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Retraction

Retracted: Analysis of Professional Psychological Adaptability of Students Majoring in Hotel Management and Digital Operation for Higher Vocational Education under Deep Learning

Wireless Communications and Mobile Computing

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This article has been retracted by Hindawi following an investigation undertaken by the publisher [1].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.

In addition, our investigation has also shown that one or more of the following human-subject reporting requirements has not been met in this article: ethical approval by an Institutional Review Board (IRB) committee or equivalent, patient/participant consent to participate, and/or agreement to publish patient/participant details (where relevant).

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.

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[1] J. Li, "Analysis of Professional Psychological Adaptability of Students Majoring in Hotel Management and Digital Operation for Higher Vocational Education under Deep Learning," *Wireless Communications and Mobile Computing*, vol. 2022, Article ID 7114630, 10 pages, 2022.

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Research Article

Analysis of Professional Psychological Adaptability of Students Majoring in Hotel Management and Digital Operation for Higher Vocational Education under Deep Learning

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Under the background of rapid and comprehensive development of society and technology, the accommodation industry has shown a relatively prosperous development trend, which has promoted the reform and development of the hotel industry. The scale, quantity, and mode of hotel enterprises have undergone great changes, and there has been a structural surplus. Among them, the most obvious change is the integration of digital technology, which integrates technology and hotel services to form a new hotel format. Combined with a series of policy encouragement trends promulgated by the state, the hotel management and digital operation majors in higher vocational education are more targeted for the cultivation of talents, which can cultivate talents with innovative ability and industry skills in the hotel industry. In this context, it is very important to carry out an adaptive analysis on the professional psychology of students majoring in hotel management and digital operations, which can tap their potential and promote the improvement of teaching quality. Aiming at this subject, this work proposes a neural network (PPANet) for analyzing the psychological adaptability of students in this major. Aiming at the problem that CNN cannot capture the periodicity and trend of data, this work proposes a multiscale deep residual network. The network adds convolution kernels with different scales to learn data features and enhances generalization ability and improves accuracy through residual short-circuit structure and deep structure. Furthermore, based on ReLU, this work proposes an improved IReLU activation function with better learning properties. The systematic experiment verifies the feasibility of applying PPANet to the analysis of professional psychological adaptability of students majoring in hotel management and digital operations.

1. Introduction

Driven by artificial intelligence, big data, and cloud computing, business forms are developing in a digital direction. The hotel industry is a representative of labor-intensive industries, and it is relatively slow to develop in the wave of digital transformation. More and more hoteliers are realizing the importance of digital transformation for hotel development. In response to these problems, digitalization is undoubtedly an opportunity for the hotel industry to break out of the cocoon and become a butterfly. In the digital age, everything is data. Without data collection and analysis, it is impossible to improve work efficiency and adapt to the development of the times. Without the relevant talents to analyze and process data, the hotel industry will not be competitive in the future. Therefore, the digital operation of the hotel industry is imperative. The hotel management and digital operation majors in higher vocational education, as the reserve talent pool of the hotel industry, must keep up with the pace in time and complete the teaching and learning of hotel digital operation as soon as possible. Based on the training of traditional hotel management talents, the teaching content of digital operation has been added to form the major of hotel management and digital operation. It keeps pace with the times and cultivates new talents in this major to ensure an adequate supply of hotel talent resources [1–5].

Innovative elements are essential in hotel management and digital operations, and as service workers, they should have a spirit of service innovation. Therefore, in professional teaching, it is necessary to actively adopt innovative teaching methods to cultivate the service innovation spirit of professional students, urge students to do a good job in hotel service work in future work practice, and lay the foundation for the improvement of hotel service level. In addition, most courses in the teaching of hotel management and digital operations focus on the cultivation and guidance of students' practical skills, while ignoring the teaching of hotel management capabilities. This leads to the lack of management ability of many students; it is difficult to meet the actual needs of hotel management, which greatly limits the future career development possibilities of professional students. In the new era, the cultivation of professional talents of hotel management and digital operation in higher vocational colleges should pay attention to the formation of management innovation awareness, strengthen the training of management ability, and guide students to master hotel management skills through diversified teaching methods, so as to form a standardized management awareness. And then do a good job in the digital operation management of the hotel to ensure orderly operation and development. To meet the real needs of the industry for professional talents, we must not only attach importance to the cultivation of specific capabilities of hotel management and digital operation but also strengthen the guidance and cultivation of general capabilities. Only in this way can it adapt to the various needs of the hotel's transformation, upgrading, and development [6–9].

Various studies have been conducted, wherein deep learning techniques have been implemented in higher education. As an example, study in [10] highlighted deep learning as a process of automating intellectual education based on image detection. The use of this technique in ecological evaluation based smart education level analysis and image detection is discussed. The study in [11] focused on development and analysis of a framework of intelligent education system for higher education using deep learning. The study used a face detection algorithm based on multitask convolutional neural network to track the knowledge learning status of the students on the basis of memory augmented neural network.

At present, there are also some problems in the professional training of hotel management and digital operation. In the training of hotel management and digital operation professionals, the positioning target of talents is not clear enough, which leads to the unsatisfactory effect of final talent training. The demand for talents focuses on comprehensiveness and comprehensiveness. It is necessary to have a solid professional knowledge base and skilled professional skills, as well as to master the digital operation ability. In addition, there are also high requirements in terms of comprehensive quality; the purpose is to fully adapt to the development needs of the intelligent hotel industry at the current stage. However, due to the lack of accuracy in the setting of teaching objectives in actual teaching, the ability of digital operation is regarded as a simple computer technology operation, etc., which greatly affects the effective training of hotel management and digital operation professionals. The major of hotel management and digital operation is an emerging major under the premise of hotel transformation and upgrading, which brings challenges to the teaching work of professional teachers. This requires teachers to have the relevant technical capabilities for digital operations. Considering the actual situation, the school's teachers are not sufficient in this regard, and the construction of professional teacher teams is not perfect. This cannot provide complete study guidance for professional students and has a restrictive impact on the effective cultivation of new talents. In order to maintain the effect of talent training in professional teaching, some schools choose to hire off-campus personnel to assist in teaching. Although the level of professional teaching is improved, there are situations that rely too much on off-campus talents and neglect the construction of on-campus teachers. The strength of the teaching staff is still stagnant. Under this circumstance, it is difficult to ensure the systematic professional learning of students, which also adversely affects the quality of their learning [12–15].

The unique contribution of the proposed framework includes the following:

(i) Development of a multiscale deep residual network that adds convolutional kernels with different scales to learn data features that generates results with enhanced accuracy using residual short-circuit structure and deep structure

(ii) An improved ReLU activation function is proposed termed as IReLU having enhanced learning properties

(iii) A neural network, PPANet, is proposed to analyze the psychological adaptability of the students majoring in hotel management and digital operation

2. Related Work

Literature [16] believes that psychological adaptation is the behavioral characteristic exhibited by individuals in the interaction with the environment, when they actively adjust the internal body and psychological state. Literature [17] proposes that psychological adaptation refers to the process in which the subject makes an active response through the self-regulation system when the external environment changes. In this process, the subject can make psychological activities as well as behaviors more in line. This enables the subject and the environment to achieve a new balance, and psychological adaptation is a process of change manifested by individuals in the face of changes in the environment. Literature [18] believes that psychological fitness is an active response of individuals through cognitive evaluation when external conditions change. Literature [19] proposed that psychological adaptability is an ability, which is the ability of an individual to actively react to the environment in the process of interaction with the surrounding environment to achieve a balance between the individual and the environment. Literature [20] believes that psychological adaptability is a representation of the interactive relationship between an organism and the external environment, a process in which the external environment challenges and exerts an influence on the organism, and the organism reacts to the external environment to adjust its relationship with the environment. Literature [21] proposed that psychological adaptation is the balance of positive and negative emotions of an individual, and it is a reflection of the degree of satisfaction in all aspects of an individual's life.

Literature [22] believes that good psychological adaptability is an individual's ability to handle the relationship between positive emotions and negative emotions, an important condition to ensure the balance of the body, and an important indicator of the quality of human life. In literature [23], psychological adaptation is divided into internalized behavior problems and externalized behavior problems. Among them, internalized problems included loneliness, depression, withdrawal, lack of self-confidence, anxiety, shyness, and negative self-evaluation. Externalizing problems include aggressive behavior, antisocial behavior, and hyperactivity.

In the literature [24], the scores of the four subscales of anxiety, depression, paranoia, and sensitivity were added together as indicators of psychological paralysis. Self-esteem, internal control, emotional balance, and psychological symptoms were used as indicators and dependent variables of psychological adaptation. In the study on the psychological adaptation of the floating population, the literature [25, 26] used three indicators of depression, self-esteem, and life satisfaction to investigate the psychological adaptation of the floating population. Literature [27] framed the scope of children's psychological adaptation in combination with the particularity of children: emotional experience, interpersonal experience, self-evaluation, and reaction style. Literature [28] summarizes a large number of research results and proposes that when examining the psychological adaptation of individuals, aspects such as loneliness, depression, anxiety, subjective well-being, positive and negative emotions, and subjective vitality are often used as research dimensions. Reference [29] divides adaptation into the following categories from different perspectives. Adaptation can be classified as either to the natural environment or to the social environment, depending on the item to which it is applied. Physiological adaptation and psychological adaptation are the two main types of adaptation. In terms of the degree of adaptation, it can be split into two categories: superficial adaptation and deeper adaptation. Unconscious and conscious adaptation can be distinguished based on the level of awareness in the process. Adaptation can be classified as either active or passive depending on the person's mindset during the process. Literature [30, 31] believes that the mechanism of psychological adaptation is a dynamic process composed of cognitive adjustment, attitude change, and behavior selection. Therefore, psychological adaptation can be divided into active adaptation and passive adaptation, positive adaptation and negative adaptation, internal adaptation and external adaptation, and narrow adaptation and broad adaptation. Reference [32] proposed two forms of adaptation, namely, negative adaptation and positive adaptation. Negative adaptation occurs when humans and the environment interact in a negative way. Negative aspects of the environment are recognized and adjusted for by individuals, while favorable aspects of the individual are suppressed. It shows withdrawal, pessimism, disappointment, depression, and other bad states. Active adaptation is an individual actively adjusting his/her incompatible behavior with the environment, inspiring the individual's initiative and enthusiasm, and enabling better self-development.

Reference [33] proposed a deep learning approach in information systems and hospitality management degree programmes. The study included use of a questionnaire tool, and statistical tests were conducted to compute the differences between the samples. The deep learning technique was used to analyze students' perception if their learning environment

Reference [34, 35] developed a HEgame application, wherein the student's satisfaction was influenced by the application features that further impacted the prodeep learning approaches. The study concluded the fact that gamified applications impacted prodeep learning approaches, wherein students intended to expose their private learning-related information to their friends

3. Method

It is very important to carry out an adaptive analysis on the professional psychology of students majoring in hotel management and digital operations, which can tap their own potential and promote the improvement of teaching quality. This work applies CNN to the analysis of psychological adaptability of students in this major.

3.1. CNN Algorithm. An algorithm known as a CNN is a feedforward neural network with convolution operations and a deep structure. NLP and CV are just two of the many applications of CNN. The input layer, the hidden layer, and the output layer are all components of a neural network. The hidden layer gets data from the input layer, which in turn sends it on. The hidden layer is the core of the neural network. The biggest difference between different neural networks is the difference in the hidden layer. The hidden layer completes functions such as feature extraction and data prediction. The output layer outputs the prediction result, which can be a classification problem or a regression problem.

Convolution layer is to perform convolution operations on data by using sliding convolution kernel to realize the feature extraction. The size of convolution kernel can be set, and the convolution kernels of different scales obtain local information of different scales and then generate different feature maps. Multiple convolutional layers are connected in series, and the convolution operation can be performed on the local feature map extracted by the previous layer, and global features can be extracted through local features. Global features are associated with the last category information, representing unique features among different categories. Compared with ANN, convolutional layers greatly reduce parameters of the network. The convolution operation can be performed in parallel, which greatly reduces the training time and improves the training accuracy and efficiency.

There is generally a pooling layer after the convolutional layer, and the feature dimension extracted by the convolutional layer is very large, which contains a lot of useless information and noise. Going straight to the model's predictions tends to be ineffective and takes a long time to train. The pooling layer can further extract useful feature information, reduce parameters, and reduce the risk of overfitting of the model. There are two commonly used pooling layers: average pooling layer and max pooling layer. Average pooling layer takes average of values in target area as eigenvalue of area, and the maximum pooling layer takes the maximum value in target area as eigenvalue of area. The average pooling layer focuses on global information, while the max pooling layer mainly extracts the part with the largest difference in features. Connecting the pooling layer after the convolutional layer can achieve feature dimensionality reduction, reduce network parameters, and reduce the risk of model overfitting.

The fully connected layer is composed of a series of neuron nodes. Connect features from convolutional and pooling layers to the output layer for classification and regression prediction. The fully connected layer generally includes full connection, activation function, reshape layer, and merge layer. To improve generalization ability, most of fully connected layers use Dropout and BN regularization techniques. After the full connection, the output layer is connected through the Sigmoid activation function or the Softmax activation function.

CNN has been used as a popular approach in many higher education-based studies. As an example, the study in [36] developed a terminal data acquisition tool to collect the perception information of devices involved in the learning environment and also captured learners' touch screen operation-related data on the basis of virtual simulation experiment. The CNN model was used to process the sensor data to analyze the learning behavior of the students. The study in [37] implemented a CNN model to analyze students' engagement and the practicality of its implementation in distance education.

3.2. ResNet Algorithm. ResNet is a deep convolutional neural network with residual structure, including ResNet50 and ResNet101 and other networks. Researches try to continuously increase the depth and width of the network to improve the effect of the model, but a wider and deeper network will lead to problems such as gradient dissipation and gradient explosion, which in turn lead to a decrease in the performance of the network. The difference between ResNet and other CNNs is that the residual junction is used, and the original input information can be directly transmitted to the subsequent output layer. That is, a certain proportion of the information in the previous layer can be transmitted to next layer without matrix multiplication and nonlinear transformation. ResNet introduces a residual structure, as shown in Figure 1; the layers are directly connected, which greatly alleviates the problems that the network is difficult to converge and the gradient dissipates.

ResNet uses the residual structure as a unit and stacks multiple residual structures. When inputting data, the features learned through residuals is:

$$y = x + F(x). \quad (1)$$

Residual structures are easier to learn directly than raw features. When the residuals are zero, the stacking layers only do the identity mapping. The stacked layers continue to learn based on the features of the previous layer, and the residuals represent new features, thereby improving the performance. ResNet greatly alleviates problems of gradient dissipation and gradient explosion through the residual structure. Each network layer is directly connected to the previous layer, which optimizes the objective function and realizes the reuse of features, thereby improving the prediction effect. However, the input data of the network is two-dimensional data, and the network has more than 50 layers, and parameters are huge. These are not suitable for directly applying ResNet to the analysis of occupational psychological adaptability of students majoring in hotel management and digital operations in higher vocational education. The one-dimensional data format is 1D time series data. ResNet algorithm is extremely appropriate in case of networks with large number of layers, wherein the data can be trained easily without increasing the error percentage in training. Also, ResNet helps in tracking of the vanishing gradient problem using identity mapping and uses batch normalization which adjusts the input layer thereby increasing the performance of the network. ResNet algorithm has been used in various domains. As an example, the study in [35] used ResNet classifier for the detection of specific language impairment (SLI) in children. The study proposed an automated approach to SLI detection using log-power spectra of speech samples. The study included the use of LANNA children speech corpus having healthy controls and children diagnosed with SLI were used for the development of the algorithm. The deep neural network-based ResNet was used for the purpose of classification, and the accuracy rate generated was found to be 99% in case of speaker-independent scenario.

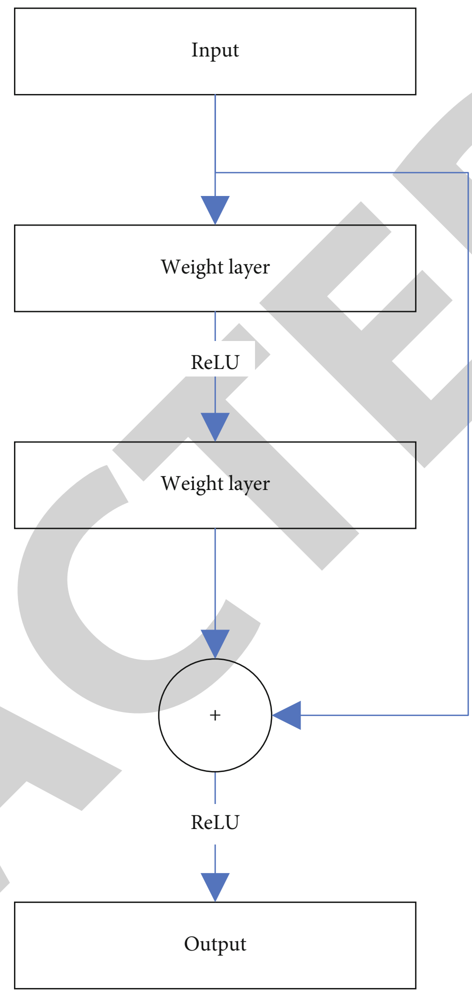

Figure 1: Residual structure.

3.3. Proposed PPANet Algorithm. ResNet is suitable for two-dimensional data and has a huge amount of parameters, so it is not suitable to be directly used in the dataset of occupational psychological adaptability analysis of students majoring in hotel management and digital operations in higher vocational education. This paper improves ResNet to make it suitable for one-dimensional data and simplifies the network structure to reduce the risk of overfitting. Improve ResNet to 1D network and change 2D convolution and pooling to 1D convolution and 1D pooling. The PPANet network includes one-dimensional convolution, one-dimensional pooling, BN, and Dropout layers. This can make full use of the residual structure of the ResNet network, realize the reuse of features, and improve the prediction performance of the model.

1D CNN generally uses a convolution kernel of a specific scale, so the extracted features are not comprehensive, resulting in poor final prediction results. At the same time, compared with the commonly used data of ResNet network, the dataset of this work is very small, and maintaining the 50-layer structure of ResNet network will cause the problem of model training and overfitting. In order to extract more feature information, the text proposes a multiscale network. The ResNet of PPANet is simplified, and the shallow convolution in the PPANet network utilizes smaller convolution kernel to extract local features. The deep convolution utilizes large convolution kernels and utilizes large convolution kernels for extracted local features to extract global features. Finally, the residual structure is used to connect the extracted local features with the global features, and the features extracted by different convolution kernels are combined, and the prediction is made through the fully connected layer. The model uses BN and Dropout layers in the fully connected layer to reduce network parameters and enhance the generalization ability. To enhance learning ability, a multichannel 1D network structure is added, and various channels extract different feature information through convolution kernels of different sizes. When the input data is complex, more comprehensive feature information can be extracted by adding other channels, thereby improving learning ability and prediction effect. PPANet pipeline is demonstrated in Figure 2.

The first layer of convolution is a small-scale convolution, which extracts local features of input. The second layer of convolution uses a large-scale convolution kernel, which uses a large convolution kernel on the extracted local features to extract global features. The process of analyzing occupational psychological adaptability of students majoring in hotel management and digital operation on the Internet can be divided into the following steps. Input the dataset of occupational psychological adaptability, and use small-scale shallow 1D convolution to extract local features from the original data. Then, large-scale deep convolution is utilized to further extract global features, and the short-circuit mechanism is used to add up the shallow features and deep features, and analyze them through the pooling layer and the fully connected layer. The idea of multiscale is to increase the number of channels for extracting features, and use multiple sets of convolution combinations to extract richer and more comprehensive feature information. Finally, the features of different layers are connected, pooled, and fully connected for classification. The network can reuse features, interact with features, and obtain local features and global features. The model extracts more useful features and improves performance.

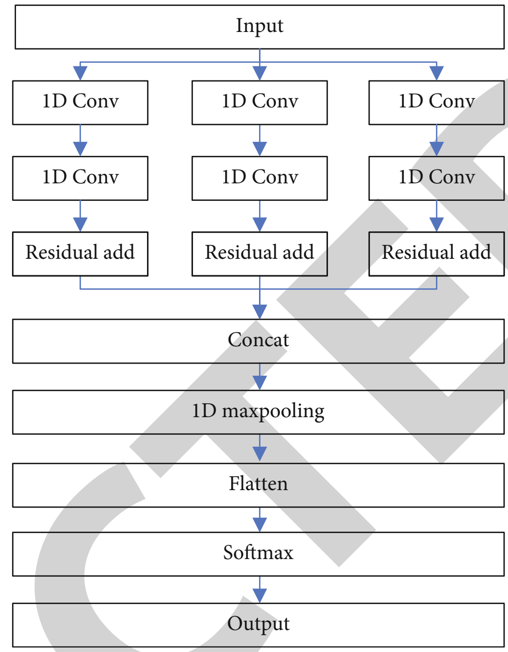

Figure 2: PPANet pipeline.

Table 1: The data feature detail.

Feature	Name
Self-efficacy	X1
Resilience	X2
Psychological optimism	X3
Psychological satisfaction	X4
Self-emotion	X5
Psychological adjustment	X6
Emotional application	X7
Psychological capital	X8

The activation function takes the signal output by the previous unit and converts it into some form that can be received by the next unit. Activation functions are very important for neural network models to learn and understand very complex and nonlinear functions, which introduce nonlinearity into neural networks. Through the activation function, the neural network has nonlinear characteristics and can theoretically approximate any nonlinear function. In conclusion, activation selection has always been a necessary architectural decision for neural networks, lest the network become a deep linear classifier. At present, the ReLU function is the most widely used activation function in CNN, which solves the problem of gradient dissipation, but because the negative axis value of the function is zero, the Dead ReLU problem is introduced. The major disadvantage of ReLU function is that it is nondifferentiable at zero, and it is unbounded. The gradients in case of negative input are zero, and hence, for activation in that region, the weights do not get updated during back propagation leading

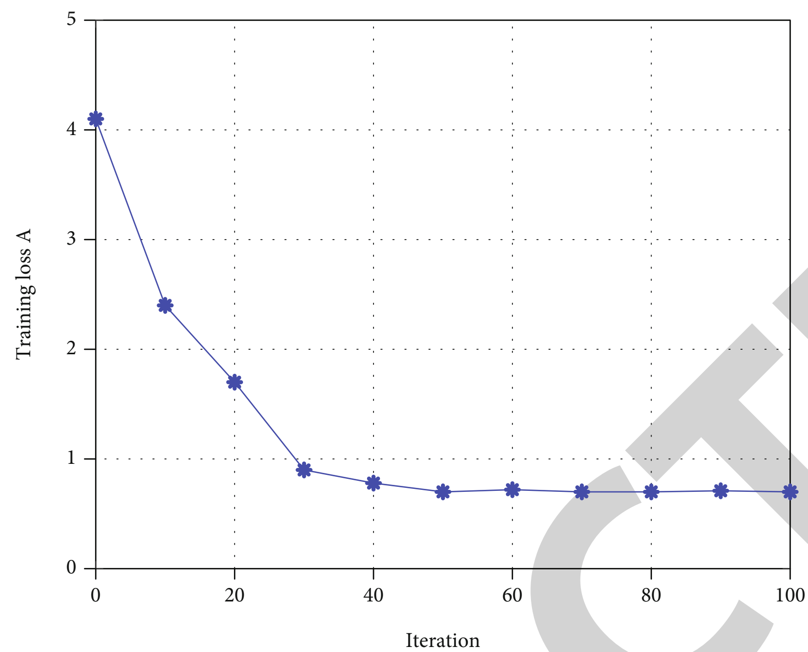

Figure 3: PPANet training loss.

Table 2: Evaluation with other methods.

Method	Precision	Recall
BP	85.1	81.7
CNN	88.3	86.9
ResNet	90.2	88.9
PPANet	93.8	92.1

to the aforementioned scenario of creation of dead neurons that never get activated. This results in that some neurons cannot be activated, that is, the corresponding parameters cannot be updated. At the same time, the output of the ReLU function is not zero-mean, which makes the model converge slowly. Based on the ReLU function, this paper proposes a new activation function IReLU.

$$\mathrm{IReLU}(x) = \begin{cases} x, & x \geq 0, \\ \dfrac{1 - \exp(-x)}{2(1 + \exp(-x))}, & x < 0. \end{cases} \tag{2}$$

IReLU can avoid vanishing gradients with positive labels, but IReLU has better learning properties compared to units with other activation functions. Compared with ReLU, the negative axis of IReLU is nonzero, which makes the output of the function approach zero, which can make the convergence speed faster. The unit natural gradient differs from the normal gradient by the bias offset term, which is proportional to the average degree of activation of incoming units. Although other activation functions also have negative values, they do not ensure a robust denoising state. IReLU saturates to negative values with small inputs, reducing the spread of variation and information.

The loss used in this work is the cross-entropy loss; the optimizer adopts the Adam method.

$$\begin{aligned} \mathrm{loss} &= -\sum_{i=1}^{N} \hat{y}_i \log y_i, \\ m_t &= u m_{t-1} + (1 - u) g_t, \\ n_t &= v n_{t-1} + (1 - v) g^2. \end{aligned} \tag{3}$$

The formula for eliminating bias is:

$$\begin{aligned} \hat{m}_t &= \frac{m_t}{1 - u^2}, \\ \hat{n}_t &= \frac{n_t}{1 - v^2}. \end{aligned} \tag{4}$$

4. Experiment

4.1. Dataset. The dataset used in this work experiment comes from the statistical data of occupational psychological adaptability analysis of students majoring in hotel management and digital operations in higher vocational colleges. It contains a total of 32,198 training samples and 13,294 test samples. The characteristic distribution of each piece of data is shown in Table 1, and the corresponding label is the student's occupational psychological adaptability level. Precision and recall are the evaluation metrics in this paper.

4.2. Evaluation on PPANet Training. First, the network training process of PPANet is analyzed, that is, the training error of PPANet is analyzed, as illustrated in Figure 3.

As the number of iterations increases, the loss gradually decreases. After reaching 50 iterations, the training loss tends to converge.

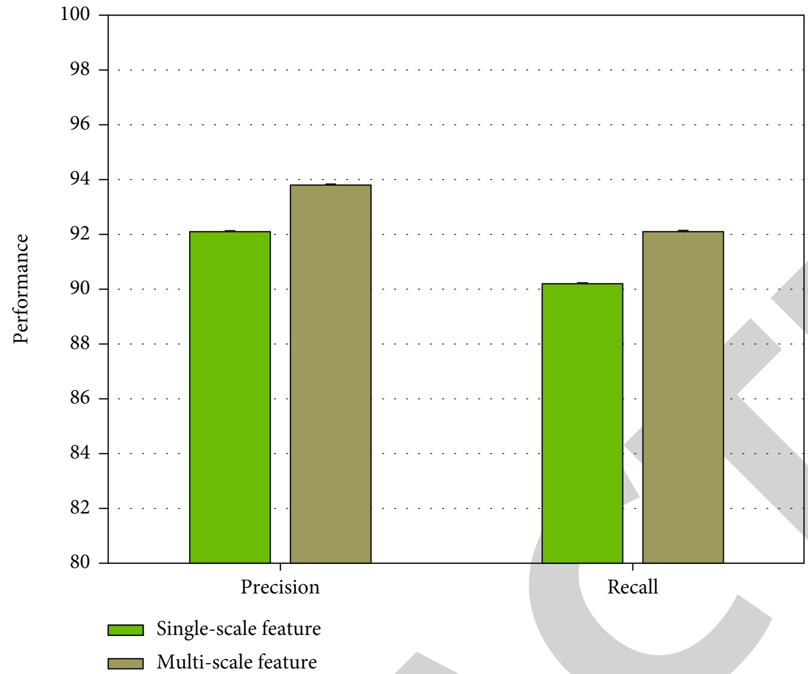

Figure 4: Evaluation on multiscale feature.

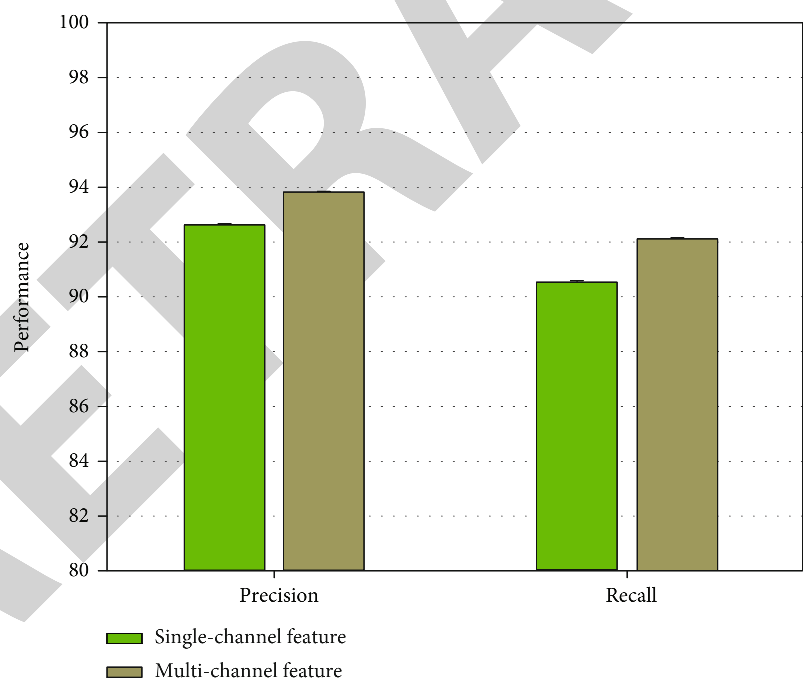

Figure 5: Evaluation on multichannel information.

4.3. Evaluation with Other Method. To verify the feasibility of the PPANet method, it is compared with the BP, CNN, and ResNet methods, and the comparison results are demonstrated in Table 2.

Compared with other professional psychological adaptability analysis methods for hotel management and digital operations majors in higher vocational education, PPANet achieves 93.8% precision and 92.1% recall. Compared with ResNet, the performance gains of 3.6% and 3.2% are obtained, respectively.

4.4. Evaluation on Multiscale Feature. The proposed PPANet adopts multiscale features. To verify the effectiveness of this measure, the single-scale and multiscale features are compared, respectively, and the comparison results are illustrated in Figure 4.

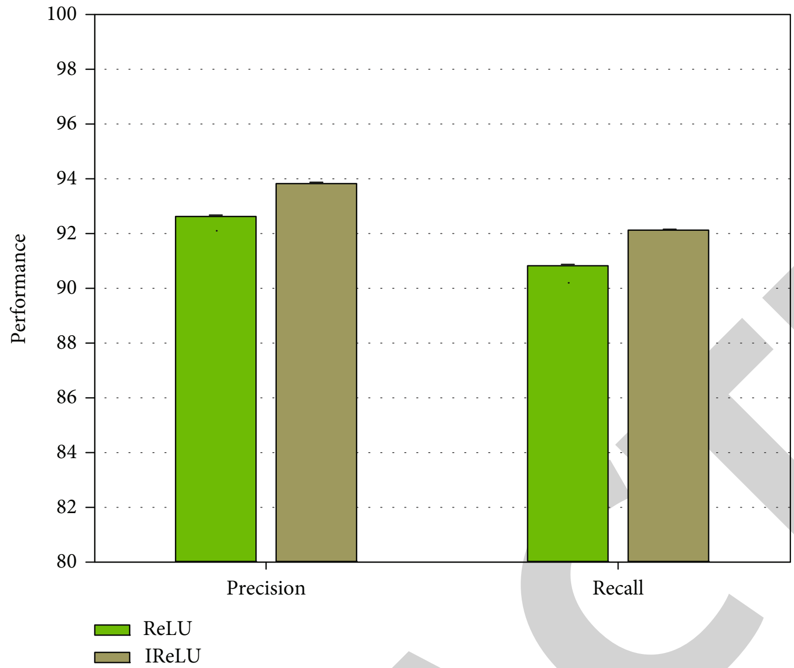

Figure 6: Evaluation on IReLU.

Table 3: Evaluation on training batch.

Batch size	16	32	64	128
Precision	92.5	93.8	93.3	93.0
Recall	91.3	92.1	91.8	91.4

Compared with multiscale features, precision and recall using single-scale features drop by 1.7% and 1.9%, respectively. This shows that multiscale features can enhance the discriminativeness of features.

4.5. Evaluation on Multichannel Information. The proposed PPANet adopts multichannel features. To verify the effectiveness of this measure, the single-channel and multichannel features are compared, respectively, and the comparison results are illustrated in Figure 5.

Compared with multichannel features, precision and recall using single-channel features drop by 1.2% and 1.6%, respectively. This shows that multichannel features can enhance the discriminativeness of features.

4.6. Evaluation on IReLU. This work improves the traditional ReLU activation function. To verify the superiority of the improved IReLU function, the performance of using ReLU and using IReLU is compared, as illustrated in Figure 6.

Compared with IReLU function, precision and recall using traditional ReLU drop by 1.2% and 1.3%, respectively. This shows that improved IReLU function can enhance the network learning.

4.7. Evaluation on Training Batch. In neural network training, batch size is a variable value. This work compares the effects of different batch sizes on the experimental results, as demonstrated in Table 3.

As the batch size increases, the network performance first increases and then decreases. When the value is 32, the highest precision and recall can be obtained.

5. Conclusion

Higher vocational education is an important way for the development and progress of vocational and technical education, and the orientation of talents cultivated by hotel management majors should meet the needs of current social employment. According to the government's basic requirements for the construction of higher vocational colleges and the market's demand for talent capabilities, the training path for students majoring in hotel management and digital operations in higher vocational education should be separated from the original training methods in higher vocational colleges. The hotel management and digital operation major in higher vocational education is more targeted for the cultivation of talents, which can cultivate talents with innovative ability and industry skills in the hotel industry. It is very important to carry out an adaptive analysis on the professional psychology of students majoring in hotel management and digital operations, which can tap their own potential and promote the improvement of teaching quality. In this context, this work applies deep learning to the analysis of psychological adaptability of students in this major. First, a multiscale residual network is proposed for the problem that CNN cannot capture the long-term trend change law. The network adds convolution kernels of different scales to extract data features and enhances the generalization ability and accuracy of the model through residual short-circuits structure and deep structure. Furthermore, a novel activation function IReLU is proposed. The activation function adds an exponential function to the negative semiaxis to improve the learning ability. The systematic experiment verifies the feasibility of applying

PPANet to the analysis of professional psychological adaptability of students majoring in hotel management and digital operations. The PPANet framework is evaluated using the precision and recall metrics alone and other metrics, namely, accuracy, sensitivity, and specificity have not been included in the study. The superiority of the proposed approach could be further justified if these metrics could also be included as part of future scope of research.

Data Availability

The datasets used during the current study are available from the corresponding author on reasonable request.

Conflicts of Interest

The author declares that there are no conflicts of interest.

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