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Retraction

Retracted: Optimization of Environmental Parameters of Ice and Snow Sports Venues Based on the BP Neural Network and Wireless Communication Technology

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This article has been retracted by Hindawi following an investigation undertaken by the publisher [1].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

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

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. Li, J. An, X. Yao, and Z. Ai, "Optimization of Environmental Parameters of Ice and Snow Sports Venues Based on the BP Neural Network and Wireless Communication Technology," *Wireless Communications and Mobile Computing*, vol. 2022, Article ID 1172348, 10 pages, 2022.

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Research Article

Optimization of Environmental Parameters of Ice and Snow Sports Venues Based on the BP Neural Network and Wireless Communication Technology

Jiangtao Li,[1] Jing An,[2] Xiaolin Yao ,[3] and Zhenguo Ai[4]

[1]*School of Physical Education, University of Sanya, Sanya 572022, Hainan, China*
[2]*Recruitment and Employment Office, Harbin Sport University, Harbin 150008, Heilongjiang, China*
[3]*Institute of Sports Humanities and Society, Harbin Sport University, Harbin 150008, Heilongjiang, China*
[4]*Institute of Physical Education, Daqing Normal University, Daqing 163111, Heilongjiang, China*

Correspondence should be addressed to Xiaolin Yao; yaoxiaolin@hrbipe.edu.cn

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Ice and snow sports have become a scene of attraction nowadays. It not only encourages sports but also earns more revenue through tourism. Tourists love and admire this kind of sport because of its uniqueness, unlike other sports. The Olympic Games also conduct ice and snow sports under the Winter Olympic Sports. This kind of sport is played in ice rinks. Ice rinks are of two types, namely, natural and artificial. Natural ice rinks are formed in snowy regions, whereas artificial ice rinks can be set up anywhere with the help of technology. An artificial or natural ice rink, a sports venue, or a stadium is constructed accordingly. This research focuses on the optimization of environmental parameters of the ice and snow sports venue based on the BP neural network and wireless communication technology. There are various factors to be monitored when an indoor ice and snow sports venue is being considered. They are temperature monitoring, health monitoring of the audience, natural disaster detection and alarm in the case of natural ice rinks, and building safety concerning the climatic conditions. The proposed methodology uses BP neural networks and wireless communication technology to optimize the environmental parameters of the ice and snow sports venue. It has been demonstrated to have numerous advantages over traditional ice and snow sports methods. In this research, the convolutional BP neural network algorithm was implemented to analyse the environmental parameters of the chosen sport. The proposed algorithm is compared with the existing weighted centroid model. The results show that the proposed model has achieved an accuracy of 99.45%.

1. Introduction

A multihop wireless sensor network is comprised of a large number of low-cost sensor nodes that communicate with one another across a long distance. A few examples of industries that are impacted by this are microelectronics, wireless communication, and intelligent computer technology [1]. Through the use of the WSN terminal's extremely adjustable design, it is possible to do custom data integration and long-term data gathering tasks. World Wide Web technology can be used for a variety of applications, including ecological and environmental monitoring, tracking of biological health, and disaster preparedness and rescue [2]. Human inventiveness and study have resulted in the development of artificial intelligence (AI). Last but not least, addressing the needs of the consumer is paramount in our business [3]. Long-standing speculation has focused on the possibility of artificial intelligence, or so-called "intelligence," being utilised to perform tasks such as world interpretation and modification. All aspects of perception, including what we see, believe, and do, are intertwined with one another [4]. A person's intelligence is defined by their ability to learn new things, absorb new information, and put that learning to use in the real world. Several academics have conducted in-depth investigations into the structure of the sports industry's supply chain, sensor network linkages, and artificial intelligence [5]. The researcher investigated how communication delays affect sensor networks on mobile devices. If a sensor is to function correctly, it must follow the current closed curve. First-order dynamic features of sensors with varying maximum speeds will result in changes in the input saturation limits for those sensors [6]. Using low-gain feedback to construct distributed coverage management rules for mobile sensors is possible if the sensor and its derivative have a maximum delay. Thus, the cost function of the sensor network's coverage is minimised, and the sensor network is configured to its best advantage. When the sensor's low control gain lower limit is reached, the sensor's allowed sensor delay can be increased by lowering the lower limit [7]. According to the results of numerical testing, the proposed strategy for managing coverage is effective. Sensor networks have never been explored in this context before, but the researcher has devised a novel artificial intelligence technique that is worth mentioning [8]. Their rapid detection of circumstances that are either doubtful or affirmative assists radiologists in prioritising their tasks. By using artificial intelligence algorithms to extract this "radiological" information from photographs, the diagnostic and prognostic value of image datasets can be increased. As a result of technological advances, radiologists are becoming more open to the idea of utilising artificial intelligence in their jobs. The quality of life and diagnostic confidence of radiologists will be evaluated in relation to the employment of artificial intelligence in imaging to reduce turnaround times and improve patient outcomes [9]. In the future, the application of artificial intelligence to image analysis could represent a significant and innovative development. As medical artificial intelligence (AI) advances, radiologists may become even more important in the near future. There have been concerns raised concerning the use of artificial intelligence in radiology, despite the absence of relevant algorithms in the study. According to the researcher and his colleagues, colleges should identify and evaluate their performance in assisting the development of college and university sports companies [10]. When evaluating the achievements of collegiate sports teams, tools such as the WSR and theoretical frameworks are widely used. Expert opinions, analytic hierarchy approaches, and fuzzy comprehensive evaluation methods are all driving change in the sports business at the present time. Because of their inability to formulate clear recommendations for how to take the sports sector ahead while utilising a variety of evaluation approaches, they have been criticised. The snow and ice sports tourism industry will have assumed an essential role in advancing China's overall tourism industry as both a new tourism industry model. This paper analyses the functional optimization of the supply chain for the snow and ice sports industry based on sensor network communication and artificial intelligence to fully apply sensor network communication and artificial intelligence technology towards the innovation of the ice and snow sports industry. Let us all look for such an optimized strategy to promote the growth of the network structure of the snow and ice sports world. This paper investigates the optimization of the ice and snow sports industry's chain structure using sensor network connectivity and artificial intelligence. This paper discusses the infrastructure of sensor connectivity and uses long-term tracking of wireless communication and the adaptability of the data processing structure. Additionally, coupling with the dominance of artificial intelligence in communication processing and interpretation, to obtain along with the analysis of experimental data, is performed in this research. It introduces detailed data on artificial intelligence and the snow and ice entertainment business. The linear regression analysis method is being used in the algorithm. Tests on snow and ice public resources, sustainable competitive advantage, the approximate semiannual amount of the snow and ice sports entrepreneurship economic success index, ice but also snow sports stadiums, GDP, and thus the speed comparison and also the structure of physical education and sport were conducted as part of the implementation results.

2. Related Studies

Scientists employed artificial intelligence and sensor network connections to evaluate the supply chain for the ice and snow sports business [11]. Sensor nodes and network design are discussed in depth in the article's techniques section. We will be using grey relational analysis as our new standard operating procedure going forward. Additionally, a simulation of ice and snow city resources as well as sensor simulations is included in the experimental results part of this study. Therefore, in order to create better connected devices, this study integrates artificial intelligence with sensor network connectivity [12]. Artificial intelligence was utilised to analyse the ice and snow sports supply chains, as well as the present challenges facing the industry's expansion. Decision trees, Bayesian algorithms, and other algorithms were used in this analysis. Sensor nodes can share a common EPU, COM, CPU, and sensor hardware, among other things (SM). In order to provide additional functionality to sensor nodes, mobile device modules and positioning device modules can be employed [13]. It is possible to transmit data via signals such as pressure, smoke, speed, humidity, and heat. CPUs are commonly used in embedded systems because of their low power consumption and low cost, not to mention the programming flexibility they provide transceivers. When it comes to transceivers, there are no distinguishing characteristics. The two most common modes of functioning are receiving and emitting signals [14]. Modern transceivers consume approximately the same amount of power in idle mode as they do while they are actively transmitting or receiving signals. In order to prevent the transmitter from being used when not in use, it should be turned off completely, rather than just placed on standby. The effort required to awaken from a deep sleep and get to work is considerable. These methods, which are the most energy-efficient, can be implemented on a single-chip microcomputer. Because of its low cost and enormous storage capacity, flash memory is widely employed [15]. It is possible to memorise both reading and writing abilities. An application's memory requirements could be extremely diverse. User memory and programme memory are the two most common types of computer memory. The user's memory is used to store data that is unique to a programme or information about the user's personal preferences. Because of this limitation, the batteries in a large number of wireless sensors must be replaced. A large quantity of electricity is required for the correct operation of wireless sensor nodes [16].

Data processing and transmission utilise the most electricity, followed by sensor node sensing. A total of 10 sensors are located throughout the body. For each sensor node to be able to offer trustworthy information about the observed conditions, it must have a specific region of coverage. Apart from signal conditioning, the other tasks of sensors include signal conversion (from physical to electrical signals) and digital conversion (from analogue signals) [17]. The sensor control may, among other things, use location information to locate a node and make use of computation and storage capabilities to automatically create an efficient sensor topology and set up data integration and time synchronisation. Sensor networks allow each sensor node to detect and gather data in real time from defined areas using sensors, which then produce one or more distributed network infrastructures, depending on the level of self-organization and collaboration sought by the sensor network [18]. It is possible to determine whether it is appropriate for the sensor network in a given location to gather and interact with data from other sources by examining the first information collected from that region. The final screening and processing are done through an external network, such as the Internet or a computer centre. A wireless sensor network's data is gathered and processed by embedded sensors that consume very little power and can be found in almost any environment. In the observed area, there is a seemingly random distribution of cluster nodes [19]. Communication protocols can be updated at a convergence node, which is a node that connects a sensor network to the Internet. As a result, the management node's monitoring time can be better utilised elsewhere.

Firms that specialise in artificial intelligence platforms or engines prefer to provide custom AI solutions for specific problems [20]. Among AI players, this is a frequent piece of information. "Algorithmic procedures" followed in many smaller and medium-sized firms in China's intelligent business are devoted to the development of technology and application support, followed by the application of artificial intelligence to a diverse range of products and services across a wide range of industry sectors. By learning from data and practising, it is possible to increase the overall performance of a machine. As a result of the scarcity of ice and snow, there are significant geographic differences in the ice and snow sports businesses [21]. In order to create industrial ice and snow sports, it is necessary to live in cold climates where ice and snow can accumulate. As a result of their collaboration, international corporations have built the world's largest commercial ice and snow market, enticing people to come outside and be active during the colder months. Snow and ice storms are the most prevalent winter weather events, and they can last for several hours. In order to efficiently remove ice and snow, it is necessary to combine the efforts of all of these small businesses. As a result, they compete in a variety of ways in order to make themselves even more appealing [22]. Ice and snow sports tourism necessitates the development of three categories of resources: core, linked, and basic. Development assets and competition assets are the two most important categories of assets in the ice and snow sports tourism business, respectively. It is necessary for the industry to undergo structural transformation before it can be modernised properly. Following the transition from an agrarian economy to one that is predicated mostly on processing and manufacturing, the service sectors will take over as the dominant economic sector in postindustrial America [23]. An industrial cluster can only be considered if all of the items produced by a company fall under the purview of a single sector of the economy. Supplier-customer alliances are one method of achieving cross-industry collaboration. Numerous advantages of outsourcing include lower labour costs and the opportunity to purchase goods and services from any point along the supply chain, among other things. Small and medium-sized enterprises (SMEs) account for the vast majority of businesses around the world [24]. The products of cluster enterprises are in great demand as a result of the intense level of market competition that they face. Every company has an industrial cluster, which develops from an embryonic stage to a fully grown stage as the company expands. The value of these individuals in the classroom cannot be overstated. Traditional industrial clusters, high-tech industrial clusters, and resource-and-technology clusters are the three most common types of industrial clusters. When the production capacity and market demand elasticity are almost the same, it follows that the entire total output and profit of an economy are nearly identical as well [25]. The study focused on optimizing the environmental parameters of ice and snow sports venues based on the BP neural network and wireless communication technology.

3. Materials and Methods

The backpropagation algorithm is referred to as a machine learning algorithm that is used to train neural networks (NN). It considers the weights of the neural network an important factor. The main aspect is to properly tune the weights to reduce the error rates. By reducing the error rate, the model becomes better quality-wise. Sometimes, it can also be termed "backward propagation of errors." Nowadays, wireless communication technology dominates the world. Worldwide, it finds its application in every aspect of human life, thus enhancing and simplifying the lives of humans. Wireless network systems are those that consist of various types of sensors, smart home technologies, wireless access points, processors, etc. This technology is widely used in smart homes and the automation of factories and homes. In this proposed system, as in Figure 1, the combined application of wireless communication systems and BP neural networks to optimize the environmental parameters of ice and snow sports venues is studied.

The main advantages of using the WSN technology are represented in Figure 2, and the description of the same is as follows.

(1) Optimization of environmental parameters: the main purpose of this research is to optimize the

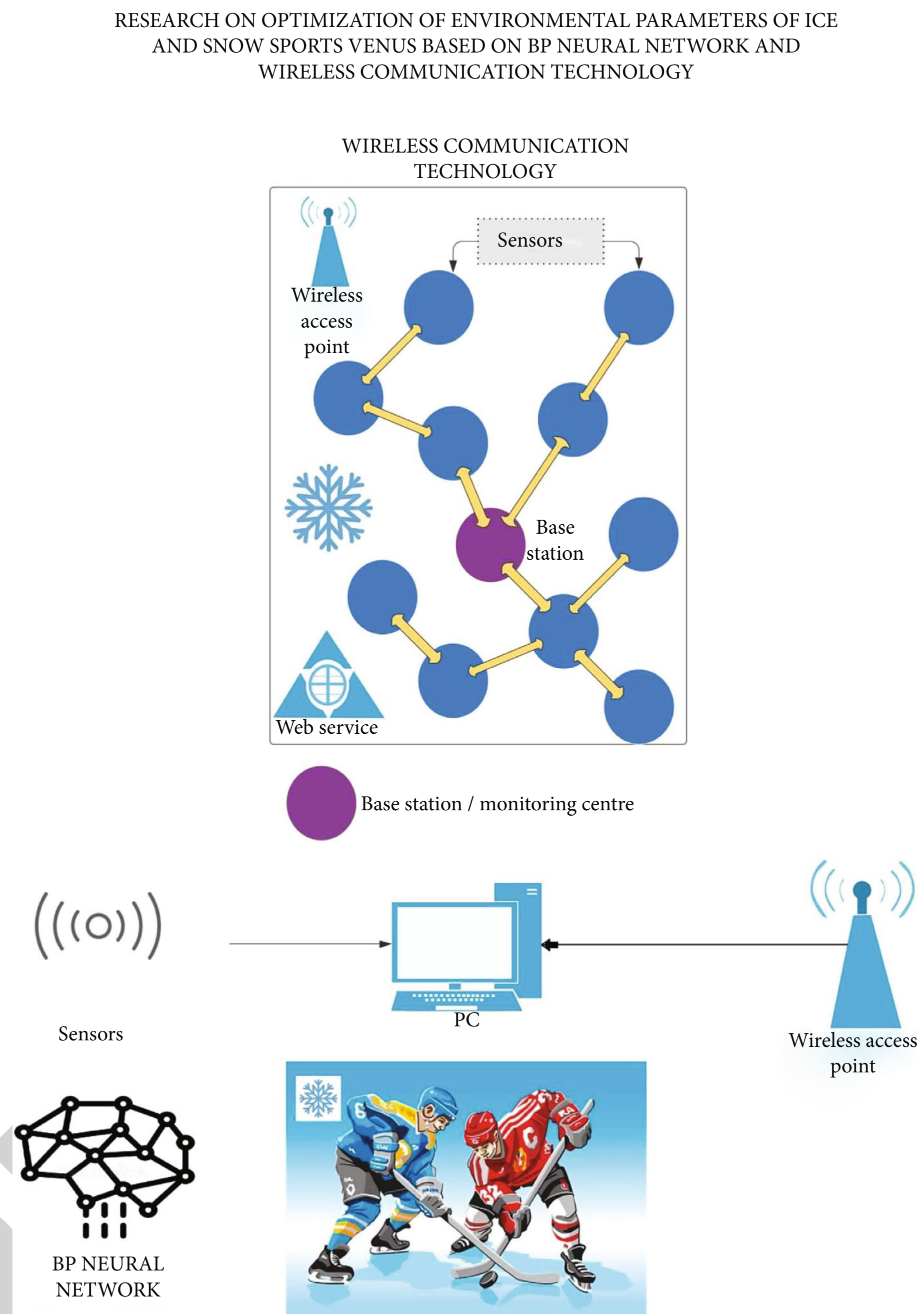

Figure 1: Proposed model for ice and snow sports.

environmental parameters. The various environmental parameters are monitored with the help of sensor technology. The monitored sensor feeds are fed into the processor and optimized with the help of artificial machine learning technology. The AI takes control of the whole sports venue/indoor ice and snow stadiums by monitoring the parameters with the sensor technology and changing the parameters according to the environment

(2) Health monitoring: the health monitoring system is an important system when any indoor stadium is considered. Proper ventilation and oxygen supply are critical in keeping people healthy in this environment. Health is assured with the help of various kinds of sensors by constantly monitoring the humidity level and temperature indoors. Various other factors are also considered in the case of health monitoring. Thus, WSN technology plays an important part in health monitoring

(3) Natural disaster detection and alarm: in the case of sports venues constructed at natural ice rinks, natural disaster detection plays a life-saving role. The

climatic conditions and weather are constantly monitored with the help of the WSN, which gets its inputs from the Internet and satellites about the weather. It predicts the case of any snow slides in the mountains and alarms the fraternity to do the needful

(4) Building safety: the safety of the building or sports venue is assured and checked with respect to the climatic changes that happen. As we have seen in natural disaster detection, the building's safety is also frequently checked by the WSN technology to keep an eye on the safety parameters

Thus, with the help of technological advancements like the BP neural network and wireless communication system, the environmental parameters are optimized.

3.1. Proposed Work. The supervised learning of such a deep neural network is similar to that of a convolutional backpropagation (CBP) algorithm, as more than four components are divided into two phases, which are as follows. The following steps represent the first stage of the forward dissemination process. (1) Choose one of the samples from the sample set and start eating it all into the network. (2) Compute the corresponding output growth. At this stage, the input data will be transformed based on the power structure but also output to the convolutional layers. During the network simulation analysis, a slight change is decided to introduce in the weight segment of each source and load to produce the desired final output. The following steps are involved in the second phase of the backpropagation learning process. As more than four components are separated into two phases, the supervised learning of this deep learning model is similar to that of a convolutional backpropagation (CBP) technique. The steps that follow are the first stage of the forward distribution procedure. Select one of the data from of the sample group and begin feeding it to the network.

(1) Calculate the deviation of actual and estimated efficiency

(2) The learning and development technique is being used to distribute and modify the weighted set

Equation (1) shows how the regression analysis in backpropagation is defined with such a training dataset (a, g, n, m):

$$K(a, g, n, m) = \frac{1}{2}\sum \left\| d_{a,g}(n) - m \right\|^2. \tag{1}$$

Equation (2) shows the overall regression analysis for classification with K measurements, where m is the actual result and d seems to be the neural network's set of all possible results.

$$K(a, g) = \frac{1}{2}\sum_{i=1}^{x} K\left(a, g, n^{(i)}, m^{(i)}\right) + \left\| d_{a,g}(n) - m \right\|. \tag{2}$$

As a whole, the logistic regression of this neural network i, j is a multiple objective function that ε often conforms to a static condition. Its training algorithm technique is used to retrain the parameters. The main goal is to compute ϑ the derivative of an observable signal's function with respect to the data vector. The alternatives for such optimization problem are given in

$$a_{i,j}^{(I)} = \sum a_{i,j}^{(I)} - \varepsilon \frac{\vartheta}{\vartheta a_{i,j}^{(I)}} J(a, g), \tag{3}$$

$$g_{i,j}^{(I)} = \sum g_{i,j}^{(I)} - \varepsilon \frac{\vartheta}{\vartheta g_{i,j}^{(I)}} J(a, g). \tag{4}$$

As such, the testing results do not yield the expected inference. The weight value but also variance must then be reproduced from the input signal to convolution or otherwise combined until each production has its parameter. Following that, weight going to attempt to update tasks is performed to start a new learning algorithm.

The $A(d, r)$ convolution phase is the process of conducting a template operation on an image that has been templated. Each p, q template, which can be a filtration or a convolutional kernel model, is represented by

$$H(n, m) * A(d, r) = \sum_{i=p}^{p} \sum_{j=q}^{q} a(i, j) \int (n + i, m + j) + \left\| d_{a,g}(n) - m \right\|^2. \tag{5}$$

Among all of $H(n, m) * A(d, r)$, these are the convolution control systems $H(n, m)$, $\int(n, m)$, which reflect its assign image and even the resolution of the image centering solely on a pixel spot, including both (n, m). $A(d, r), a(d, r)$ are the configuration matrix and thus the weight within the matrix, respectively.

The results produce randomly sampled extracted features. The participation of the convolution standard within the previous process of consolidation is becoming the output of such a set of experiments in the following convolution process. The sigmoid functions, transfer function, and rectified linear functions are illustrations of frequently used type functions and are represented in

$$\int (n) = \sum \frac{1}{1 + e^{-n'}}, \tag{6}$$

$$\int (n) = \sum \frac{e^{n} - e^{-n}}{e^{n} + e^{-n'}}, \tag{7}$$

$$\int (n) = \max_{n \longrightarrow 1} (0, n). \tag{8}$$

The connectivity will normalize the features after trying to extract them to keep the variation between neighboring features in about the same live feed of a configurability image from being too large. Equation (9) represents the normalization of the features.

$$d^{i}_{n,m} = \sum \frac{r^{i}_{n,m}}{\left(g + \alpha \sum_{j=\max_{i\longrightarrow 1}(0,i-n/2)}^{\min_{i\longrightarrow 1}(X-1,i+x/2)} \left(r^{j}_{n,m} \right)^{2} \right)^{\beta'}}. \tag{9}$$

Along with many others, $d^{i}_{n,m}$, $r^{j}_{n,m}$ represent the convolution kernel's completely original activations. X, x represent the number of additional distinct network convolutions and even the number of attribute illustration flows, respectively.

The sending and receiving processes of the ith neuron from the nth convolutional layer appear to have as follows: this sensory neuron takes the performance among all interconnected neurons as input to the previous convolutional layer and adds a variance g. The variable x represents the network's previous layer's results, and the input of the ith neuron is continued to increase by equation (10) a weight corresponding to each neuron.

$$d^{i}_{n,m} = \alpha \sum_{j=\max_{i\longrightarrow 1}\left(0,i-\frac{n}{2}\right)}^{\min_{i\longrightarrow 1}\left(X-1,i+\frac{x}{2}\right)} \left(r^{j}_{n,m} \right)^{2} + \sum \left\| d_{a,g}(n) - m \right\|^{2}. \tag{10}$$

The variable m is the sum of the all the outcomes and then represents the authentication value. The amplitude function computes the efficiency n of this neuron. The learning algorithm is represented by H. Equation (11) shows the process of determining the frequency response of the CNN model layer human brain.

$$N^{i}_{n} = H\left(m^{i}_{n}\right) = H\left(\sum_{e=1}^{P_{n-1}} \left(A^{ie}_{n} N^{e}_{n-1} + g \right) \right). \tag{11}$$

The suggested algorithm generates $A^{ie}_{n} N^{e}_{n-1}$ the same number of feature representations also as initial convolution, but the size of each feature chart is reduced. Equation (12) represents neurotransmitter efficiency.

$$N^{e}_{j} = \int \left(\beta^{e}_{j} \mathrm{low}\left(N^{e-1}_{j} \right) + g^{e}_{j} \right) + \left\| d_{a,g}(n) - m \right\|^{2}. \tag{12}$$

To β^{e}_{j} normalise the same features extracted, humans must perform convolution once more and N^{e}_{j} correct the linear relationship with a convolution. Normalization is performed in a particular location using the normalization function. As a result, we must still describe a parameter which specifies the normalized area's dimensions. The normalized equation (13)'s function is represented below.

$$\int\left(v^{n,m}_{\int 1} \right) = \sum \frac{v^{n,m}_{\int 1}}{1 + (a/X)^{2} \sum_{n'=\max_{n\longrightarrow 1}(0,n-[N/2]),}^{\min_{n\longrightarrow 1}(K,n-[N/2]+N)} \sum_{m'=\max_{m\longrightarrow 1}(0,m-[N/2]),}^{\min_{m\longrightarrow 1}(K,m-[N/2]+N)} \left(v^{n'm'}_{\int 1} \right)^{\beta'}}. \tag{13}$$

The difference was that every induction unit can only be assigned by all the other enhancement units in the same destination but also on different feature maps is given in

$$\int\left(v^{n,m}_{\int 1} \right) = \sum_{n'=\max_{n\longrightarrow 1}\left(0,n-\left[\frac{N}{2}\right]\right),}^{\min_{n\longrightarrow 1}\left(K,n-\left[\frac{N}{2}\right]+N\right)} \sum_{m'=\max_{m\longrightarrow 1}\left(0,m-\left[\frac{N}{2}\right]\right),}^{\min_{m\longrightarrow 1}\left(K,m-\left[\frac{N}{2}\right]+N\right)} \left(v^{n'm'}_{\int 1} \right)^{\beta'}. \tag{14}$$

However, in order to normalize a penultimate fully convolutional machine, designers have to use components ranging from the third to the seventh extracted features. It is normalized as shown in

$$\int\left(v^{n,m}_{\int 1} \right) = \sum \frac{v^{n,m}_{\int 1}}{1 + (a/X)^{2} \sum_{n'=\max_{n\longrightarrow 1}(0,n-[N/2]),}^{\min_{n\longrightarrow 1}(K,n-[N/2]+N)} \left(v^{n'm'}_{\int 1} \right)^{\beta'}}, \tag{15}$$

where K denotes the number of feature planes. The extracted time series are based here on segmented images. The differential image consists of the maximum value of something like the attribute beige pixel difference through successive frames of the sequential image. This subtraction procedure should ideally start by equation (16) removing a still picture, leaving just its working parts.

$$v^{n,m}_{\int 1} = \sum_{n'=\max_{n\longrightarrow 1}\left(0,n-\left[\frac{N}{2}\right]\right),}^{\min_{n\longrightarrow 1}\left(K,n-\left[\frac{N}{2}\right]+N\right)} \left(v^{n'm'}_{\int 1} \right)^{\beta'} + \sum \left\| d_{a,g}(n) - m \right\|^{2}. \tag{16}$$

A different image may contain numerous or a few stationary parts in real-world situations due to climate change in lighting fixtures, shadows, and noise.

4. Results and Discussion

Every keyframe of a human activity recognition model's recognition efficiency was evaluated in both real-time and delayed modes. Figure 3 depicts the recognition rate of each keyframe of a framework in the dataset test set. In delayed and real-time video statistics, the GDP of a keyframe and mean values for the overall GDP have been detected. Method recognition performs well, with an overall accuracy of 85.8% for human activity recognition.

Experiments revealed that the detection rate of keyframes from 2016 to 2021 is lower than that of other frames (refer to Table 1). These frames all have the same characteristics. Initially, the BP frequency around the frame is excruciatingly slow, but the frequency of a frame will gradually increase later on. Because the identifier (2016, 2017, 2018, 2019, 2020, and 2021) identifies the start of a detection dataset record in a sports image, its speed limit and the final stage of a rotation and its final bandwidth are all set to zero. The logistic regression of this neural network as a whole is a

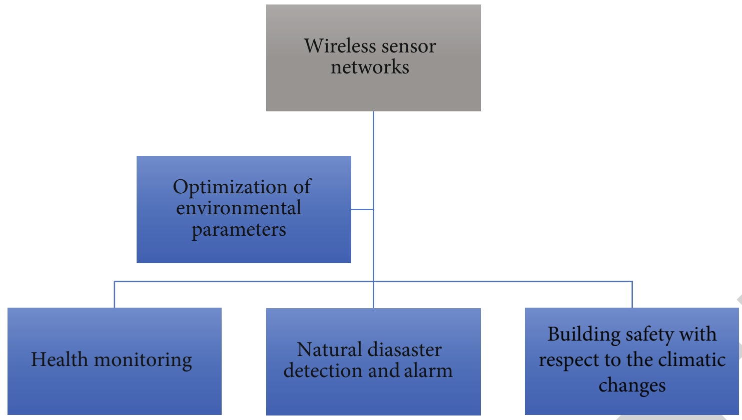

Figure 2: Advantages of this research.

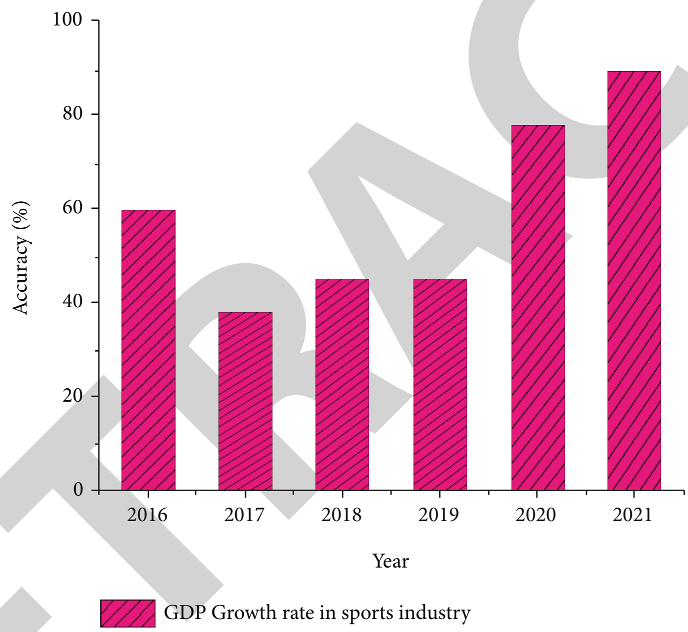

Figure 3: BP classification of GDP growth rates in the sports industry from 2016 to 2021.

Table 1: GDP growth rates in the sports industry from 2016 to 2021.

Year	GDP growth rates	Accuracy (%)
2016	59	72
2017	38	68
2018	45	73
2019	40	69
2020	79	80
2021	88	85

multiple objective function that frequently conforms to a static condition. The parameters are retrained using the training algorithm technique. The main goal is to compute the derivative of the function of an observable signal with respect to the data vector. The solutions to such an optimization problem are given in equations (3) and (4) based on Figure 3.

The speed detection of an ice and snow sports venue by a convolutional BP algorithm seems to be critical for identifying the sequential image accuracy but not detection. Figure 4 depicts an experimental evaluation of using a random data image to evaluate detection speed and accuracy for novel records. Evaluate the effect on the accuracy of that model while holding a few other parameters constant. When the sequence duration becomes too lengthy for the device's related technologies, a few processes must be performed to ensure that the sampling rate is reduced. Along with many of them, those are the convolution standard features which reflect their assigned image and even the number of pixels centred solely on the input image spot, including equation (5) based on this to retrieve Figure 4.

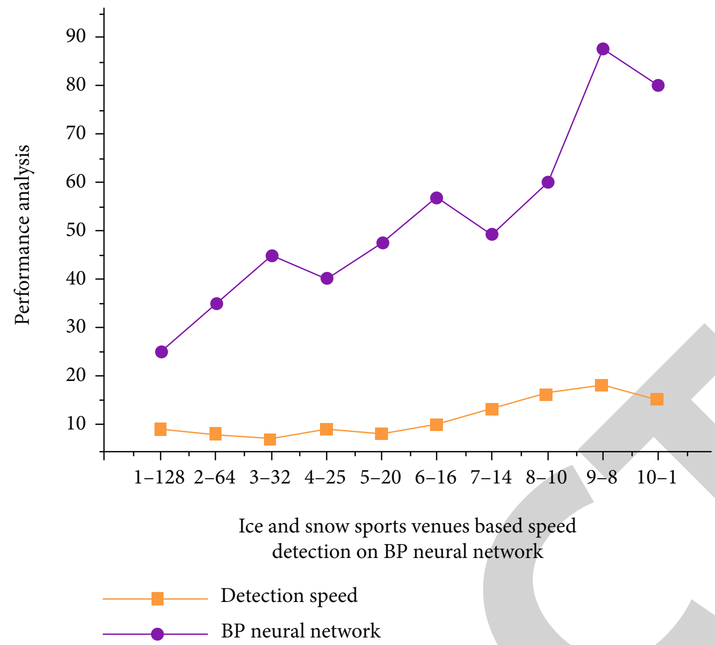

Figure 4: Analyses of ice and snow sports venues using convolutional BP neural network technology for speed detection.

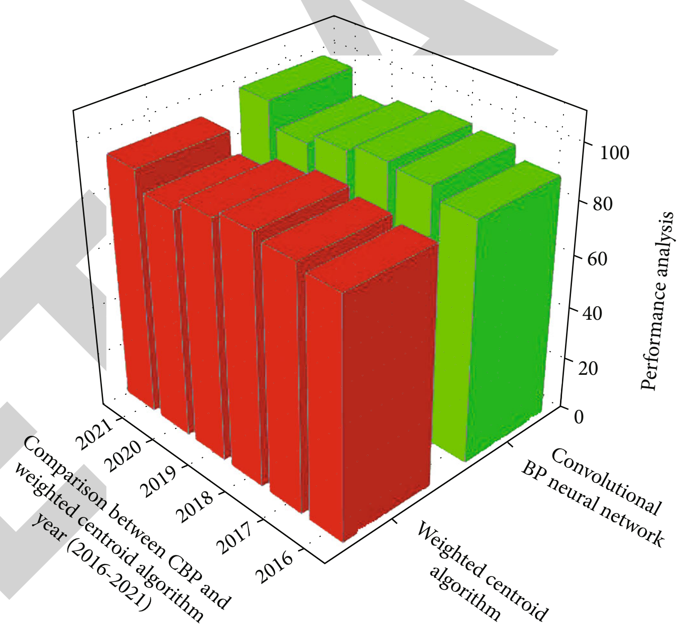

Figure 5: Performance comparison of the CBP and weighted centroid algorithms for detecting ice and snow sports images.

When training integration, its detection accuracy of a sports accuracy rate of a sports head, normal reliability of the method, and overall detection speed of such a single image are all detected, the framework is validated. Figure 5 shows that the faster convolutional backpropagation (CBP) algorithm has a 93.7% success rate, while the weighted centroid algorithm does have a 62.7% success rate. Accelerated CBP outperforms the weighted centroid algorithm in terms of quality, according to the experimental data. Because the faster CBP network was able to extract so many preceding frames, it has a higher recognition rate than the weighted centroid algorithm. The ith neuron from the nth convolutional layer appears to have the following sending and receiving processes: this sensory neuron adds a variance g to the performance of all interconnected neurons as input to the previous convolutional layer. The variable x represents the previous layer's results in the network, and the input of the ith neuron is increased by equation (10) a weight corresponding to each neuron based on this to get Figure 5.

Nonetheless, two distinct detection algorithms are required to extract its candidate frame but also classify it

Table 2: Images of ice and snow sports comparison result analysis. The difference in frequency of pixel value speed between both the CBP and weighted centroid algorithm methods.

Algorithm	Training (%)	Testing (%)	Speed (×10 ms)	Accuracy (%)
Convolutional backpropagation (CBP)	97	98	0.02 ms	99.45
Weighted centroid algorithm	91	93	0.03 ms	95.89

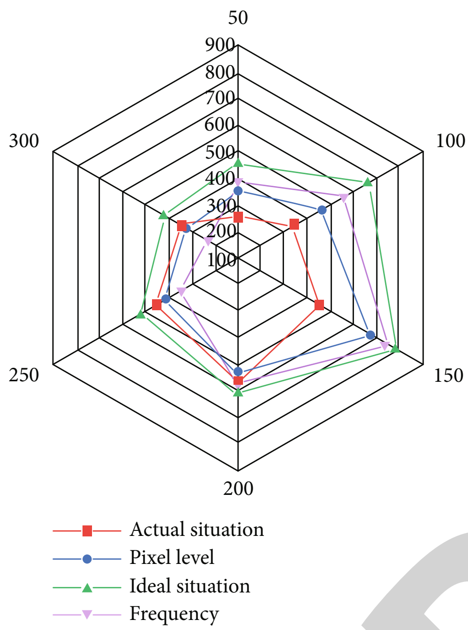

Figure 6: Histogram distribution of real difference in ice and snow sports images. Fourier transforms of actual and desired situations.

based on characteristics within the categorization frame. This classification requires the use of two classifiers, and the CBP computation amount is much greater than that of the weighted centroid algorithm (refer to Table 2). Its detection time appears to be much slower than that of the weighted centroid algorithm, which is 0.02 ms. It is a comparison for such existing method that is far superior to the CBP algorithm; the overall accuracy for CBP is 99.45%, while the weighted centroid algorithm has been 95.89%.

Figure 6 shows a representation of the histogram surface of different images. Determine the locations of several depressions within the histogram distribution of distinct sports images. The number of pixels in various regions is denoted by the frequency of pixel value analysis of ideal and actual situations as well as the area between the depressions. The classification points of such a static region and the actual moving situation based on the above assumptions and the ideal case are now at the trough immediately after the area, with its most significant space between the tracks. As a direct consequence, the arithmetic pixel level of regularity can be dynamically selected, focusing on different sequential images and yielding better results. As a result, its binarization of various images is divided into two parts: a white stuff and a set of black spots. The dark spot reflects the image's moving parts, whereas the brilliant light reflected the image's static parts. To β_j^e normalize its same extracted features, humans must perform convolution again and N_j^e correct the linear relationship with a convolution. The normalization function is used to perform normalization in a specific location. The result of the Normalization function from Equation (13) is represented in Figure 6, It also describes the dimensions of the normalized area.

5. Conclusions

As a new tourism industry model, the snow and ice sports tourism industry will have played a critical part in expanding China's total tourism industry. This paper examines the functional optimization of the supply chain for the snow and ice sports industry using sensor network communication and artificial intelligence, with the goal of fully utilising sensor network communication and artificial intelligence technology for ice and snow sports industry innovation. This research also includes linkage with the dominance of artificial intelligence in communication processing and interpretation, as well as the analysis of experimental data. It provides comprehensive information on artificial intelligence and ice and snow entertainment industry. As part of the implementation results, tests were conducted on snow and ice public resources, sustainable competitive advantage, the approximate semiannual amount of the snow and ice sports entrepreneurship economic success index, ice but also snow sports stadiums, GDP, and thus the speed comparison and also the structure of physical education and sport. The study results proved that the algorithm has high accuracy of 99.45%. For future research, it is highly suggested to implement deep learning techniques in evaluating the environmental parameters of chosen sports.

Data Availability

The data used to support the findings of this study are available from the corresponding author upon request.

Conflicts of Interest

The authors declare that there are no conflicts of interest.

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