

## Research Article

# Internet Plus Innovation and Entrepreneurship Education Model Based on Machine Learning Algorithms

**Xiaoxia Chen** 

*Yiwu Industrial & Commercial College, Yiwu 322000, Zhejiang, China*

Correspondence should be addressed to Xiaoxia Chen; [chenxx321@ywicc.edu.cn](mailto:chenxx321@ywicc.edu.cn)

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Innovation and entrepreneurship is a spiritual attitude. With the dissemination and wide application of the concept and technology of “Internet Plus,” Internet Plus innovative thinking has had a strong impact on innovation and entrepreneurship education, such as teaching concepts, changes in teaching methods, optimization of teaching staff and curriculum systems, and resource sharing. Therefore, according to the actual needs of innovation and entrepreneurship teaching in colleges and universities, this paper combines the concept of Internet and college education with the help of machine learning algorithms to build a new education system. First, the article designs the overall platform architecture and core business processes and develops and implements front-end and various platform functions. The system includes different modules such as preschool skill diagnosis, online learning, stage testing and evaluation, information and resource sharing, team building and project implementation management, and so on. Then, the experiment shows that the precision rate, recall rate, and F1 value of the system are all high, indicating that the system is stable and efficient. Finally, it briefly expounds the development strategies of the Internet Plus education model under the influence of relevant systems, which will help students and teachers develop innovation and entrepreneurship theories and improve students’ knowledge quality. The combination of Internet technology and innovation and entrepreneurship teaching can make innovation education more in line with the current learning needs and promote the improvement of entrepreneurship ability.

## 1. Introduction

Due to the vigorous promotion of national policies, colleges and universities are gradually promoting the “Internet +” Innovation and Entrepreneurship Competition launched by the Ministry of Education in 2015 through reform demonstrations, competition incubation, and industry-university-research cooperation [1, 2]. In 2018, the country launched a series of activities such as “College Student Maker Show,” “Red Youth Dreaming Journey,” and “Maritime Silk Road.” Through innovation and entrepreneurship, education and rural revitalization strategies, and the concerted efforts of the government, enterprises, and schools, the influence and motivation of the reform have been greatly enhanced, and the relevant innovation and entrepreneurship teaching models and supporting teaching platforms have been gradually improved [3, 4]. At present,

the globalized economy has become an unchangeable reality, and the Internet has become inseparable from people’s lives. The scale of mobile Internet users reached 8.47%. The innovation and development of integrating “Internet +” 2.0 has entered the life of people in society. In every respect, it is imperative. In the context of the development of education informatization 2.0, guided by the “Internet +” strategy, China has re-deconstructed education, established smart teaching activities, balanced resource allocation, and designed various organizational forms to achieve a new ecosystem and talent training [5, 6]. The goal of smart campus construction in the context of the new form has greatly changed the contemporary education model, fundamentally changed the object, environment, model, and resources of higher education, and brought new opportunities and platforms [7]. Therefore, by introducing machine learning algorithms, this paper builds an

Internet + innovation and entrepreneurship education system and strives to produce good practical results for college students to form innovative spirit, cultivate entrepreneurial awareness, pioneer and cultivate innovative and entrepreneurial spirit, and collaborate to enhance the value of independent learning. Also, to a certain extent, it improves the theory and practice of college students' innovation and entrepreneurship education. Entrepreneurship is realized with specific guidance and charter arrangements to guide students to go further on the road of innovation and entrepreneurship. It also provides a specific reference for the learning, course organization, and operation of other platforms of the same type, thereby promoting the development of educational model informatization results and providing a certain information basis for other project designs in related fields.

## 2. Related Work

Through the visits and investigations of the functional departments of teaching management, the literature studies the curriculum evaluation model. It covers the dimension of the teaching team, obtains sufficient teaching content and teaching resources, and establishes a curriculum evaluation index system for teachers' behavior, teaching level, and other dimensions [8]. A system for observing the results of research activities and subsequently determining the data structure for multi-dimensional assessments, including students, teachers, peer experts, and instructional supervisors is developed. The literature designs a prototype teaching management system running under Windows 10 environment [9]. In terms of data collection and management, the data warehouse model is designed using SQL Server 2012 tools; the data sources are determined to include undergraduate course platform, teaching operation management, questionnaire survey platform, and so on [10]. The literature adopts MVC model design, AJAX, ASP, NET, and other technologies, and adopts BP neural network and fuzzy comprehensive evaluation methods to build a comprehensive evaluation analysis model of comprehensive evaluation factor set and multifactor and related factor index set. And based on this data background, they designed and improved student education [11, 12]. Through the analysis of the management evaluation system and evaluation results, it can be seen that colleges and universities pay more attention to intelligence education, less attention to moral education, more attention to performance, less attention to ability, more attention to the number of posts, and less attention to personality development [13]. From the analysis of student management, it can be seen that many college students have lack of values, which is inconsistent with the talent demand structure needed by the current society [14]. The literature puts forward coping strategies based on multi-factor analysis, including changing educational concepts, deepening education reform, changing student education management methods, strengthening college self-education evaluation, and further improving college student management assessment system for student work [15]. The literature designs architectures that separate computing and storage to help

businesses properly rent the appropriate computing resources. By combining containerization technology with Docker and Kubernetes, it helps to dynamically scale services and reduce operational costs [16].

## 3. Internet + Innovation and Entrepreneurship Education System Design

*3.1. System Architecture.* In this paper, the system adopts a three-layer structure: data access layer, business logic layer, and presentation layer, as shown in Figure 1.

*Presentation Layer.* The user interface has a strong self-adaptive expansion function, and multi-terminal access input such as portal website, mobile phone application, WeChat application, and WeChat public account is designed.

*Business Logic Layer.* It is the core of the platform, providing functions such as user registration and authority management, information release and push, online learning, online submission and coaching of new projects and businesses, teamwork requirements and release management, project incubation and release, and so on. It also includes learning behaviors analysis, intelligent group analysis, skill learning direction assessment, and so on.

*Data Access Layer.* Database design mainly includes user database, course learning resource database, text information database, project management database, skill model database, and so on, which are used to judge the appropriate courses based on students' learning ability.

*3.2. System Function Analysis.* In order to sort out the system requirements more accurately, this paper uses the questionnaire survey, including Internet + information module; Internet + teaching module; Internet + sharing module; Internet + team module; Internet + project module; Internet + incubation module. The specific business function modules are as follows:

*3.2.1. Front-End Design.* Page design: front-end website; mobile phone page design; information resources: relevant information policy announcements and resource sharing; online courses: introduction to innovation and entrepreneurship theory courses, Internet technology courses and practice courses; sharing: display of past case results and excellent experience, creative library, and resource library; Q&A: The interactive community part of the platform can answer questions and communicate with each other.

*3.2.2. Student User Management.* Personal center: basic personal information management; preschool skills diagnosis: online assessment of preschool skills, preliminary personal learning plan; course progress: course status record, course question and answer; team management: release, review, and supervise individual work in the team; project

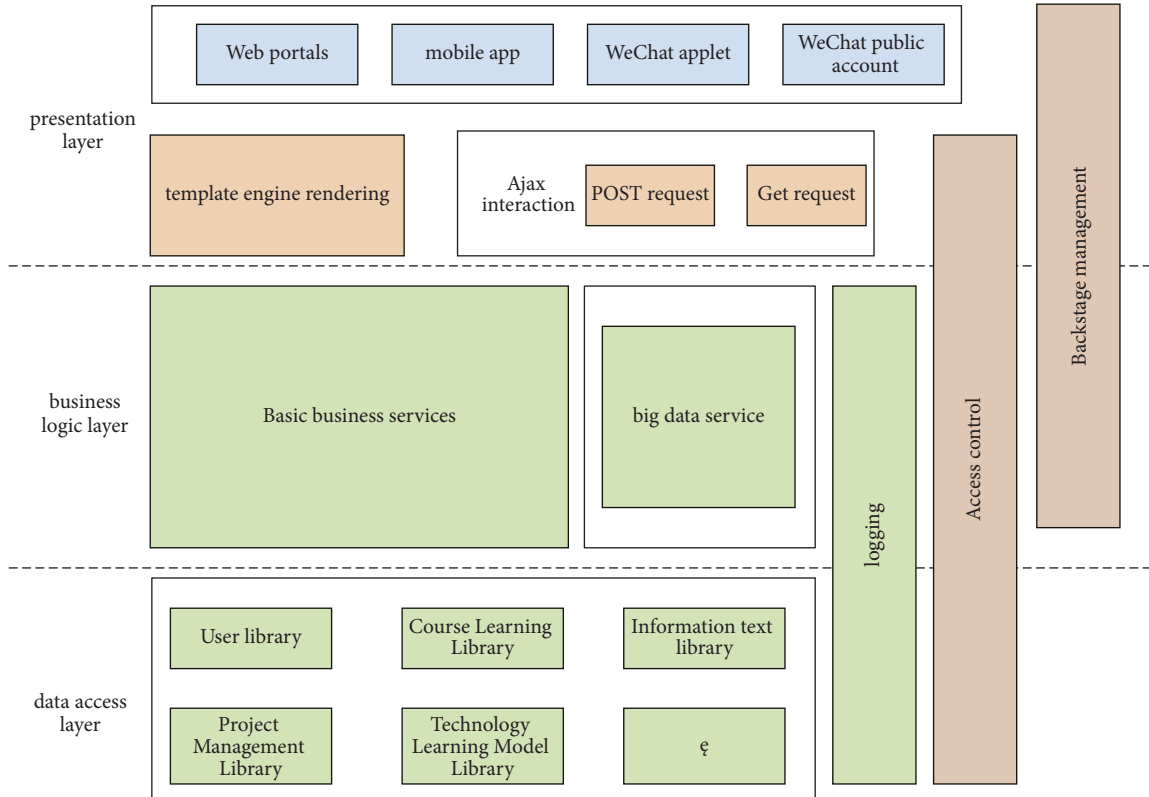


FIGURE 1: Internet + innovation and entrepreneurship education system architecture.

management: personal release, publicity, question, and answer, etc. of project work; online examination: comprehensive evaluation of innovation and entrepreneurship education.

**3.2.3. Comprehensive Management Mode.** Permission management: user role permission, password, and other management permissions; information management: information release, modification, deletion, etc., and upload files; course management: release and manage courses; team management: view and edit team information; project management: view and edit project information; examination management: entrance examination paper and score statistics management; learning ability management: build a learning ability evaluation model and manage the ability evaluation test questionnaire.

**3.3. System Environment Configuration.** This section establishes the system test environment from the software and hardware configuration of the system, as shown in Table 1. The hardware configuration includes the real-time concurrent calculation of the algorithm model, so the GPU server is selected. The server where the system is located has been installed, and it is located on the server with 6-core CPU, which is used to build the hardware environment; the development environment is divided into algorithm environment and system development environment; in terms of software settings, this paper applies basic tool software.

## 4. Design of Functional Modules Based on Machine Learning Algorithms

**4.1. Innovation and Entrepreneurship Education Achievement Prediction Module Based on SVM Algorithm.** The SVM algorithm first forms a hyperplane according to a specific function in a two-dimensional space. A hyperplane separates the two data types to the greatest extent possible. For multi-classification problems, the SVM algorithm must map it to a high-dimensional data space, forming a hyperplane to divide the data.

Suppose a training set  $D = \{(x_1, y_1), (x_2, y_2), \dots, (x_n, y_n)\}$  is given in the feature space where  $x_i \in R_m, y_i \in \{+1, -1\}, i = 1, 2, \dots, n$ ,  $y_i$  is the class sign of  $x_i$ , and  $(x_i, y_i)$  is called the sample point. The sample data can be classified into the hyperplane shown in equation (1), and the standard shape constraints are shown in equation (2).

$$wx + b = 0, \tag{1}$$

$$y_i(wx + b) \geq 1, i = 1, 2, \dots, l. \tag{2}$$

Among them,  $b$  is the classification threshold, which can be represented by any support vector. The distance from the data sample point  $x$  to the hyperplane is calculated as shown in the following formula:

$$d = \frac{|wx + b|}{\|w\|}. \tag{3}$$

TABLE 1: System environment configuration.

Classification	Name	System configuration
Hardware	CPU	Intel i5-12490f
	GPU	Nvidia GTX 3080 Ti
Development environment	CPU server operating system	Ubuntu 20.04
	GPU server operating system	Ubuntu 20.04
Development tool software	Algorithm IDEA	PyCharm
	System IDEA	IntelliJ IDEA
	TensorFlow	1.12.0
	OpenCV	3.5
	Python	3.10
	Java	1.7

This distance is the classification distance. If the classification interval is required to reach the maximum value, the maximum classification interval is equivalent to reaching the minimum value of  $1/2\|w\|^2$ . Support vector machines can be solved by quadratic programming problems, namely, (4) and (5).

$$\min \frac{1}{2}\|w\|^2 + C \sum_{i=1}^l \xi_i, \quad (4)$$

$$\text{st. } y_i(x_i w + b) \geq 1 - \xi_i, \quad (5)$$

where  $\xi_i$  is greater than 0 and  $C$  is the penalty factor. Adding  $\alpha$  to the conditional constraints contained in the objective function results in the Lagrangian norm.

$$L(w, b, \alpha) = \frac{1}{2}\|w\|^2 - \sum_{i=1}^l \alpha_i [y_i (wx_i + b) - 1], \quad (6)$$

where  $\alpha_i$  is the Lagrangian factor, and formula (7) can be obtained from formula (6).

$$\frac{\partial L}{\partial b} = 0 \longrightarrow \sum_{i=1}^l \alpha_i y_i = 0. \quad (7)$$

Similarly, formula (8) can be obtained from formula (6).

$$\frac{\partial L}{\partial w} = 0 \longrightarrow \sum_{i=1}^l \alpha_i x_i y_i = 0. \quad (8)$$

The dual optimization problem obtained from equations (5)–(7) is shown in the following equation:

$$Q(\alpha) = \sum_{i=0}^l \alpha_i - \frac{1}{2} \sum_{i,j=1}^l \alpha_i \alpha_j x_i y_j (x_i x_j). \quad (9)$$

Solving (8),  $\alpha_i$  can be obtained, and then the optimal classification function can be obtained.

$$f(x) = \text{sgn}(wx + b) = \text{sgn} \left[ \sum_{i=0}^l \alpha_i y_i (x_i x) + b \right]. \quad (10)$$

4.2. *Teaching Evaluation Module of Innovation and Entrepreneurship Education Based on BP Neural Network.* The BP neural network first obtains the network error by feeding forward the input signal, then feeds the network error back to each layer, and finally updates the network according to the error. The structure diagram of the three-layer network is shown in Figure 2.

The propagation algorithm of BP neural network is as follows:

$$h_j = f_1 \left( \sum_{i=1}^n w_{ij} x_i - \theta_j \right). \quad (11)$$

Similarly, the output value  $y_k$  of the neurons in the output layer can be obtained.

$$y_k = f_2 \left( \sum_{i=1}^m w_{jk} h_j - \varphi_k \right). \quad (12)$$

The loss function is shown in the following equation:

$$E = \frac{1}{2} \sum_{i=1}^m (y_k - o_k)^2. \quad (13)$$

In the forward expansion process of the BP algorithm, the input information is sent to the hidden layer after passing through the input layer and finally reaches the output end after being processed by the next network layer to obtain the error result network, which is fed back to the neurons of each layer. The BP neural network will modify the connection weights and thresholds of neurons through equations (14)–(16).

$$w_{jk} = w_{jk} + \Delta w_{jk}, \quad (14)$$

$$\varphi_k = \varphi_k + \Delta \varphi_k, \quad (15)$$

$$\Delta w_{jk} = -\eta \frac{\partial E}{\partial w_{jk}} = -\eta \frac{\partial E}{\partial y_k} \cdot \frac{\partial y_k}{\partial y_{jk}} = -\eta (o_k - y_k) y_k (1 - y_k) h_j. \quad (16)$$

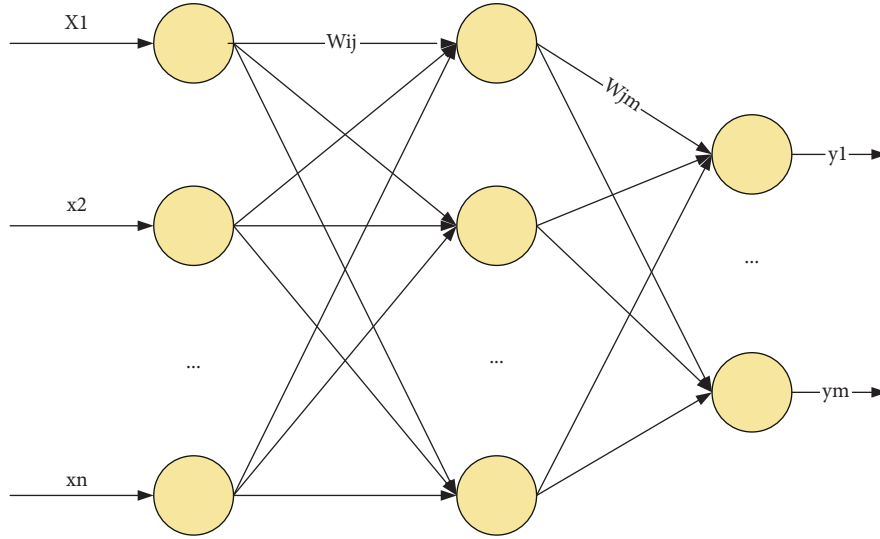


FIGURE 2: Structure diagram of three-layer BP neural network.

Define  $d_k$  as the correction error of the output layer.

$$d_k = (o_k - y_k)y_k(1 - y_k). \quad (17)$$

The correction error  $e_j$  of the hidden layer is expressed as

$$e_j = \left( \sum_{k=1}^m w_{jk} \cdot d_k \right) h_j(1 - h_j). \quad (18)$$

Then, the following relationships can be derived:

$$\Delta w_{ij} = \eta \cdot e_j \cdot x_i, \quad (19)$$

$$\Delta \theta_j = \eta \cdot e_j, \quad (20)$$

$$\Delta w_{jk} = \eta \cdot d_k \cdot h_j, \quad (21)$$

$$\Delta \phi_k = \eta \cdot d_k, \quad (22)$$

where  $\eta$  is the learning coefficient ( $0 < \eta < 1$ ).

When the set of comments  $V$  and the set of indices  $U$  are determined, we can create a fuzzy mapping from  $U$  to  $F(V)$ :

$$f: U \longrightarrow F(V), \forall u_i \in U,$$

$$u_i \longrightarrow f(u_i) = \frac{r_{i1}}{v_1} + \frac{r_{i2}}{v_2} + \dots + \frac{r_{im}}{v_{m0 \leq r \leq 1, 1 \leq i \leq n, 1 \leq j \leq m}}. \quad (23)$$

A fuzzy matrix  $R$  can be obtained from  $f$ , which is called a single-factor evaluation matrix or a single-factor membership degree matrix. So,  $(U, V, R)$  constitute a comprehensive evaluation model.

If the target is a first-level model, then the membership matrix is expressed as

$$R = \begin{bmatrix} r_{11} & r_{12} & \dots & r_{1m} \\ r_{21} & r_{22} & \dots & r_{2m} \\ \dots & \dots & \dots & \dots \\ r_{n1} & r_{n2} & \dots & r_{nm} \end{bmatrix}. \quad (24)$$

Among them,  $r_{ij}(i = 1, 2, \dots, n, j = 1, 2, \dots, m)$  represents the membership degree of the  $i$ -th evaluation index  $u_i$  of the  $j$ -th related evaluation object.

If it is a multi-level model, the membership matrix of the  $k$ -th sub-factor contained in the main factor is expressed as

$$R = \begin{bmatrix} r_{11} & r_{12} & \dots & r_{1m} \\ r_{21} & r_{22} & \dots & r_{2m} \\ \dots & \dots & \dots & \dots \\ r_{n1} & r_{n2} & \dots & r_{nm} \end{bmatrix}. \quad (25)$$

Among them,  $r_{ij}(i = 1, 2, \dots, n, j = 1, 2, \dots, m)$  represents the membership degree of the  $k$ -th sub-factor of the  $i$ -th evaluation index  $u_{ki}$  related to the  $j$ -th level comment.

According to different evaluation models, different formulas are used to calculate the score matrix. The formula for calculating the result matrix for the first-level model is

$$B = \text{AOR} = (b_1, b_2, \dots, b_m). \quad (26)$$

Among them,  $A$  is the weight set,  $R$  is the single-factor evaluation matrix,  $B = (b_1, b_2, \dots, b_m)$  is the result matrix, and the number of elements in  $B$  is the same as that in the review set.

If using a multi-level model, first compute the evaluation outcome matrix for each sub-factor:

$$B_k = A_k \circ R_k = (b_{k1}, b_{k2}, \dots, b_{km}). \quad (27)$$

Among them,  $A_k$  is the set of  $k$ -th sub-factor weights,  $R_k$  is the  $k$ -th sub-factor single-factor evaluation matrix, and  $B_k = (b_{k1}, b_{k2}, \dots, b_{km})$  is the  $k$ -th result matrix sub-factor. Next, calculate the result of the principal factor rating matrix using the following formula:

$$B = AOR = (b_1, b_2, \dots, b_m). \quad (28)$$

Calculate the result matrix of the main factor, where  $A$  is the weight set of the main factor,  $b$  is the normalized result matrix of the  $i$ -th sub-factor, and  $m$  is the number of elements in the review set.

$$R = \begin{bmatrix} b_{11} & b_{12} & \dots & b_{1m} \\ b_{21} & b_{22} & \dots & b_{2m} \\ \dots & \dots & \dots & \dots \\ b_{n1} & b_{n2} & \dots & b_{nm} \end{bmatrix}, (b_{i1}, b_{i2}, \dots, b_{im}) (i = 1, 2, \dots, n). \quad (29)$$

After obtaining the result matrix, normalize the result matrix using the following method:

$$b'_i = \frac{b_i}{\sum_{j=1}^n b_j}, \quad (30)$$

where  $b_i$  represents element  $i$  of the resulting matrix and  $b'_i$  is the corresponding normalized value.

In the system development process, the system framework design and detailed design are completed using the popular Visual Studio 2020 and SQL Server 2020 and other system and database development tools. Finally, the system can realize information management, education management evaluation, and so on. The main functional modules of the system are shown in Figure 3.

## 5. Internet + Innovation and Entrepreneurship Education System Test

**5.1. System Performance Analysis.** Assuming that the content of the compressed data records is repeated but the data IDs are different, this paper compares the MySQL database based on the compression algorithm storage engine with the MySQL database based on the original algorithm storage engine. After the test, the uncompressed MySQL database occupies 1500 GB, the MySQL database based on the original compression algorithm occupies more than 900 GB, and the database based on the algorithm engine occupies about 400 GB of data, which saves more than 70% storage space compared to the original data. Figure 4 shows the compression trends in capacity usage.

As shown in Table 2, the data inserted into the RocksDB engine and the QPS in the general environment and the system environment of this article are compared and analyzed. Through comparative analysis, it can be seen that the performance of the system designed around this paper is better than QPS in the overall pattern, and the performance system bottleneck of distributed storage can be seen.

**5.2. Analysis of Performance Prediction Results.** SVMs perform better on linear problems, but problems often encountered in real life are not linear. When the SVM algorithm solves nonlinear data, it must transform the nonlinearity into another linear problem in a high-dimensional space to solve it. The ratio transformation through the kernel function  $K(x_i, x_j) = \langle f(x_i), f(x_j) \rangle$  is a high-dimensional linear problem. The kernel functions mainly include polynomial kernel functions and Gaussian kernel functions. This experiment uses the third-party library sklearn of the Python language for experiments. The kernel function uses a Gaussian kernel, and the model undergoes ten-fold cross-validation. Model evaluation is also performed using precision, recall, F1 value (score), and confusion matrix. The evaluation results are shown in Table 3.

From the evaluation results in Table 3, the SVM algorithm classifies a total of 54 samples, including 10 excellent samples, 7 correctly classified samples, accounting for 70%, and 18 good samples. The sample classification is average, 10 samples are correctly classified, accounting for 71%, 12 samples are classified as poor, and 8 samples are correctly classified, accounting for 67%.

### 5.3. Analysis of Education Evaluation Results

**Accuracy.** It is the proportion of the total number of correct predictions. However, the good or bad classification effect is sometimes not explained by high accuracy. The calculation formula is

$$\text{accuracy} = \frac{TP + TN}{TP + TN + FP + FN}. \quad (31)$$

Accuracy: 99.5753%.

$$F_1 = 2 \cdot \frac{\text{precision} \cdot \text{recall}}{\text{precision} + \text{recall}}. \quad (32)$$

F1 value: 82.96%.

**Kappa.** The main function is to check the degree of agreement between two individuals, usually using experience to judge, but if the data distribution is irregular, using the accuracy rate may not be a good measure. The specific formula is as follows:  $p_o$  is the ratio of the overall observed number, and  $p_c$  is the ratio of the overall expected number.

$$k = \frac{p_o - p_c}{1 - p_c}. \quad (33)$$

Kappa coefficient: 88.01%.

## 6. Development Strategies of Internet + Innovation and Entrepreneurship Education Model under the Influence of Related Systems

**6.1. Reform of the Traditional Education Model.** In the context of the "Internet +" era, the cultivation of students' innovative and entrepreneurial ability must continue to rely

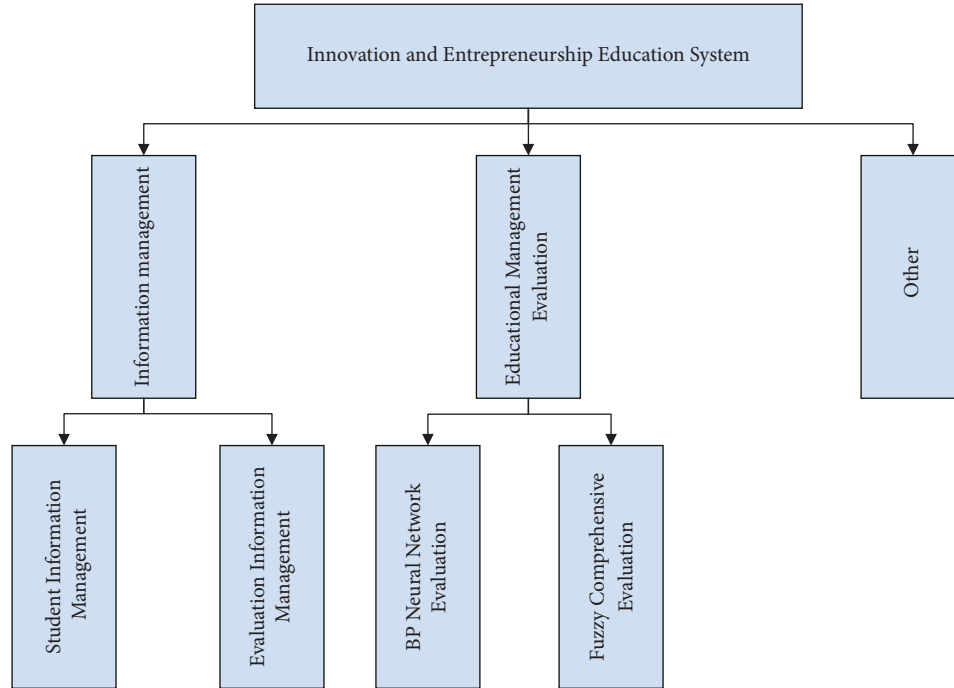


FIGURE 3: System function block diagram.

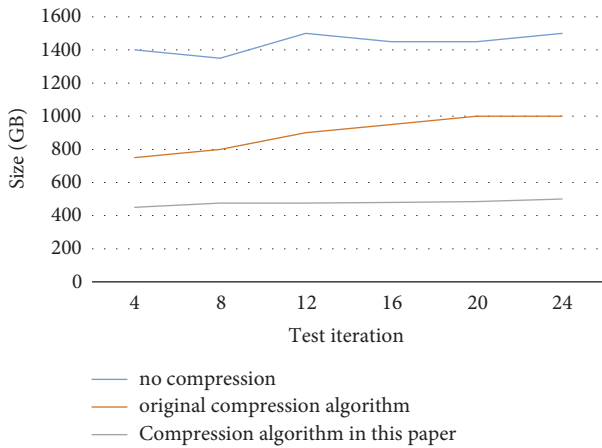


FIGURE 4: Compression capacity usage trend.

TABLE 2: Test experimental data with RocksDB engine in the general environment and the system environment of this article.

Number of concurrent requests	Universal environment-QPS	This article system environment-QPS
1	4343	10302
10	15150	21210
20	25210	34752
30	38784	46680
40	46420	58492
50	57419	69698
60	67569	82222
70	71266	93332
80	83386	105452
90	84901	119069
100	85860	131532

TABLE 3: Experimental results of SVM algorithm.

Evaluation	Precision	Recall	F1 score	Support
1 (excellent)	0.65	0.71	0.68	0.18
2 (good)	0.72	0.68	0.70	0.32
3 (middle)	0.63	0.72	0.68	0.25
4 (poor)	0.81	0.68	0.74	0.21

on a series of education and learning methods. At present, the main way to carry out innovation and entrepreneurship education for students in various courses in China is still the teaching method of transmitting materials and information through language, such as lectures, dialogues, and so on. The main teaching methods are experimental method, discovery method, and so on. Teachers of different majors engaged in innovation and entrepreneurship should fully consider the dominant position of students in different majors in colleges and universities, widely implement different methods such as group discussion, classroom inspiration, practical participation, project design, and so on, and conduct project-based research and other forms of teaching. In addition, for students participating in various courses, the latest professional knowledge of cutting-edge, innovation and entrepreneurship, and its analysis and research results are incorporated into the school classroom to fully stimulate the innovation and entrepreneurship inspiration of students of various majors under the background of the “Internet +” era.

In addition, it is necessary to deeply analyze the learning needs and laws of contemporary students in various sports disciplines and actively rely on information analysis technology. It is necessary to encourage and support the innovation and entrepreneurship path chosen by college students of various majors. Secondly, it is necessary to deeply

explore and reform the content and methods of comprehensive evaluation of students' quality in different schools, actively explore and create nonstandard evaluation methods, and try to transform from evaluation methods. Different assessment methods are used for evaluation, such as choosing knowledge-based skills assessment.

*6.2. Construction of the Guarantee System.* College students' experience comes partly from teachers' teaching and partly from their own practice. Therefore, schools need to carry out innovation and entrepreneurship education and impart more effective experience, and there must be certain standards and guidelines. This paper believes that the scope of entrepreneurship education is quite large, and the construction of the system itself must be thoughtful, detailed, and time-consuming. Therefore, the institutional construction system of entrepreneurship education should be considered from the three aspects of government, school, and society, and at the same time, it should follow the principle of overall construction, clear hierarchy, and gradual implementation. The first is the government. The focus of government system construction is the combination of entrepreneurial guidance and pressure, but it should not interfere directly. It is necessary to use laws and policies as the main means to formulate systematic, targeted, and enforceable policies and build systems on this basis to ensure that the system can play a role in educating students to improve entrepreneurship. Second is the school. When establishing entrepreneurship education-related systems, schools should comprehensively consider social needs, student needs, and their own circumstances. At the macro-level, we must attach importance to the formation of business opinions, requirements, and rules and regulations and organically combine systems such as teaching, scientific research, academic activities, and work. We will also provide the same opportunities and resources to implement and play the integrated role of the college, such as the entrepreneurship education department. To design sufficient teaching objectives, each system and department should take corresponding measures according to the general opinions of colleges and universities and their own actual conditions to ensure that courses, platforms, teaching methods, and time can provide sufficient support for entrepreneurship education. In addition, colleges and universities can also formulate policies to encourage and promote entrepreneurship among college students. The last is society. Student entrepreneurship has a very close relationship with society, so we must also attach importance to the construction of social entrepreneurship education system. Compared with the government and universities, the guarantees and services that the society can provide for students' entrepreneurship mainly include policy guidance, project development, risk assessment, incubation support, and entrepreneurial consultation. Corresponding system construction should also start from these aspects.

Improve the knowledge and literacy of teachers in entrepreneurship education. Invite entrepreneurship and innovation experts to the school regularly or irregularly to

communicate or arrange knowledge lectures and other activities, gradually introduce the concept of entrepreneurship into all courses of the school, subtly influence teachers and students, and realize the development of knowledge structure in teachers' entrepreneurship education. The second is to attach importance to carrying out relevant training activities. For entrepreneurship education, create a characteristic training system. At the same time, organize some teachers who have done a good job in entrepreneurship education to participate in relevant seminars at home and abroad and organize all teachers to exchange experience and lessons in entrepreneurship education on a regular or irregular basis, so as to better conduct entrepreneurship education. The third is to build a dedicated entrepreneurial practice team. As mentioned above, most colleges and universities currently lack practical experience and knowledge of entrepreneurship education. In this regard, colleges and universities can first hire some experts who have studied entrepreneurship education and have achieved certain results or can directly hire successful entrepreneurs, engineering and technical experts, venture capitalists, and other personnel as mentors for corporate practice activities. The existing teachers will learn the teaching contents and methods of these tutors and actively participate in various practical activities, so as to gradually form professional and high-level education, entrepreneurship training and teacher training institutions. In addition, we must also attach importance to the cultivation of talents with high research potential to ensure that the development of entrepreneurship education for students is guided at a higher level.

Special intermediary agencies should also be established to provide students with commercial loan guarantees, business tax consulting, guidance, and other services. The second is information services. It is necessary to establish a special information platform to timely push the market information, policies, and other information of college students' entrepreneurship to students, so as to provide extensive and multi-faceted support for entrepreneurship.

*6.3. Optimization of Education Management.* To some extent, innovation and entrepreneurship education in colleges and universities is closely related to the achievements of student talent training. Therefore, colleges and universities need to attach importance to innovation and entrepreneurship education, not only to set up special departments for teaching research and development, but also to provide help for the development of innovation and entrepreneurship teaching from multiple levels, or establish a special management group for innovation and entrepreneurship to achieve education, which needs to be independent of secondary colleges and departments. In addition, assign job responsibilities, be responsible for work-related innovation and entrepreneurship education, and work with other departments to achieve a synergistic effect of  $1 + 1 > 2$ . Responsibilities include elaborating and



implementing relevant innovation and entrepreneurship education policies issued by government departments and universities; guiding teachers and students to carry out innovation and entrepreneurship activities according to the policies; cooperating with other departments, especially the Academic Affairs Office, to optimize innovation and entrepreneurship courses and standardize teacher training; formulating talent training plan; find appropriate practice opportunities for students and do a good job in school enterprise cooperation; tracking students' innovation and entrepreneurship projects, providing students with professional innovation and entrepreneurship projects and implement teacher guidance, and improving the implementation of project results as soon as possible.

Different from the common employment counseling in the society, the school pays more attention to the comprehensive education, resulting in information asymmetry, and teachers and students receive relevant information late or do not know, hindering the effective development of innovation and entrepreneurship activities. Therefore, the comprehensive service platform for innovation and entrepreneurship must set up two sites: online and offline, mainly collecting online innovation and entrepreneurship related information, and promoting innovation and entrepreneurship policies, knowledge information, competition information, etc. In addition, we can also choose some forms that are easy for students to accept, such as we-media short videos, Douyin Live, and so on, to provide students with more comprehensive and innovative innovation and entrepreneurship education services. The content provided can also be more diverse, such as interpretation of relevant policies, dissemination of recruitment information, dissemination of competition information, and so on. It is necessary to keep track of the progress of students' innovation and entrepreneurship projects, provide students with professional and technical guidance in a timely manner, create quality projects, improve project implementation, help students avoid entrepreneurial risks, and improve the survival rate of students' entrepreneurship.

Faced with the complexity of the social environment and the high standards of employers, the creation of innovative and entrepreneurial activities requires the support of a multi-disciplinary environment and rich interdisciplinary knowledge, and the deep integration of disciplines and industries can improve the effectiveness of innovation. The construction of the innovation and entrepreneurship education system cannot only rely on the unilateral efforts of the school but must be combined with the enterprise. The school can take the lead in introducing students, promote school enterprise cooperation, build a one-stop teaching platform, provide more practical opportunities for students, campus cooperation, domestic and international cooperation, expand and deepen government participation, strengthen the connection with social forces, carry out reform and entrepreneurship education with connotation development, and meet the practical application needs of social innovation and entrepreneurship.

## 7. Conclusion

The current economic situation and the development of Internet technology give innovation and entrepreneurship education more options. At present, the entrepreneurship education of college students is far from being in place. Many students are confused when they graduate. Therefore, it is necessary to carry out effective innovation and entrepreneurship education guidance for students. Therefore, this paper builds an Internet + innovation and entrepreneurship education system based on machine learning algorithms, aiming to develop entrepreneurship education and guide the correct direction of entrepreneurship education for college students, and it can also enhance students' ability to adapt to the society, cultivate good innovation quality, and promote students' development in the society.

## Data Availability

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

## Conflicts of Interest

The author declares that there are no conflicts of interest.

## References

- [1] X. Zhang, "Research on innovation mode of quality education of higher vocational college students based on the integration of enterprise and campus culture," in *Proceedings of the 2016 5th International Conference on Social Science, Education and Humanities Research*, Tianjin, China, June 2016.
- [2] S. J. Harkema and H. Schout, "Incorporating student-centred learning in innovation and entrepreneurship education," *European Journal of Education*, vol. 43, no. 4, pp. 513–526, 2008.
- [3] H. Li and L. Jiao, "Research on innovation and entrepreneurship education and practice in shandong province based on the Internet," *Journal of Physics: Conference Series*, vol. 1744, no. 3, Article ID 032092, 2021.
- [4] D. F. Kuratko, "The emergence of entrepreneurship education: development, trends, and challenges," *Entrepreneurship: Theory and Practice*, vol. 29, no. 5, pp. 577–597, 2005.
- [5] C. Meng-yue, L. Dan, and W. Jun, "A study of college English culture intelligence-aided teaching system and teaching pattern," *English Language Teaching*, vol. 13, no. 3, pp. 77–83, 2020.
- [6] C. Wei and L. Yuan, "Reflection on college informationized teaching model under the background of educational informationization," in *Proceedings of the 2019 IEEE International Conference on Computer Science and Educational Informatization (CSEI)*, pp. 81–83, Kunming, China, August 2019.
- [7] L. Pittaway and J. Cope, "Entrepreneurship education: a systematic review of the evidence," *International Small Business Journal*, vol. 25, no. 5, pp. 479–510, 2007.
- [8] J. Zhang, "Research on classroom teaching evaluation and instruction system based on gis mobile terminal," *Mobile Information Systems*, vol. 2021, no. 11, p. 1, Article ID 9790766, 2021.

- [9] N. A. Alias and A. M. Zainuddin, "Innovation for better teaching and learning: adopting the learning management system," *Malaysian online journal of instructional technology*, vol. 2, no. 2, pp. 27–40, 2005.
- [10] Q. Wang, H. L. Woo, C. L. Quek, Y. Yang, and M. Liu, "Using the Facebook group as a learning management system: an exploratory study," *British Journal of Educational Technology*, vol. 43, no. 3, pp. 428–438, 2012.
- [11] X. F. Zheng, "Research on the Whole Teaching of Vocal Music Course in University Music Performance Major Based on Multimedia Technology," *Scientific Programming*, vol. 2022, Article ID 7599969, 2022.
- [12] H. P. Yueh and S. Hsu, "Designing a learning management system to support instruction," *Communications of the ACM*, vol. 51, no. 4, pp. 59–63, 2008.
- [13] T. J. McGill and J. E. Klobas, "A task–technology fit view of learning management system impact," *Computers & Education*, vol. 52, no. 2, pp. 496–508, 2009.
- [14] F. Zhu, C. Zhang, Z. Zheng, and A. Farouk, "Practical network coding technologies and softwarization in wireless networks," *IEEE Internet of Things Journal*, vol. 8, no. 7, pp. 5211–5218, 2021.
- [15] J. Rhode, S. Richter, P. Gowen, T. Miller, and C. Wills, "Understanding faculty use of the learning management system," *Online Learning*, vol. 21, no. 3, pp. 68–86, 2017.
- [16] A. Horvat, M. Dobrota, M. Krsmanovic, and M. Cudanov, "Student perception of Moodle learning management system: a satisfaction and significance analysis," *Interactive Learning Environments*, vol. 23, no. 4, pp. 515–527, 2015.