1 \left|G_s'(s,\tau)a(\tau)\right| d\tau \quad (3)$$

$$k = \max_{t\in I} \{k_1, k_2\} \quad (4)$$

$$d = \max\{2A_1, 4A_2\} \quad (5)$$

Under the generalized matrix distribution, assume $x_{n+1} = \mu x_n(1-x_n)$ is the state vector of aerobics difficult movements, m is the video characteristic component of multi-dimensional state-space aerobics with high difficulty. Video information fusion technology was used for dynamic fusion processing of high-difficulty aerobics movements, $s_i = (x_i, x_{i+\tau}, \cdots, x_{i+(m-1)\tau})^T$ is called the smooth vector field of the aerobics advanced movements. Hausdorff matrix is formed by dynamic information fusion of high-difficulty aerobics movements in the m-dimensional space. The Hausdorff matrix is reconstructed using the state space technology, and the feature sampling of high-difficulty aerobics movements is carried out under the Web technology, so as to provide accurate data input basis for the integration of high-difficulty aerobics movements [5].

2.2 Feature extraction of aerobics difficult movements

On the basis of collecting the original information of the aerobics difficult movements mentioned above, dynamic information reorganization method is adopted to extract the characteristics of the aerobics difficult movements [6]. The order of the characteristic distribution of the action is described by the partial differential equation, which is defined as:

$$O(u(\xi)) = n \quad (6)$$

There into：

$$A_1 = k\left(1 + \frac{1}{\Gamma(2-\beta)}\right) \quad (7)$$

$$A_2 = \frac{2M(\Gamma(\alpha+1) + \Gamma(\alpha)\Gamma(2-\beta))}{\Gamma(\alpha)\Gamma(\alpha+1)\Gamma(2-\beta)} \quad (8)$$

Construct multiple dynamic action feature distribution intervals, the obtained state space of resource integration is $P_n = \frac{P_0}{\delta}$, The local optimization method was adopted to conduct quantitative fusion tracking and identification of high-difficulty aerobics movements. The collected high-difficulty aerobics movement information was quantified and configured with movement characteristics using big data analysis method [7]. The state equation of dynamic feedback tracking and identification of high-difficulty aerobics movements was obtained as follows:

$$\begin{cases} x(k+1) = Ax(k) + BKx(k-\tau_k) \\ z(k) = Cx(k) + DKx(k-\tau_k) \end{cases} \quad (9)$$

There into：

$$\dot{V}_2(x(t)) = x^T(t)(R_1+R_2)x(t) - x^T(t-h)R_1x(t-h) - x^T(t-h_1)R_2x(t-h_1), \quad (10)$$

Information fusion was carried out on the characteristics of several high-difficulty aerobics movements, and correlation statistical analysis method was adopted to conduct online scheduling of high-difficulty aerobics movements [8]. In the cloud computing environment, the robustness characteristics of the calisthenics high-difficulty movements to be integrated are as follows:

$$u(t) = c_1t^{\alpha-1} + c_2t^{\alpha-2} + \cdots + c_Nt^{\alpha-N} \quad (11)$$

Among them, N is the dynamic partial differential coefficient of the integration of calisthenics difficult movements. Assume that the dynamic attribute Y of the integration of aerobics difficult movements is the dependent variable, $X_1, X_2 \cdots X_{m-1}$ is the $m-1$ independent variables of Y with Constraining characteristic factors. The empirical modal decomposition function is introduced for the unknown value of N：

$$\boldsymbol{J} = \sum_{k=0}^{\infty} [\boldsymbol{z}^{\mathrm{T}}(k)\boldsymbol{z}(k) - \gamma^2 \boldsymbol{w}^{\mathrm{T}}(k)\boldsymbol{w}(k)] \quad (12)$$

The probabilistic integration method was used to perform the balanced integration of high-difficulty aerobics movements. The leading time gap was represented by matrix C, and the

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boundary function of movement distribution was obtained to satisfy:

$$D_{0_+}^{\alpha}u(t)\in C(0,1)\cap L(0,1) \quad (13)$$

Among them , $\gamma>0$ is constant , $\boldsymbol{w}(k)\neq 0$, Then, the dynamic green function of the integration of calisthenics advanced movements is described as：

$$I_{0+}^{\alpha}D_{0+}^{\alpha}u(t)=u(t)+c_1t^{\alpha-1}+c_2t^{\alpha-2}+\cdots+c_Nt^{\alpha-N} \quad (14)$$

Among them : $c_i\in R,i=1,2\cdots N$, N is a kind of dynamic characteristic equation with homogeneous solution.Feature extraction of high-difficulty aerobics movements by adopting Pignistic transformation rules, feature extraction of high-difficulty aerobics movements by combining dynamic image fusion and feature block matching technology, Bochner-Riesz matrix model for feature extraction of high-difficulty aerobics movements is obtained:

$$m_i'([p_H,p_L])=\omega_i\times m_i([p_H,p_L])$$
$$m_i'([0,1])=\omega_i\times m_i([0,1])+1-\omega_i \quad (15)$$

When $([p_{Hj},p_{Lj}])\subseteq([p_{Hi},p_{Li}])$, $\boldsymbol{w}(k)\in L_2[0,\infty)$, then the Lyapunov function of the Web technical-based Integration of advanced aerobics movements satisfies:

$$\boldsymbol{J}\le\sum_{k=0}^{\infty}[\boldsymbol{z}^{\mathrm{T}}(k)\boldsymbol{z}(k)-\gamma^2\boldsymbol{w}^{\mathrm{T}}(k)\boldsymbol{w}(k)+\Delta\boldsymbol{V}_k] \quad (16)$$

By using the Schur complement property：

$$\boldsymbol{J}\le\boldsymbol{\Phi}_2(k)\boldsymbol{U}\boldsymbol{\Phi}_2^{T}(k) \quad (17)$$

According to Lyapunov stability principle, it is obtained that the extracted characteristic parameters of aerobics high-difficulty movements have steady-state periodic solutions. Combined with the characteristic classification results, resource allocation and adaptive movement registration are carried out to improve the dynamic integration ability of movements.

3. Integration and optimization of advanced aerobics movements

3.1 Fuzzy information fusion processing of aerobics difficult movements

On the basis of information sampling and feature extraction of aerobics difficult movements, the integration and optimization design of aerobics difficult movements is carried out. In this paper, an integration method of aerobics difficult movements based on Web technology is proposed. According to the distribution of information resources of aerobics difficult movements, the feature classification was carried out [9]. Under the zero initial condition, the continuous functional matrix of aerobics difficult movements' classification was:

$$U=\begin{bmatrix}\bar{A}^TP\bar{A}-P+K^TRK+C^TC & \bar{A}^TP\bar{B}+C^TD & \bar{A}^TPF_1+C^TF_2\\ \bar{B}^TP\bar{A}+D^TC & \bar{B}^TP\bar{B}-R+D^TD & \bar{B}^TPF_1+D^TF_2\\ F_1^TP\bar{A}+F_2^TC & F_1^TP\bar{B}+F_2^TD & F_1^TPF_1+F_2^TF_2-\gamma^2I\end{bmatrix} \quad (18)$$

If the inequality $\boldsymbol{U}<0$ is established, the boundary value of the information resource allocation of aerobics difficult movements is solved, and partial differential equation is constructed for the equilibrium stability allocation of aerobics difficult movements. , When $\boldsymbol{w}(k)=0$, the equilibrium point of the partial differential equation is determined by approximate linear method, and the ontology model of the integration of aerobics difficult movements is described as follows:

$$\boldsymbol{\Phi}_1=\begin{bmatrix}\boldsymbol{x}^{\mathrm{T}}(k) & \boldsymbol{x}^{\mathrm{T}}(k-\tau_k)\boldsymbol{K}^{\mathrm{T}}\end{bmatrix} \quad (19)$$

$$\boldsymbol{\Pi}_1=\begin{bmatrix}\bar{\boldsymbol{A}}^{\mathrm{T}}\boldsymbol{P}\bar{\boldsymbol{A}}-\boldsymbol{P}+\boldsymbol{K}^{\mathrm{T}}\boldsymbol{R}\boldsymbol{K} & \bar{\boldsymbol{A}}^{\mathrm{T}}\boldsymbol{P}\bar{\boldsymbol{B}}\\ \bar{\boldsymbol{B}}^{\mathrm{T}}\boldsymbol{P}\bar{\boldsymbol{A}} & \bar{\boldsymbol{B}}^{\mathrm{T}}\boldsymbol{P}\bar{\boldsymbol{B}}-\boldsymbol{R}\end{bmatrix} \quad (20)$$

By using correlation detection method, the distributed link set of aerobics high-difficulty movements in the Web resource database can be obtained to meet the following requirements: $\boldsymbol{P}\in\mathrm{R}^{n\times n}$ 、 $\boldsymbol{R}\in\mathrm{R}^{m\times m}$ and $\boldsymbol{H}\in\mathrm{R}^{m\times n}$ .Let the dynamic characteristic index set of the integration of aerobics difficult movements be defined as:

$$\begin{cases}\dfrac{p_H-p_L}{1-0}\times m_i([0,1])+m_i([[p_L,p_H]])=C_i\\ m_i([p_L,p_H])+m_i([0,1])=1\end{cases} \quad (21)$$

Then, the joint characteristic distribution matrix of the action satisfies:

$$\begin{bmatrix}\bar{A}^TP\bar{A}-P+K^TRK & \bar{A}^TP\bar{B}\\ \bar{B}^TP\bar{A} & \bar{B}^TP\bar{B}-R\end{bmatrix}<0 \quad (22)$$

According to the above analysis, fuzzy scheduling and adaptive information fusion of high-difficulty aerobics movements are carried out under the background of Web technology to improve the ability of fuzzy recognition of high-difficulty aerobics movements.

3.2 High difficulty aerobics movement conformity output

To construct the information fusion model of calisthenics difficult movement integration and obtain the equilibrium solution of calisthenics difficult movement is bounded, when $\boldsymbol{w}(k)\neq 0$, satisfies：

$$\Delta\boldsymbol{V}_k=\boldsymbol{\Phi}_2\boldsymbol{\Pi}_2\boldsymbol{\Phi}_2^{\mathrm{T}}<0 \quad (23)$$

$$\boldsymbol{\Phi}_2=\begin{bmatrix}\boldsymbol{x}^{\mathrm{T}}(k) & \boldsymbol{x}^{\mathrm{T}}(k-\tau_k)\boldsymbol{K}^{\mathrm{T}} & \boldsymbol{w}^{\mathrm{T}}(k)\end{bmatrix} \quad (24)$$

$$\boldsymbol{\Pi}_2=\begin{bmatrix}\bar{\boldsymbol{A}}^{\mathrm{T}}\boldsymbol{P}\bar{\boldsymbol{A}}-\boldsymbol{P}+\boldsymbol{K}^{\mathrm{T}}\boldsymbol{R}\boldsymbol{K} & \bar{\boldsymbol{A}}^{\mathrm{T}}\boldsymbol{P}\bar{\boldsymbol{B}} & \bar{\boldsymbol{A}}^{\mathrm{T}}\boldsymbol{P}\boldsymbol{F}_1\\ \bar{\boldsymbol{B}}^{\mathrm{T}}\boldsymbol{P}\bar{\boldsymbol{A}} & \bar{\boldsymbol{B}}^{\mathrm{T}}\boldsymbol{P}\bar{\boldsymbol{B}}-\boldsymbol{R} & \bar{\boldsymbol{B}}^{\mathrm{T}}\boldsymbol{P}\boldsymbol{F}_1\\ \boldsymbol{F}_1^{\mathrm{T}}\boldsymbol{P}\bar{\boldsymbol{A}} & \boldsymbol{F}_1^{\mathrm{T}}\boldsymbol{P}\bar{\boldsymbol{B}} & \boldsymbol{F}_1^{\mathrm{T}}\boldsymbol{P}\boldsymbol{F}_1\end{bmatrix} \quad (25)$$

Under the double boundary conditions, the second order Taylor series expansion is carried out for the integration equation of aerobics difficult movements. The stable solution of the dynamic differential equation for the integration of aerobics difficult movements meets the following conditions:

$$\begin{bmatrix}\bar{\boldsymbol{A}}^{\mathrm{T}}\boldsymbol{P}\bar{\boldsymbol{A}}-\boldsymbol{P}+\boldsymbol{K}^{\mathrm{T}}\boldsymbol{R}\boldsymbol{K} & \bar{\boldsymbol{A}}^{\mathrm{T}}\boldsymbol{P}\bar{\boldsymbol{B}} & \bar{\boldsymbol{A}}^{\mathrm{T}}\boldsymbol{P}\boldsymbol{F}_1\\ \bar{\boldsymbol{B}}^{\mathrm{T}}\boldsymbol{P}\bar{\boldsymbol{A}} & \bar{\boldsymbol{B}}^{\mathrm{T}}\boldsymbol{P}\bar{\boldsymbol{B}}-\boldsymbol{R} & \bar{\boldsymbol{B}}^{\mathrm{T}}\boldsymbol{P}\boldsymbol{F}_1\\ \boldsymbol{F}_1^{\mathrm{T}}\boldsymbol{P}\bar{\boldsymbol{A}} & \boldsymbol{F}_1^{\mathrm{T}}\boldsymbol{P}\bar{\boldsymbol{B}} & \boldsymbol{F}_1^{\mathrm{T}}\boldsymbol{P}\boldsymbol{F}_1\end{bmatrix}<0 \quad (26)$$

The adaptive motion registration method is adopted for the dynamic balance configuration of the integration of high-difficulty aerobics movements. Select the negative domain of the boundary value equilibrium solution of the random variable $(x_1,x_2,\cdots,x_n)$, and given the normal number γ , assume $x_{n+1}=\mu x_n(1-x_n)$ is the training set of high-difficulty aerobics movements, $\boldsymbol{U}<0$, and the characteristic matrix of movement integration is simplified as:

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$$\begin{bmatrix} -\boldsymbol{P}^{-1} & \bar{\boldsymbol{A}} & \bar{\boldsymbol{B}} & \boldsymbol{F}_1 & 0 \\ \bar{\boldsymbol{A}}^{\mathrm{T}} & -\boldsymbol{P}+\boldsymbol{K}^{\mathrm{T}}\boldsymbol{R}\boldsymbol{K} & 0 & 0 & \boldsymbol{C}^{\mathrm{T}} \\ \bar{\boldsymbol{B}}^{\mathrm{T}} & 0 & -\boldsymbol{R} & 0 & \boldsymbol{D}^{\mathrm{T}} \\ \boldsymbol{F}_1^{\mathrm{T}} & 0 & 0 & -\gamma^2\boldsymbol{I} & \boldsymbol{F}_2^{\mathrm{T}} \\ 0 & \boldsymbol{C} & \boldsymbol{D} & \boldsymbol{F}_2 & -\boldsymbol{I} \end{bmatrix} < 0 \quad (27)$$

In the concentration of calisthenics high-difficulty movement training, the equilibrium solution with the characteristics of stability is obtained, and the equilibrium configuration of the movement is carried out with the method of periodic steady-state adjustment, which can be obtained as follows:

$$G(C[\Delta+\kappa(\Delta)])+CT \in Dom(G)=0 \quad (28)$$

$$\lim_{x\to\infty} E[\sup\left|X(t)-y(t)\right|^p] < \lim_{x\to\infty} G^{-1}(G(c[\Delta+\kappa(\Delta)])+CT)=0 \quad (29)$$

In the face of Web technology, big data information fusion and image automatic registration methods are adopted to conduct the square fitting processing of the training set of high-difficulty aerobics movements [10]. According to the balance processing results of movements, the dynamic segmentation matrix is obtained as follows:

$$\boldsymbol{K}=\begin{bmatrix} \boldsymbol{I} & 0 & 0 & 0 & 0 & 0 \\ 0 & \boldsymbol{P}^{-1} & 0 & 0 & 0 & 0 \\ 0 & 0 & \boldsymbol{I} & 0 & 0 & 0 \\ 0 & 0 & 0 & \boldsymbol{I} & 0 & 0 \\ 0 & 0 & 0 & 0 & \boldsymbol{I} & 0 \\ 0 & 0 & 0 & 0 & 0 & \boldsymbol{I} \end{bmatrix} \quad (30)$$

By solving the equation to determine the coefficient C_k and introducing the differential evolution matrix, the fuzzy scheduling inequality integrating the high-difficulty aerobics movements can be transformed into:

$$\begin{bmatrix} -\boldsymbol{P}^{-1}+\varepsilon\boldsymbol{G}\boldsymbol{G}^{\mathrm{T}}+\boldsymbol{B}\boldsymbol{R}^{-1}\boldsymbol{B}^{\mathrm{T}} & \boldsymbol{A}\boldsymbol{P}^{-1} & \boldsymbol{F}_1 \\ \boldsymbol{P}^{-1}\boldsymbol{A}^{\mathrm{T}} & -\boldsymbol{P}^{-1} & 0 \\ \boldsymbol{F}_1^{\mathrm{T}} & 0 & -\gamma^2\boldsymbol{I} \\ \boldsymbol{D}\boldsymbol{R}^{-1}\boldsymbol{B}^{\mathrm{T}} & \boldsymbol{C}\boldsymbol{P}^{-1} & \boldsymbol{F}_2 \\ \boldsymbol{B}_1\boldsymbol{R}^{-1}\boldsymbol{B}^{\mathrm{T}} & \boldsymbol{A}_1\boldsymbol{P}^{-1} & 0 \\ 0 & \boldsymbol{K}\boldsymbol{P}^{-1} & 0 \end{bmatrix}$$

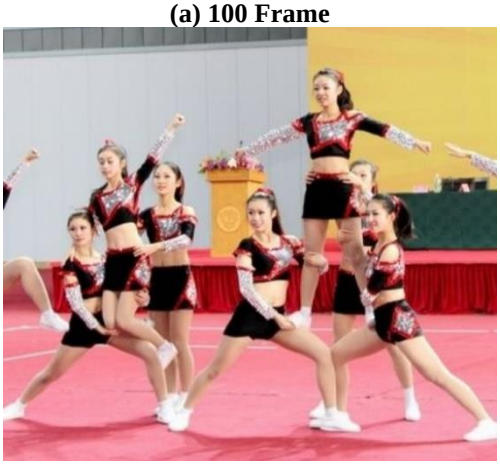
$$\begin{bmatrix} \boldsymbol{B}\boldsymbol{R}^{-1}\boldsymbol{D}^{\mathrm{T}} & \boldsymbol{B}\boldsymbol{R}^{-1}\boldsymbol{B}_1^{\mathrm{T}} & 0 \\ \boldsymbol{P}^{-1}\boldsymbol{C}^{\mathrm{T}} & \boldsymbol{P}^{-1}\boldsymbol{A}_1^{\mathrm{T}} & \boldsymbol{P}^{-1}\boldsymbol{K}^{\mathrm{T}} \\ \boldsymbol{F}_2^{\mathrm{T}} & 0 & 0 \\ -\boldsymbol{I}+\boldsymbol{D}\boldsymbol{R}^{-1}\boldsymbol{D}^{\mathrm{T}} & \boldsymbol{D}\boldsymbol{R}^{-1}\boldsymbol{B}_1^{\mathrm{T}} & 0 \\ \boldsymbol{B}_1\boldsymbol{R}^{-1}\boldsymbol{D}^{\mathrm{T}} & -\varepsilon\boldsymbol{I}+\boldsymbol{B}_1\boldsymbol{R}^{-1}\boldsymbol{B}_1^{\mathrm{T}} & 0 \\ 0 & 0 & -\boldsymbol{R}^{-1} \end{bmatrix} < 0 \quad (31)$$

The boundary value equilibrium solution of the integrated partial differential equation for calisthenics with high difficulty was calculated, and the characteristic registration was carried out by combining the vector distribution model.

4. Simulation experiment analysis

In order to test the application performance of this method in the integration of high-difficulty aerobics movements, a simulation experiment was conducted. The experiment was designed by Matlab7. Combined with embedded bus scheduling method, high-difficulty aerobics movement information sampling and bus transmission control are carried out. The collected high-difficulty aerobics movement characteristics are mainly image information and video information. Combined with Web information fusion technology to action of the integration of information processing, data sampling size of 300 mbit, a single set of sample data length 1024, integration of the global number of iterations for bodybuilding movements for 100 times, information integration for amplitude is $A_1=A_2=A_3=1.25$, information transformation frequency of 200 KHZ, the characteristics of the action attribute types of 12 classes, information of sampling array distribution of sensor nodes is 200 * 200. According to the above simulation environment and parameter Settings, the integration processing of high-difficulty aerobics movements was carried out, and the original high-difficulty aerobics movement image acquisition results were shown in figure 1.

(a) 100 Frame



(b) 200 Frame

Figure 1. Original calisthenics high difficulty movement image acquisition

Taking the aerobics advanced movement information sampled in figure 1 as the research object, the information integration processing was carried out to obtain the feature extraction results of advanced movement as shown in figure 2.

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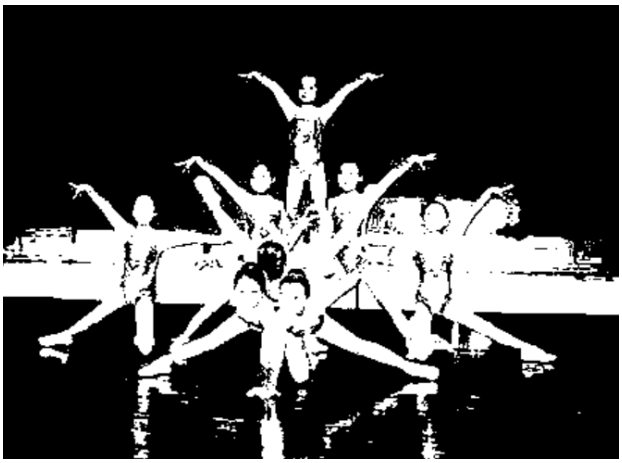
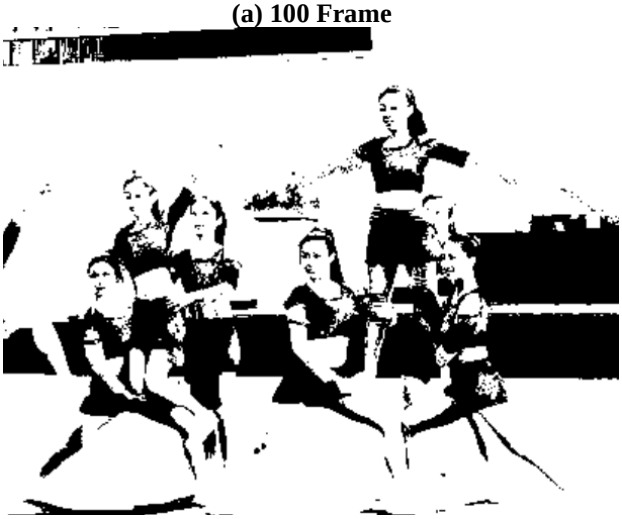


(a) 100 Frame



(b) 200 Frame

Figure 2. Feature extraction results of difficult movements

According to the feature extraction of figure 2 as a result, under the background of Web technologies in aerobics difficult moves of adaptive information fusion and fuzzy scheduling, integration results are obtained as shown in figure 3, analysis diagram 3, using the method can effectively realize the aerobics difficult moves scheduling integration and information fusion, improve the ability of action recognition and detection.

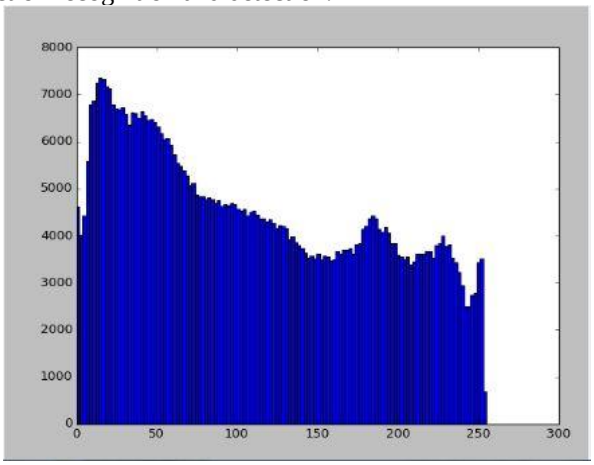


Figure 3. High difficulty aerobic movement conformity output

By testing the recognition ability of different methods for the integration of high-difficulty aerobics movements, the comparison results are shown in table 1. The analysis shows that the information fusion ability of the method for the integration of high-difficulty aerobics movements is better, the feature extraction ability of high-difficulty aerobics movements is stronger, and the decomposition and identification ability of movements are improved.

Table1 Recognition accuracy comparison of action integration

Sample Amount	100	200	300	400	500	600
The method of this paper	0.903	0.935	0.967	0.989	0.991	0.994
Traditional method	0.892	0.901	0.924	0.946	0.950	0.962

5. Conclusion

To decompose the characteristic information of calisthenics difficult movement and improve the teaching effect of calisthenics difficult movement, this paper proposes an integrated method of calisthenics difficult movement based on Web technology. The collected high-difficulty aerobics movement information is quantitatively allocated by using big data analysis method, and the resource allocation and adaptive movement registration are carried out according to the feature classification results of high-difficulty aerobics movement information resources. Under the background of Web technology, fuzzy scheduling and adaptive information fusion of high-difficulty aerobics movements are carried out to build an information fusion model of resource integration, and the optimization and integration of high-difficulty aerobics movements are realized by fuzzy scheduling method. According to the research, the information fusion effect of the method in this paper is better, which improves the recognition and detection ability of the movements.

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