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Retraction

Retracted: Route Planning of Health Care Tourism Based on Computer Deep Learning

Wireless Communications and Mobile Computing

This article has been retracted by Hindawi following an investigation undertaken by the publisher [1].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] S. Wang, "Route Planning of Health Care Tourism Based on Computer Deep Learning," *Wireless Communications and Mobile Computing*, vol. 2022, Article ID 4500009, 11 pages, 2022.

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Research Article
Route Planning of Health Care Tourism Based on Computer Deep Learning

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With the continuous improvement of people's living standards, the form of tourism is gradually changing. In the past two years, people's demand for tourism has also changed from traditional ornamental tourism to wellness tourism, which has provided a development opportunity for rural tourism. At the same time, the government has also begun to focus on the development of tourism with rural characteristics to promote the development of rural areas. However, health tourism still has certain defects, and the development of rural planning is still advancing and improving. Leisure agriculture is an area where agriculture, tourism, and service industries intersect, and it is the link that maintains the common development of the three. Applying the concept of health tourism to the planning and design of leisure agricultural parks can make people satisfied in tourism. The pursuit of health and wellness also drives the development of the rural economy. With the progress of the economy and the continuous improvement of people's living standards, the traditional travel mode is gradually changing towards the direction of informatization. The traditional way of travel-by-travel agencies planning travel routes is no longer the first choice for people to travel. On the one hand, the rapid development of the Internet brings convenience to people, and on the other hand, it also brings a lot of information to the public.

1. Introduction

In recent years, under the background of increasing national income and people's increasing pursuit of quality of life, consumption upgrading and consumption diversification have become the normal state of people's lives, and people are no longer satisfied with the satisfaction brought by their daily leisure methods and then turn to tourism consumption [1]. In recent years, the tourism market has shown a continuous growth trend [2]. In addition to fast-paced work, travel has become an important way for people to relieve stress and have fun [3]. From the perspective of industry data, according to the "Statistical Bulletin of Culture and Tourism Development in 2019", the number of tourists in China has reached 6.006 billion in 2019, and the growth rate is still rising, and tourism revenue is also as high as 573 million yuan. Our country is a huge tourist consumer, and as the economy continues to progress, this number is likely to rise. With the increasing number of tourists, more

and more people's demands are also rising. Figure 1 shows China's tourism consumption data from 2011 to 2019 [4].

In 2016, the National Tourism Administration announced the relevant policy standards for wellness tourism, namely, the "National Wellness Tourism Demonstration Base" standard (LB/T051-2016), and established the first five "National Wellness Tourism Demonstration Bases" in China [5]. This shows that "health tourism," a new form of tourism, is widely recognized by the society and supported by the national tourism development policy [6]. In the same year, the State Forestry Administration issued the "Notice on Launching the Pilot Project of National Forest Experience Base and National Forest Health Base" for the development and protection of China's forest resources and forest health care resources, proposing to vigorously develop forest health care tourism. Improve people's health through forest environment [7]. At the end of the same year, the State Council promulgated the "Healthy China 2030" Planning Outline document, which

Figure 1: Tourism consumption data map.

proposed to integrate health care with tourism, fitness, catering, and other industries to create a brand-new industrial model [8]. Strengthen the effective supply of the state-owned economy in the field of health and elderly care. Promote the development of health tourism and speed up the construction of health tourism bases. Select cities or regions with rich teaching and scientific research resources, strong medical service capabilities, and strong industrial strength, based on high-level hospitals, improve comprehensive collaborative policies, and create health industry clusters. Therefore, the development of health tourism is now supported by national policies and has a bright market development prospect [9].

With the continuous development of health tourism, it has penetrated into different fields [10]. In the planning, the leisure agricultural park gradually combines viewing, leisure, health preservation, and amusement to form a more mature business form based on nature and culture [11]. In the process of playing, people can not only enjoy the fun but also make people gradually experience self-cultivation and physical and mental pleasure [12]. Wellness tourism is also gradually showing a trend towards global tourism, getting rid of the original small-scale tourism and emphasizing large-scale tourism in the entire region [13]. The establishment of the leisure agricultural park is also the result of combining with the culture and landscape of the region [14]. The foundation of the establishment of the two is the local cultural foundation, which is destined to interweave health tourism and leisure agricultural parks [15]. The concept of health care has gradually evolved into the core concept of the planning of many leisure agricultural parks [16]. From a macroperspective, health tourism should not only focus on improving the physical and mental health of tourists but also include the following points: (1) the purpose of tourism should be healthy. (2) Tourism behaviour in the process of tourism should be healthy and should not damage the natural environment and local culture. (3) The effect of tourism should be healthy, which can not only improve the physical and mental health of tourists but also promote the healthy development of regional nature and society.

That is, health tourism is a tourism activity that can improve the physical health of tourists in the process of tourism.

With the development of technology and breakthroughs in the performance of computer hardware devices, big data analysis methods have become a handy tool for researchers [17]. The application of data mining to the tourism market is an important technological breakthrough in the field of tourism research. AI makes tourism plans based on the choice of options on users' recommendations for in-depth learning, and then, through the arrangement and combination of information integration, select the best scheme, so as to facilitate users, improve security and service, and promote industrial development. At the same time, the wide coverage area is also one of the highlights of intelligence in this mode. It has a wide range of applications in scenic spots, hotels, transportation, and other aspects, which can take into account the needs of users in an all-round way. Among them, tourism route planning is an indispensable part of smart tourism research and tourism recommendation system development [18]. Relying on machine learning and deep learning, as well as the vigorous development of its supporting technologies and hardware through the development of the model, the mining and prediction accuracy of tourists' interest has been greatly improved, which will play a vital role in the rapid development and progress of smart tourism and tourism economy and also provide a platform for the development of local tourism [19]. The core of the system is tourists, so the starting point of system and algorithm design should be in line with tourists' interests and motivations [20]. Tourists' satisfaction with the route planned by the system will directly affect tourists' subjective evaluation of the tourist city attractions and thus indirectly affect the tourist attractions. Tourists make travel plans and affect users' stickiness to the system. On the basis of taking tourists as the center, the optimal route is planned around the interest, time, budget, experience, and other factors of tourists. A personalized travel route can bring tourists the best travel experience [21].

2. State of the Art

2.1. Theories Related to Health Tourism

2.1.1. Definitions. Wellness tourism is a compound noun. Wellness refers to health and wellness. In short, wellness tourism refers to a form of tourism that takes health and wellness as the planning concept. Deputy Dean He Mang of the School of Tourism of Sun Yat-Sen University and his research team in April 2018 specifically defined the term "health care" in China's first health care blue book "Report on the Development of China's Health Care Industry (2017)": relying on external conditions to adjust people's body and psychology, to help people achieve fitness and health-oriented behavior.

I have refined the concepts put forward by consulting the literature. Generally speaking, health tourism is a tourism activity based on local natural and cultural resources to achieve the purpose of health and well-being. In the development of health tourism, several similar concepts have gradually emerged, among which health tourism, health tourism, and health tourism are easily confused. I think the three planning ideas and theories may be close, but there are subtle differences in form and purpose (Table 1).

2.1.2. Characteristics of Wellness Tourism. As a new trend of current tourism development, health tourism is a highly comprehensive industry. I summarize its characteristics through reviewing literature and related materials, which are mainly divided into six characteristics: physiotherapy, crowd service, ecology, system integration, model diversity, and policy support.

(1) Physiotherapy: the planning of regional health tourism is generally developed based on the local health culture, so that people can achieve the effects of health, beauty, shape, emotion, and wisdom in the process of tourism. Health tourism plays a physiotherapy effect on people's physical and mental health through ecology, technology, landscape, and other methods. In addition, the development of wellness tourism will rely on certain medical resources such as the basis of traditional Chinese medicine, medical facilities, medical technology, and nursing and will create a form of tourism with medical protection by combining with the local environment. Medical tourism is a tourism service with the theme of medical care, disease and health, rehabilitation, and recuperation. Considering the differences between medical tourism and traditional medicine and traditional tourism, we should carry out diversified nursing care for tourists in medical tourism, increase the quality training of nursing staff, reform of hospital mechanism and system innovation, and carry out personalized nursing, diversified nursing, and whole process nursing, so that tourists' treatment, nursing, life, study, and rest are fully cared for, and their interests and personality are fully respected

(2) Crowd service: the site selection, planning, and service of health care tourism should fully consider the local target market and develop and introduce relevant health care culture and project activities according to the needs of tourists. All in all, the service object of wellness tourism is tourists, and all tourism planning must be based on the needs of tourists as the planning goals and strategies

(3) Ecological: the planning premise of wellness tourism is to protect the environment and sustainable development. The ecological nature of wellness tourism not only is the harmonious development of the existing ecosystem and biological community but also will not cause invasion of the ecosystem due to human intervention, thereby destroying the original ecosystem. Only by relying on the natural ecological environment can human beings better walk into nature and experience nature

(4) System integration: the system of tourism products is relatively complete. By sorting out relevant documents and analyzing the content, health tourism is mainly divided into three levels of tourism systems: the first is the tourism system. The tourism forms in this system include winter and summer tourism, rural tourism, forest health tourism, and cultural tourism. This part of the health care system takes tourism as the core to drive the health care attributes. The second is the recuperation system, which includes traditional Chinese medicine tourism, water bath recuperation tourism, and beauty recuperation tourism. Finally, there is the health and fitness system. The health and wellness tourism in this system achieves the effect of health and fitness by organizing related outdoor sports, mainly including sports and fitness tourism, martial arts tourism, and ethnic sports tourism

(5) Diversity of modes: there are various development and operation modes of wellness tourism. Based on the research of domestic scholars and related papers, most of the operation modes of wellness tourism are mainly carried out in three modes. The first is to rely on local health and wellness culture to support the operation of the tourism industry. Taking health care culture as its own advantageous resources, it will create a comprehensive tourist resort that integrates comprehensive experience, education, vacation, and recuperation. This type of tourist resort generally contains a long history of health preservation culture, and these cultures still retain their own characteristics with the precipitation of time and the inheritance of the times.

The second mode of operation is to rely on superior resources to develop. The planning core of this type of health tourism is mainly regional natural resources. There are many types of these tourism resources, including plant resources, forest resources, mountain resources, and water resources.

The third is to artificially create health care resources to develop health care tourism. This type of wellness tourism breaks through the shortcomings of its own culture and

TABLE 1: Differentiation and analysis of concepts related to wellness tourism.

Concept	Conception
Kang travel	A tourism activity based on local natural and cultural resources
Health tourism	Through travel to achieve health care, exercise, rehabilitation, beauty, and spa
Health tourism	A high-end market form of tourism that takes advantage of its climate, topography, hydrology, and traditions
Health tourism	A special form of tourism activities for the purpose of achieving physical health

TABLE 2: Analysis of target groups of health tourism.

Age	Content requirements	Service project	Tourist destination
Young (3-12 years old)	It is in line with the curiosity of young people for novel things and can provide the opportunity to learn new knowledge	Stage performance, interactive entertainment	Exercise children's physical coordination
Junior (13-25 years old)	It can meet the adventurous spirit of young people to outdoor activities and can increase their practical ability	Interactive and cooperative outdoor recreation projects	Build cheerful personality and develop motor skills
Youth (26-40 years old)	It can relieve the pressure of daily work for young tourists and also achieve the effect of beauty and health	Hot springs, forest adventures, camping barbecues	Release stressful work pressure
Middle-aged and elderly (over 41 years old)	This age group hopes to get physical and mental rehabilitation and enjoy the fun of nature from traveling	Horticultural convalescence, agricultural activities	Improve physical fitness, improve common diseases in the elderly

resources and relies on the existing characteristic recuperation resources or the introduction of domestic and foreign recuperation resources to create a wellness tourism area with related tourism projects. The main tourism projects include water baths, traditional Chinese medicine health care, modern medical care, sports, beauty, and so on. Nowadays, the international health tourism industry has begun to take shape, and products with core competitiveness and unique selling points have been formed in many countries, which can be described as colorful and distinctive, for example, Chinese cultural health care, Japanese hot spring health care, Thai fitness health care, French manor health care, Swiss antiaging health care, American elderly care health care, Korean beauty health care, and Alpine health care; at the same time, different health tourism development models have also been developed.

(6) Policy support: under the background of "Healthy China," industries related to "big health" have developed vigorously and rapidly. At the same time, the support policies related to the development of health and wellness tourism issued by the state have also been introduced one after another. This also enables the sustainable and rapid development of health tourism in China

2.1.3. Target Groups of Health Tourism. When it comes to health care, many people first think of the elderly group, but in fact, with the continuous development of health care to the level of "Pan health care," the elderly consumer group is only a branch of health care tourism at present. The demand for healthy life is not limited to the elderly. The health care market is very broad and should be a full-age market. According to different age stages, the target groups of health tourism

operations in the region are divided, including young, teenagers, young people, middle-aged, and elderly people. Tourists at different ages have different content requirements, service items, and tourism purposes for health tourism (Table 2).

According to different classification bases, health tourism can be classified in various ways. According to the function of health tourism, health tourism can be divided into ecological health preservation, cultural health preservation, sports and leisure, leisure and vacation, and medical care. According to the product characteristics of health tourism, health tourism can be divided into health tourism, health tourism, and sports tourism. According to the development model of wellness tourism, wellness tourism can be divided into culture-driven, resource-dependent, and artificially implanted tourism.

2.2. Domestic and Foreign Research Status of Wellness Tourism

2.2.1. Current Status of Foreign Research. The research on foreign health tourism is mainly divided into three directions: medical tourism, forest health tourism, and water bath health tourism. In the early stage of development of foreign medical tourism, it was combined with local hot spring tourism, using the effects of hot springs to relieve physical and mental stress and maintain physical health, and gradually developed into health tourism. Lee conducted an analysis of the interaction between the health care sector and international tourism, as well as the impact of the local health care situation in Singapore on international tourism. He concluded that there is a definite causal relationship between international tourism and health care. Health tourism will cure some diseases at the same time, which makes health tourism gradually develop towards the direction of medical tourism. Scholars Claudia and others analyzed four-star

and five-star hotels in Romania to understand health care facilities and services; Sharma and other scholars took Rishikesh, a health tourism destination in Ondu, as an example, and used the partial least square method to explore the relationship between the destination image and behavior intention of tourists' emotional experience, indicating that emotional experience is very helpful to predict the flow of tourists in health tourism in the future.

The predecessor of forest health tourism is "forest climate therapy," "forest therapy," "forest bathing," and so on. Germany is the first country to develop forest health care. In the 1840s, the world's first forest bathing base was established in Bad Willishorn, Germany. With the increasing popularity of forest health care, more than 1 billion people travel to the forest every year. In the later period, forest health tourism in Germany continued to develop. According to statistics, Germany has built more than 350 forest health tourism bases and more than 1,500 forest parks. As a result, Germany's national medical expenses have been reduced by 30%, and about 40% of the people travel to health care bases every month.

In 2002, Selman proposed that thermal therapy can bring healthy effects to the body, and hot water baths can improve the elasticity of skin and muscles and create smooth lines and beauty. Ingram's research in 2009 proposed that after strenuous exercise, athletes can take a cold bath to quickly cool down the muscles, promote the body's blood circulation, and improve physical health and recovery. With the development of water bath tourism, the purpose of modern tourists' water bath tourism is not only for health recuperation but also for enhancing the emotional communication between relatives, colleagues, and friends.

2.2.2. Domestic Research Status. The research field of domestic scholars on health tourism is similar to that of foreign countries, mainly focusing on hot spring spa tourism, forest health tourism, traditional Chinese medicine health tourism, and other fields. At present, some influential academic journals in China have been paying attention to the research of health tourism, but in general, its depth, breadth, and influence need to be further improved. It also shows that health tourism research is interdisciplinary research, which can be analyzed and studied from the perspective of tourism management, applied economics, agronomy, forestry, public health, and other different disciplines.

(1) Hot spring spa tourism

China's hot spring spa tourism only started in the 1990s. In 2005, Mao proposed that the hot spring health culture is indispensable in the development of hot spring tourism. In the method to enhance the competitiveness of hot spring tourism products, the key is to enhance the industrial culture of tourism products. Su and others found through experimental research in 2009 that hot spring mineral mud can play a certain antiaging effect on human body functions. Liu discovered in 2011 that hot springs can enhance immunity, maintain health, and relieve stress on the human body. Tan discussed the necessity of health preservation culture and hot spring culture in landscape design in 2012. In 2015, Zou proposed that

hot spring spa tourism should be planned by combining hot springs, farmhouses, and conferences.

(2) Forest health tourism

In 2016, Chen put forward effective suggestions on the product development and design of forest tourism based on forest resources and development trends. In 2017, Ma and Gan discussed in depth the advantages, disadvantages, opportunities, and challenges of forest health tourism in Sichuan and proposed a set of benign development mechanisms. Zhou believes that forest health tourism has an exploratory role in the development of forest tourism, and a variety of elements suitable for market needs can be added to forest health tourism. Ren summarized the philosophical basis of health tourism in 2016 and put forward his own suggestions for the development of health tourism according to the scientific connotation. Figure 2 shows the top 10 provincial health tourism cities in China.

(3) Traditional Chinese medicine health care tourism

As early as 2000, J. Wang and J. Wang proposed and explained "traditional Chinese medicine travel." They pointed out that traditional Chinese medicine health care tourism is to create a characteristic brand of traditional Chinese medicine culture and enhance the core value and added value of health care tourism by refining traditional Chinese medicine health preservation culture. The development of medical tourism puts forward countermeasures from the aspects of layout, system, facilities, and security.

3. Methodology

3.1. Deep Learning Module-Related Technologies and Concepts

3.1.1. Convolutional Neural Network Model. In deep learning, convolutional neural networks are a class of deep neural networks. It is a shared weight architecture based on convolution kernels to scan the features of the hidden layers. The convolutional neural network process starts with convolution and pooling, decomposes matrices into features, and then analyzes them independently. The results of this process are passed into a fully connected neural network structure, which optimally produces the final classification decision. Finally, the fully connected layer is connected to the output layer, and finally, the probability prediction values of different classifications are obtained to form an interest vector. The number of layers of the convolutional network can be increased according to requirements and accuracy.

3.1.2. Activation Function. The activation function is also an important concept in convolutional neural networks, so it is explained as a single concept. Biologically, whether a neuron is activated depends on whether the signal value is greater than a certain threshold. If the trigger condition is not met, it means that the convolution kernel has no features extracted in this area, or the features are very weak. Common activation functions include sigmoid function, tanh function, and the popular
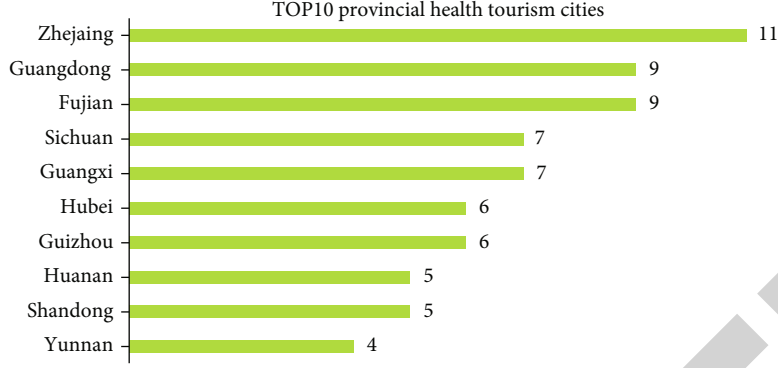
Figure 2: Top 10 provincial health tourism cities in China.

ReLU function and leakyReLU function in recent years, as well as the softmax function.

(1) ReLU function

$$f(z) = \begin{cases} 0, & z \leq 0, \\ z, & z > 0. \end{cases} \tag{1}$$

(2) LeakyReLU function

$$f(x) = \max(ax, x). \tag{2}$$

(3) Softmax function

$$y_k = \frac{e^{a_k}}{\sum_{i=1}^n e^{a_i}}. \tag{3}$$

In the implementation of the softmax function, the exponential function is performed, so the value of the exponential may become very large. Therefore, the softmax function is improved by the following formula:

$$y_k = \frac{e^{a_k}}{\sum_{i=1}^n e^{a_i}} = \frac{Ce^{a_k}}{C\sum_{i=1}^n e^{a_i}} = \frac{e^{a_k + \ln C}}{\sum_{i=1}^n e^{a_k + \ln C}} = \frac{e^{a_k + C'}}{\sum_{i=1}^n e^{a_k + C'}}. \tag{4}$$

(4) Sigmoid activation function

The expression of sigmoid activation function is

$$f(x) = \frac{1}{1 + \exp(-x)}. \tag{5}$$

The curve of the sigmoid activation function is sigmoid, which limits the output value between 0 and 1. The graph of its derivative is in Figure 3.

3.1.3. Tourist Feature Attribute Vector Feature (F for Short). The vector F describes the set of common characteristic concepts of tourists, which are applicable to each tourist. For a visitor, with n-dimensional eigenvectors,

$$F = \{x_1, x_2, \cdots x_n, |n \in N^*\}\}. \tag{6}$$

In this way, n characteristic attributes of tourists are described.

3.1.4. Feature Sample Matrix X. After confirming the total number of samples M, combine the feature vectors F of M tourists to obtain the feature sample matrix X, and the storage format is as follows:

$$X = \begin{vmatrix} x_1 & x_2 & x_3 & \cdots & x_n \\ x_{11} & x_{21} & x_{31} & \cdots & x_{n1} \\ x_{12} & x_{22} & x_{32} & \cdots & x_{n2} \\ \vdots & \vdots & \vdots & \vdots & \vdots \\ x_{M1} & x_{M2} & x_{M3} & \cdots & x_{Mn} \end{vmatrix}. \tag{7}$$

Each row of the matrix represents a characteristic attribute of a visitor. There are total sample data of M tourists, so X includes M rows. The columns of the matrix represent the value of each attribute.

With tourist attraction classification vector label (L for short), the meaning of tourist attraction classification is to classify the tourist attractions in the urban area according to their characteristic attributes and use the classification of the city by professional tourism websites and the feedback of tourists to classify the city's tourist attractions is divided into m categories, and these categories include natural landscapes, historical monuments, theme parks, and more. M-class tourist attraction classification vector is

$$L = \{l_1, l_2, \cdots, l_k | k \in (0, m] \in N^*\}. \tag{8}$$

With tourist attraction distribution matrix J, first of all, we set the number of tourist attractions included in each tourist attraction classification as $kn \in N*$ and $n \in (0, m] \in N*$. For example, k is under the third type of tourist attraction classification. That is, under the category of shopping
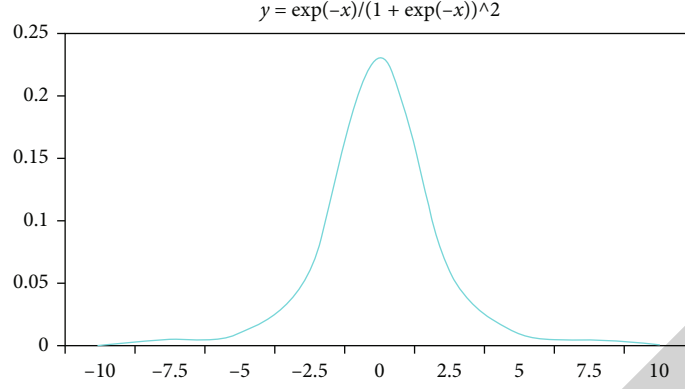
FIGURE 3: Derivative curve of the sigmoid activation function.

centers, $k3$ tourist attractions are included. Definition

$$\max k = \max \left(k_1, k_2, \cdots k_m \right) \in N^* \tag{9}$$

indicates that among the classification of tourist attractions, the maximum number of tourist attractions in a certain category is $\max k$.

According to the above assumptions, the distribution matrix J of tourist attractions is defined, and the representation format is as follows:

$$J = \begin{vmatrix} l_1 & l_2 & l_3 & \cdots & l_m \\ l_{11} & l_{21} & l_{31} & \cdots & l_{m1} \\ l_{12} & l_{22} & l_{32} & \cdots & l_{m2} \\ \vdots & \vdots & \vdots & \vdots & \vdots \\ l_{1 \max k} & l_{2 \max k} & l_{3 \max k} & \cdots & l_{m \max k} \end{vmatrix}. \tag{10}$$

The row1–rowmaxk in the matrix represents the classification of tourist attractions, and each column represents a specific tourist attraction. Since the total number of tourist attractions in each classification may be different, the column elements of matrix J will be uneven. Therefore, in order to store the matrix in a standard format, the part with less than $\max k$ number of attractions under each classification is filled with 0.

The training sample train (abbreviated as T), the characteristic attribute vector X of tourists, and the tourism classification vector L are defined above, and these two matrices are further processed to form the training sample matrix T. The processed data is stored in text format. The specific method is to combine the tourist feature attribute matrix and the tourism classification vector to form a training sample vector T, and the format is $T = \{X, L\}$. The total number of training samples is M, and one data format in T is

$$T = \left\{ x_1, x_2, x_3 \cdots x_n, l_k | n, k \in N^* \right\}. \tag{11}$$

The last column of matrix T is a classification of tourist attractions that tourists are most interested in in the sample.

The storage format of matrix T is as follows:

$$T = \begin{vmatrix} x_1 & x_2 & x_3 & \cdots & x_n & l_k \\ x_{1n} & x_{2n} & x_{3n} & \cdots & x_{nn} & l_k \end{vmatrix}. \tag{12}$$

With the classification vector I of tourist attractions of interest, the convolutional neural network outputs the tourist classification probability values that tourists are interested in, arranges the interesting tourist classification probability values in descending order, and stores them in a vector in the form of element sequence, which is called the classification vector I of tourist attractions of interest, and the format is

$$I = \left\{ I_1, I_2, I_3 \cdots I_m \right\}. \tag{13}$$

With the classification distribution matrix A of tourist attractions of interest, according to the predicted interest vector I and the number of planned tourist attractions input by tourists in advance, the specific number of tourist attractions that meet the needs and interests of tourists in each classification can be determined, with different planning options. The number of tourist attractions is stored in an rXm-dimensional matrix A, which represents the classification of tourist attractions and the distribution of the number of tourist attractions that tourists are most interested in. This paper calls it the classification distribution matrix of tourist attractions.

The storage structure of the A matrix is

$$A = \begin{bmatrix} a_{11} & a_{12} & a_{13} & \cdots & a_{1m} \\ a_{21} & a_{22} & a_{23} & \cdots & a_{2m} \\ \vdots & \vdots & \vdots & \cdots & \vdots \\ a_{r1} & a_{r2} & a_{r3} & \cdots & a_{rm} \end{bmatrix}. \tag{14}$$

3.2. Neural Network Interest Mining Model Design and Modeling. Use rich training samples to build a convolutional neural network model. Learn to mine valuable information and hidden features from tourism big data. The building process of the model conforms to the basic principles of the deep learning algorithm. The brief process is as follows: first, according to the architecture of the convolutional neural
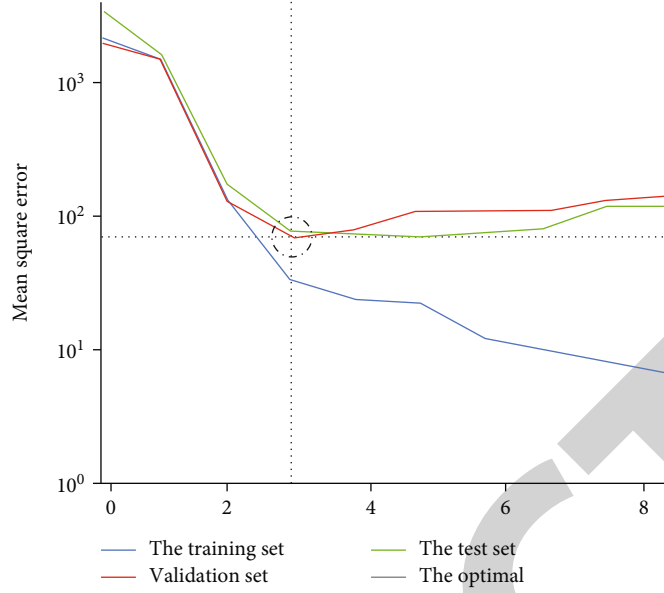
Figure 4: Neural network model training results.

network, build the model, and build the input layer, the convolution layer, the pooling layer, the fully connected layer, and the output layer. The network structure and specific construction parameters are described in detail below.

According to the classification descending vector I of the most interesting tourist attractions outputted by the neural network interest mining model, the total number of tourist attractions recommended by the system does not exceed φ set by tourists, taking one day of travel time as the research unit. When considering the richness and sufficiency of tourist experience, at least three types of tourist attractions cannot be 0. According to this rule, the classification distribution matrix A of tourist attractions is output.

$$
A = \begin{bmatrix}
a_{11} & a_{12} & a_{13} & \cdots & a_{1m} \\
a_{21} & a_{22} & a_{23} & \cdots & a_{2m} \\
\vdots & \vdots & \vdots & \cdots & \vdots \\
a_{r1} & a_{r2} & a_{r3} & \cdots & a_{rm}
\end{bmatrix}. \tag{15}
$$

According to the definition, matrix A represents the distribution matrix of scenic spots obtained by tourists in this request, the row represents a feasible scheme, and the scheme conforms to the tourists' interests and time arrangement, and the row elements represent the number of scenic spots visited by tourists under each category. The columns represent the classification of attractions. At this point, the neural network classifies tourist attractions that tourists are interested in: the work is over, and then, according to the classification distribution matrix A, combined with the income function, mine specific seed tourist attractions.

4. Result Analysis and Discussion

4.1. Experimental Data Set and Processing.
The establishment of a database for tourism resources (such as hotels and scenic

spots) is to perform statistical regression on parameters such as user retrieval times, popularity, and user feedback to explore the commonality and characteristics of scenic spots. Finding commonalities can facilitate the division of tourism resources, and finding features can make further recommendations for individuals based on the user database. Moreover, by feeding back the attention degree of the scenic spots through the above method, timely arithmetic processing can be made to predict the crowding degree of different scenic spots. In this process, the degree of crowding appears as a new parameter to further improve the recommendation accuracy; at the same time, it can be used as a basis to modify the recommendations for different users, make reasonable allocations, balance the flow of people in the scenic spots, and avoid the unbalanced situation like crowded crowds in some scenic spots and few tourists in other scenic spots.

For the characteristic data of tourists, the real users on the Mafengwo Tourism website are crawled to obtain the data format required by the experiment. All sample data must meet the following conditions: first, the crawled user level must be above level 30. The higher the value, the richer the travel experience of the user and the more valuable sample data can be provided. Second, the obtained data can only be used for the experimental research of this paper, and the data involving user privacy is strictly confidential. Third, the obtained sample data does not contain missing values. Due to the huge amount of user data on the Mafengwo Travel website, the selection of samples is more stringent. Data that does not meet the requirements and data with missing values will not be used as samples for experiments. If the amount is not enough, continue to grab samples from the user pool.

4.2. Experimental Results and Analysis

4.2.1. Model Training.
Taking the popular tourism website "Mafengwo" as the tourism data source, grab text data from the website and mine key information. After data cleaning,
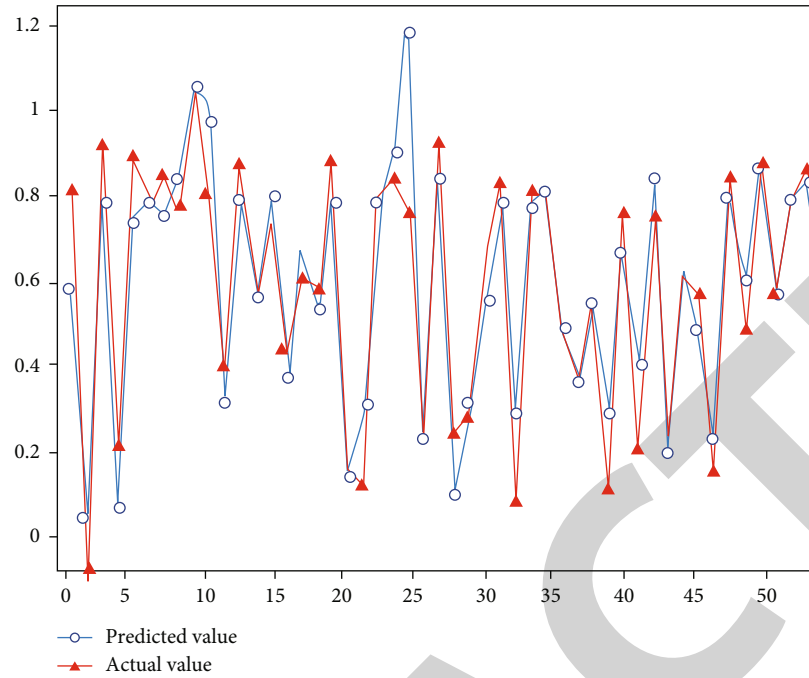
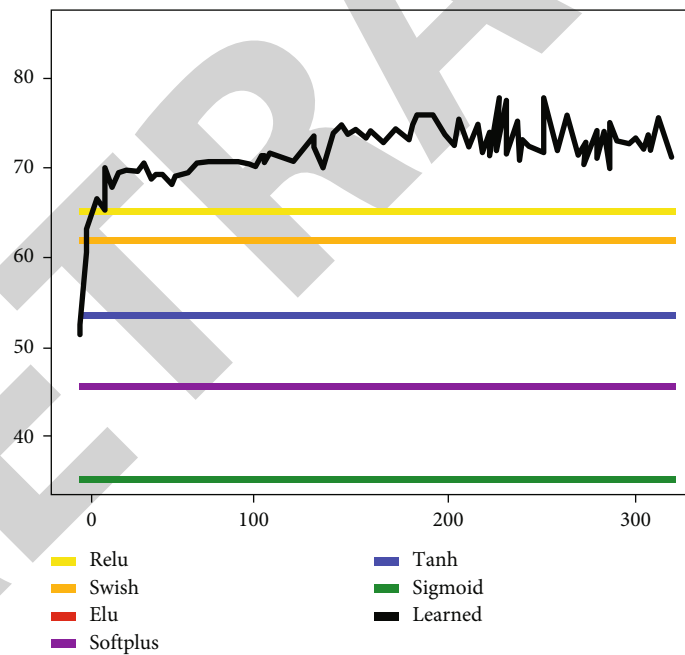FIGURE 5: The results of the optimal health care route predicted by the model.

FIGURE 6: The prediction accuracy of the model in different activation functions.

data integration, and data feature engineering, $M = 20000$ tourist samples were finally selected as the training and testing data of the convolutional neural network. The training results are shown in Figure 4. The surface in the figure has been trained for 3 epochs, and the best validation performance is 34.4082.

The basic idea of this experiment is to realize and determine an object to be studied. The accommodation point of the selected research object is defined as M, the characteristic information of the research object is represented by the X

vector, X is used as the input of the neural network, and according to the number of attractions φ visited by tourists every day, the algorithm outputs the tourist attractions of interest to the tourists according to the rules. Through matrix A and the classification and quantity sorting of confirmed tourist attractions, systematically search and mine tourist attractions with the best geographical distribution to meet the needs and interests of tourists, and finally, plan the optimal tourism based on the closed-loop structure assumption and the iterative function of tourist revenue route. The experimental results are
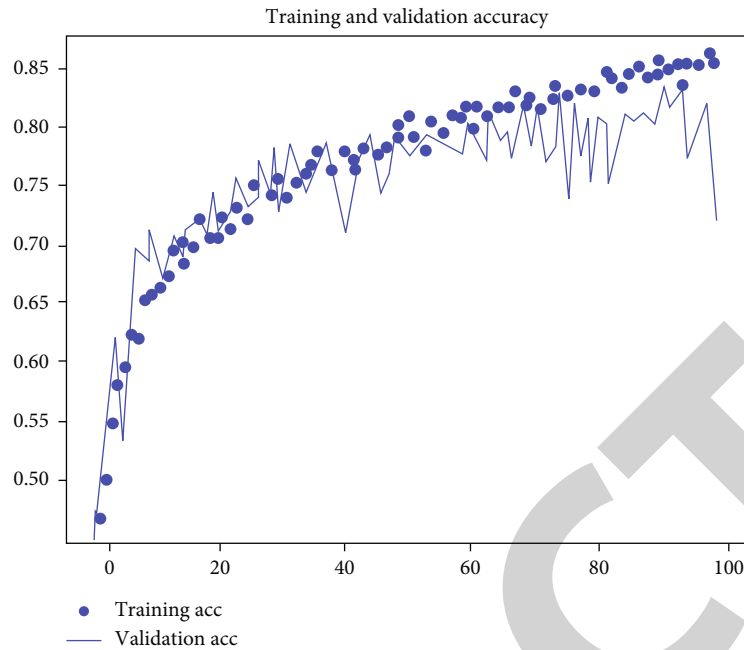
FIGURE 7: The function loss curve of the convolutional neural network in the health care tourism route.

shown in Figure 5. Figure 5 shows that the optimal health care route predicted by the neural network model in this paper is close to the real results.

The prediction accuracy of the neural network model designed in this paper under different activation functions is tested, and the test results are shown in Figure 6. On the surface of the figure, the model has the highest prediction accuracy in the learned activation function and the lowest prediction accuracy in the sigmoid function.

Figure 7 is the function loss curve of the convolutional neural network in the health care tourism route. It can also be seen from the figure that the prediction accuracy of the model in this paper is relatively high.

It can be seen from the above experimental results that the model can systematically arrange the tourist attractions output by the algorithm in order of numbers and display the names of the attractions on the right side of the attractions. Attractions are connected by red directed lines, which makes it easier for tourists to know the order of visiting each attraction, which increases the ease of use of the intelligent tourism recommendation system. Factors such as age stage are uneven, so straight lines are used to replace curved connections, which avoids the misunderstanding of the curved road curves for tourists. Using a simple straight line can allow tourists to have a clearer understanding of the entire route, make it easy to get started, increase tourists' favourability to the system, and further enhance user stickiness.

5. Conclusion

Due to the late start of the development of wellness tourism in China, the construction of the discipline system is not comprehensive enough, and the level of research is far behind that of foreign countries. The series of policies are also aimed at promoting the development of people's physical and mental

health and paving the way for an all-round well-off society. The development of wellness tourism is a new opportunity under the current tourism situation, which is conducive to building a win-win situation in many aspects such as national health, eco-tourism, cultural heritage, and industrial adjustment. In this paper, the related concepts and theoretical basis of health care tourism are combed and studied, and the optimal travel route is obtained by analyzing the health care tourism route through the neural network algorithm. And through experiments to analyze and verify the prediction performance of the model, it is found that the prediction performance of the model used in this paper is better.

Data Availability

The figures and tables used to support the findings of this study are included in the article.

Conflicts of Interest

The authors declare that they have no conflicts of interest.

Acknowledgments

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