Research Article

An Intelligent Evaluation Model of Enterprise Financial Data Quality Based on Artificial Neural Network

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With the progress of information technology and the rapid development of economy, the importance of financial data quality evaluation in social and economic activities is increasing day by day. Based on the present situation of enterprise development and machine learning method, this paper constructs an intelligent evaluation model of enterprise financial data quality. This paper expounds the research methods of financial quality evaluation, including the evaluation method based on financial indicators and the evaluation method based on nonfinancial indicators. This paper introduces the basic theory of financial quality evaluation. And make use of the company’s report data and annual report text data, respectively. In this paper, the evaluation subject has changed from a specialized agency to a public evaluation group, the evaluation object should change from conformity quality to practical quality, and the evaluation method should also change from rule-based expert inference algorithm to cognitive-based social calculation method. The realization of these changes needs the support of intelligent evaluation mode, which consists of three main links: identification and classification management of evaluation subjects, measurement of evaluation objects, and use and standardization of intelligent technologies. Finally, the financial quality evaluation is summarized and prospected, hoping to contribute to the research of the company’s financial quality evaluation.

1. Introduction

With the rapid development of economy, the position and importance of financial data quality evaluation in social and economic activities are becoming increasingly obvious [1]. It will cause the stock price to fall continuously in the short term, a large amount of market value will evaporate, and assets will be lost. It will even lead to long-term losses of the company, unable to get out of the financial crisis, and then be specially treated or forced to withdraw from the market [2]. As a professional management technology, financial quality assessment can not only provide practical decision support for the management of modern enterprises but also fully consider the various needs of stakeholders [3]. The rapid economic development has promoted the vigorous development of most enterprises in China. With the increasing number of listed companies, it has become an inevitable trend to evaluate the financial quality, which will help promote the healthy development of the capital market and improve the company’s management [4]. At present, whether at home or abroad, financial fraud of listed companies occurs from time to time, which causes huge losses to investors’ interests and slows down the pace of economic and social development. The unreliability and opacity of financial data has become one of the difficult problems that have plagued accounting circles for a long time. Financial quality evaluation plays a vital role in the business process of enterprises [5]. It can help the managers of enterprises to understand the past operating conditions of enterprises and formulate strategic plans that are conducive to the long-term development of enterprises in combination with their own operating needs [6].

The uncertainty of the business environment has grown as the global economy has become more integrated [7]. For a company’s survival and growth, its financial situation is critical. Financial crises are often the precursors to business crises [8]. Shareholders, creditors, potential investors, and other external stakeholders of the company want to know about the company’s financial situation and operating results, so the information disclosed by the company must
be analyzed [9]. The company’s financial data has evolved into a public information product that affects the entire society, and the quality of these data is linked to the country’s healthy economic development and citizens’ vital interests. Financial data disclosed by publicly traded companies is currently of poor quality, and financial fraud has been explicitly prohibited [10]. There have been numerous instances where shareholders have voted with their feet on financial information provided by publicly traded companies. As a result, this paper examines the intelligent evaluation model of enterprise financial data quality in depth, based on machine learning [11, 12].

As the information base of financial quality evaluation, the financial statements regularly reported by enterprises to the outside world carry important information about the business status and financial status of enterprises, which is a comprehensive reflection of the current situation of enterprises and an important basis for many stakeholders to make decisions [13]. In reality, there are many complicated models in the financial market, and analysts do not only rely on several data of financial statements when analyzing listed companies [14]. Based on machine learning, this study reconstructed the intelligent evaluation model of enterprise financial data quality, including the significance and principles of reconstructing the financial quality evaluation system of listed companies, and the financial index evaluation system, nonfinancial index evaluation system, and comprehensive evaluation system of listed companies. The evaluation model is constructed by component-based assembly method. It makes the structural framework of the model clearer, which is beneficial to the design, development, and maintenance of the model. In view of the possible missing data, redundant data, and inconsistent data in data set, it is necessary to preprocess the data. In order to improve the efficiency of data preprocessing, a set of data preprocessing process is designed. This paper uses pretrained word vectors to digitize the text after cleaning in the text data of publicly traded companies’ annual reports and the improved loss function to optimize the model. And the financial quality evaluation system, nonfinancial quality evaluation system, and comprehensive evaluation system are used to intelligently evaluate a company’s financial data quality in order to make management recommendations and countermeasures based on the evaluation results. The main goal of this research is to assess the financial quality of publicly traded companies by analyzing financial data and indicators provided by financial statements.

2. Related Work

Reference [15] proposes a variety of data quality evaluation methods and models, but none of them can be used to assess the data quality of intelligent information system integration. Reference [16] proposed a data quality evaluation framework for intelligent information system integration, as well as the technology used to build it and the method used to calculate it. Traditional financial indicators are used in reference [17], but traditional financial ratios are often difficult to fully reflect the essential characteristics of the problem due to different forecast objectives. The characteristics of integrated data quality in intelligent information systems are examined in reference [18], which also discusses the basic indexes for data quality evaluation in intelligent information systems. And based on the deployment of quality functions, propose a method for establishing a financial data quality measurement unit. Financial quality evaluation is recognized from the perspective of enterprise competitiveness in reference [19], which combines financial quality with overall enterprise competitiveness. The financial quality of businesses is thought to be the true expression of their competitiveness, and assessing their financial quality is essentially assessing their competitiveness. The relationship between financial statements and financial strategies is the starting point for reference [20, 21], which claims that by analyzing corporate financial strategies, we can see the flow direction of listed companies’ funds, thereby assisting investors in making correct economic decisions and reducing investment risks. New ideas for building a financial reporting system are presented in reference [22]. It believes that the current financial reporting system places too much emphasis on financial disclosure while overlooking the significance of nonfinancial data. As a result, the data it provides is insufficient to meet the needs of various information seekers. According to the literature [23], a new financial reporting system should be built from the standpoint of financial statement users, taking into account their actual needs.

In order to promote the continuous improvement of enterprise financial data quality, based on the existing research, this study proposes an intelligent evaluation model of enterprise financial data quality based on machine learning. According to the research, intelligent evaluation of financial data quality based on big data is an activity in which users participate extensively and make full use of intelligent devices to evaluate the practical quality of financial data of listed companies. The purpose is to enable most people to judge the quality of financial data of listed companies conveniently and reliably through the Internet platform. In this paper, a series of methods such as data preprocessing, eigenvalue extraction, parameter optimization, and training set pruning are designed to improve the data quality. Compared with other methods, it is found that the intelligent evaluation model of enterprise financial data quality based on machine learning can deepen the understanding of data and significantly improve the evaluation accuracy. The model has been tested in an enterprise and achieved good results, meeting the needs of intelligent evaluation of enterprise financial data quality.

3. Methodology

3.1. Enterprise Financial Data Quality Evaluation. With the rapid development of information technology, online reporting of financial data has become the main means for most listed companies to disclose information [24]. Financial quality evaluation refers to the calculation and processing of relevant data information of enterprises by using certain scientific methods and evaluating the business and
financial status of enterprises according to the results of calculation and processing, so as to understand the past business status of enterprises, the business problems they are facing now, and the future development trend and help the stakeholders of enterprises to make correct decisions accordingly. Through the Internet, users can not only obtain the financial data disclosed by listed companies in real time but also use the Internet to cooperate with others and use shared network resources to scientifically evaluate the financial data of listed companies and identify their authenticity and availability in time. This will provide favorable conditions for narrowing the information asymmetry space and also play an active role in promoting the improvement of the financial data quality of listed companies in China.

One of the main reasons for the low quality of financial data disclosed by listed companies in China is a serious information asymmetry between suppliers and users of financial data [25]. Understanding the inherent characteristics of financial quality can help us comprehend the meaning of financial quality assessment. Economic value-added, organizational coordination, and growth sustainability are all intrinsic characteristics of financial quality. Listed companies can deceive investors with false information that users cannot see for a while, entice them to invest, and then pass on the operating losses to them. Investors’ confidence has been severely harmed as a result of this behavior. This is extremely detrimental to the development of China’s stock market in the long run [26]. The goal of financial quality evaluation research is to develop a set of perfect financial quality evaluation systems by studying methods for evaluating the financial quality of businesses, which will make it easier for business stakeholders to evaluate financial data and make better decisions. We should take appropriate measures to further narrow the information asymmetry space between suppliers and users of financial data of listed companies and reduce the degree of information asymmetry, thereby forcing listed companies to provide users with higher quality financial data. Financial statements, as the statutory information regularly published by the company, are an important reflection of the company’s financial situation and operating performance. Through the analysis of the financial data provided by the financial statements, we can help all stakeholders of the enterprise understand the business situation of the enterprise, identify the advantages and disadvantages of the enterprise, and predict the future of the enterprise. Therefore, it is of great significance to evaluate the company’s financial data quality. The traditional financial index analysis system is shown in Figure 1.

The fraud detection of financial statements of publicly traded companies is only aimed at the conformity quality characteristics of financial data, such as the authenticity and reliability of financial statements, and not at the practical quality characteristics of financial data, such as the relevance and comprehensibility of financial statements, from the standpoint of the application scope of intelligent detection methods. One of the most important factors in the successful operation of an intelligent information system is integrated data quality. That is, data quality must be maintained at a certain level throughout the system’s life cycle. Enterprise is a complex whole made up of many parts, each of which has multiple aspects, each of which is influenced by a variety of factors at the same time. As a result, a single piece of financial data may only be one of many factors influencing one aspect of a business. If you want a thorough understanding of the company’s overall situation, you should start with the overall situation and conduct a thorough and systematic analysis. When analyzing nonfinancial data, we should look for correlations, combine it with all aspects of business operations, and conduct a thorough analysis.

Intelligent evaluation of the practical quality of listed companies’ financial data based on Internet big data refers to the activity of evaluating the practical quality of listed companies’ financial data using intelligent devices and a large number of users in an Internet big data environment. The evaluation of financial data quality is an important aspect of financial data quality management. Its primary goal is to convert it into a set of measurable measurement sets that meet the needs of various data quality systems, to measure data quality qualitatively or quantitatively, and to compare the measurement results to standard values in order to confirm and verify the status of financial data quality and to check and verify financial data quality control activities. The financial data report aids in resource allocation optimization. Investors can learn about a company’s profitability and growth potential from the financial reports it produces and then decide whether or not to invest. As a result of investors’ decisions, resources will flow to enterprises with high profitability and growth potential, achieving the goal of optimizing the allocation of social resources. The architecture of the enterprise financial data quality intelligent evaluation system constructed in this paper is shown in Figure 2.

The degree to which the sum of all data features involved in integration meets the system’s needs is referred to as the quality of integrated data. This is a multivariate indicator of how well financial data meets demand. As a result, the basic data quality indicators will have different expressions in systems with varying data quality requirements. Financial quality evaluation is a quality evaluation and analysis of an enterprise’s financial situation, operating results, and cash flow over a specific time period based on the financial report and other relevant information reported by the enterprise, which assists all stakeholders in the enterprise in understanding past and present operating results, as well as predicting the enterprise’s development trend in the foreseeable future, so that correct decisions can be made. It is necessary to add or choose data quality evaluation indicators according to specific data quality requirements when evaluating the data quality of intelligent information systems. In many cases, evaluation indicators must be continuously decomposed into multiple levels of secondary indicators. Data indicators can generally include the following contents: accuracy, authenticity, comprehensibility, credibility, availability, completeness, relevance, consistency, uniqueness, timeliness, and stability.

3.2. Machine Learning Algorithm. Under the trend of global informationization, everything from human thoughts to real objects can be stored in a huge database in the form of information flow and can reach other corners of the world.
through the Internet. With the continuous expansion of human activity space, the acceleration of life rhythm, and the increasing diversification of information forms, the amount of data has increased exponentially. Massive data has flooded into our field of vision. In the past, people could not handle the massive data due to technical conditions and...
other constraints. From the perspective of business competition, enterprises are no longer satisfied with extracting simple statistical report information through databases. In the fierce competitive environment, they need to process the data more intelligently and get the forecast of the future market trend and also need to find the management, production, and marketing problems that are neglected daily through the data, so as to have greater competitiveness. From the perspective of people’s needs, people no longer meet the simple information acquisition, and people need more “smart” information for them to use.

Deep learning is a multilayer network hierarchy model that can be used to learn deep features by building a deep nonlinear network model with multiple hidden layers. The analysis of multiple hidden layers can yield network representations of data at various levels, as well as more advanced or abstract data representations of sample data. Deep learning, as a deep expression of data, can not only decompose and explain data but also analyze it to determine potential data change factors. Clustering is the principle of “minimizing similarity between classes while maximizing similarity within classes” or grouping data items into multiple classes and clusters to minimize differences between classes while maximizing similarities within classes. Clustering has no classification, does not rely on predefined classes, and does not require training data sets. It is an unsupervised learning mode that does not require any prior knowledge.

3.3. Intelligent Evaluation of Financial Data Quality Based on Machine Learning. The significance of reconstructing the financial quality evaluation system is as follows: (1) It is beneficial for shareholders, creditors, potential investors, and other stakeholders to make correct decisions. (2) It is conducive to the formation of the survival of the fittest mechanism for the performance evaluation of operators. (3) It is conducive to optimizing the management of listed companies and promoting the healthy growth of listed companies. (4) It is beneficial for financial managers to formulate financial strategies and promote the optimal allocation of resources. In the face of massive data in database, traditional data analysis techniques often encounter practical difficulties, mainly because data sets have hundreds of thousands of attributes, and high-dimensional data rapidly increases the computational complexity. The stored data is often heterogeneous, semistructured, and complex, which is difficult to analyze and process. In the face of massive data processing methods that are beyond the computing power of conventional computers, it is urgent to study the scalability of algorithms and the high-performance storage technology of databases.

In order to ensure the scientificity and accuracy of the financial quality evaluation results, we should pay attention to the rationality and practicability of the design when designing the financial quality evaluation system. We should make full use of the research results at home and abroad to design an evaluation system suitable for different industries and economic types to meet the needs of all stakeholders of listed companies. The advantage of machine learning is to build a hierarchical model with multiple hidden layer networks according to the combination principle and construction method of each component. Its purpose is not only the simple function of artificial neural network [27, 28] for classification or regression. What is more important is to learn the features of data through multiple hidden layers to obtain a better data representation model. At the same time, it is different from the classification of traditional networks, and it emphasizes the importance of feature learning of data.

There are original variables \(X_1, X_2, \ldots, X_n\) and the common factors of the original variables are \(F_1, F_2, \ldots, F_m\). Then, the relationship between \(X_i\) and \(F_j\) can be expressed as the following matrix:

\[
\begin{align*}
X_1 &= a_{11}F_1 + a_{12}F_2 + \cdots + a_{1m}F_m + e_1, \\
X_2 &= a_{21}F_1 + a_{22}F_2 + \cdots + a_{2m}F_m + e_2, \\
&\ldots \\
X_n &= a_{n1}F_1 + a_{n2}F_2 + \cdots + a_{nm}F_m + e_n.
\end{align*}
\]

In the formula, the linear combination of the common factor \(F_j\) is used to represent the original variable \(X_i\). When the score of each common factor \(F_j\) needs to be calculated, formula (1) needs to be transformed into a linear combination of \(X_i\) to represent the common factor \(F_j\), namely,

\[
F_j = b_{j1}X_1 + b_{j2}X_2 + \cdots + b_{jn}X_n \quad (j = 1, 2, \ldots, m). \tag{2}
\]

The above formula is called the factor score function. Thus, the comprehensive scoring formula of each common factor is obtained, namely,

\[
\text{Comprehensive factor } F = w_1f_1 + w_2f_2 + \cdots + w_mf_m, \tag{3}
\]

where \(F\) is the comprehensive factor and \(w_1, w_2, \ldots, w_m\) are the variance contribution rates of the selected \(m\) common factors. \(F_1, F_2, \ldots, F_m\) are the scores of \(m\) common factors calculated by the factor score function. According to the scores of each public factor and the original variables it represents, some aspects of the company can be evaluated. The scores of all public factors and their corresponding weights, that is, the results after multiplying the variance contribution rate, are cumulatively added to obtain comprehensive scores, so as to comprehensively evaluate the operating and financial situation of listed companies.

Different data models and mining methods are chosen to model the data according to the goals to be achieved during the modeling stage. We must consider the amount of data to be processed and how to adjust appropriate parameters when modeling. If there are any unusual issues, we must return to the data preparation stage. First and foremost, we should choose financial indicators from six categories: profit, asset operation ability, solvency, development ability, antirisk ability, and capital expansion ability. Also, pay attention to the choice of core and auxiliary indicators, so that the core indicators can highlight listed companies’ financial and operating conditions. To evaluate the financial quality of publicly traded companies more comprehensively...
and objectively, combine core indicators with auxiliary indicators. In formula (4),

$$w^* = \sum_{i=1}^{n} \alpha_i^* y_i x_i.$$  \hspace{1cm} (4)

Select the Langrangian multiplier $\alpha_i^*$ corresponding to a support vector, and calculate the $b^*$ as follows:

$$b^* = y_j - \sum_{i=1}^{n} \alpha_i^* y_i (x_i, x_j).$$ \hspace{1cm} (5)

Substitute $w^*, b^*$ into $wx + b = 0$ to get the optimal hyperplane equation:

$$\sum_{x_i \in SV} y_i \alpha_i^* (x_i, x) + b^* = 0.$$ \hspace{1cm} (6)

Finally, the optimal classification function for this classification problem is obtained as follows:

$$f(x) = \text{sgn} \left[ \sum_{x_i \in SV} y_i \alpha_i^* (x_i, x) + b^* \right].$$ \hspace{1cm} (7)

After the model is established, it is necessary to evaluate all aspects of the model and consider whether the model is reasonable or not from two aspects: the accuracy of the model and the return on investment. Firstly, the model can predict or simulate the actual situation relatively high, and secondly, we should consider the costs and benefits of deploying this model. The rationality and scientificity of the company’s financial evaluation index selection directly affect the comprehensiveness and applicability of the financial index evaluation system design. A lot of supervised learning is adopted here, which saves the labeling process, so that large-scale corpus can be used. In this way, a large amount of data can be effectively used, and the parameters in the model can be greatly reduced, the training difficulty can be reduced, and the generalization performance can be improved.

The loss function is designed to solve the sample imbalance problem in image classification, and its calculation formula is as follows:

$$\text{FL}(p_t) = -\alpha_t (1 - p_t)^y \log (p_t).$$ \hspace{1cm} (8)

Among them,

$$p_t = \begin{cases} p & y = 1, \\ 1 - p & \text{otherwise}. \end{cases}$$ \hspace{1cm} (9)

Get the weight sum to represent the characteristics of this layer by training an automatic encoder with noise and sample data. The weight sum of the second layer is obtained as the feature representation of the second layer, and these features of the previous layer are used as the input of the automatic encoder of the next layer. The stacking process means that each layer’s input is the output of the previous layer, allowing greedy learning to avoid local convergence and record this layer’s training weight. Different and more abstract feature representations are obtained during the learning process of each layer.

4. Result Analysis and Discussion

In this study, we use precision rate, recall rate, F1 value, and AUC value to comprehensively evaluate the model and directly use all available historical data to train the model. The quality index of feature subset is the most important parameter to measure feature subset, and it is the search evaluation standard of feature subset. The index is not a general measure of the accuracy rate, but a correct reflection of the connection strength between feature subset and results. The rate of return on net assets, which represents profitability, is decomposed by layer by layer into net sales rate, total asset turnover rate, and equity multiplier. The reasons for this are the change of ROE can be explained through the increase and decrease of these three aspects, so as to evaluate the company’s operating status and financial status more accurately. Distance index refers to selecting the feature subset that maximizes the distance between classes. General distance function types include Euclidean distance, Mahalanobis distance, and Babbitt distance. In supervised learning, the greater the distance between different categories, the greater the separability of categories and the lower the classification error rate. For feature selection, the feature subset that maximizes the distance between classes should be selected. Accuracy rate and recall rate pay more attention to the classification ability of the problem samples and models to be detected. The experiment compares the support vector machine, logistic regression, and this algorithm. The accuracy trend of the algorithm is shown in Figure 3. The recall curve of the algorithm is shown in Figure 4.

The accuracy and recall rates of the support vector machine and logistic regression algorithm are both low, as shown in the graph. This algorithm has a higher accuracy and recall rate when compared to others. This algorithm’s superiority has been demonstrated. The rate of return on net assets is a broad measure of profitability that can include the return on equity invested by the company’s owners. The net sales rate reflects the profit level of sales revenue per unit while also reflecting the efficiency of businesses in cost control. The total asset turnover rate is a comprehensive reflection of an organization’s operational efficiency across all assets. The equity multiplier is an index that measures the ratio of enterprise own funds to debt funds and can indirectly reflect the solvency of businesses. It reflects the ratio of enterprise equity capital in total assets, is an index that measures the ratio of enterprise own funds to debt funds, and can indirectly reflect the solvency of businesses. Expert evaluation or system-automated evaluation can assess data quality at various levels and assign scores to it. The data is then normalized using the transformation, interpolation, ratio, and linear membership methods. The analytical
hierarchy process (AHP) can be used to assign corresponding weights to indexes of the same level based on their importance, and then, the indexes can be aggregated using methods such as linear weighted sum, multiplication synthesis method, addition-multiplication mixing method, and relative entropy method, with the aggregated value expressing the size of the upper index. The precision rate and recall rate are combined in the F1 index in this paper, and these two aspects are taken into account when evaluating the model.

The F1 values of different algorithms are shown in Figure 5.

It can be seen from the trend in Figure 5 that the F1 value of the algorithm in this paper is the highest among the three algorithms, followed by logistic regression, and the F1 value of the support vector machine algorithm is the lowest. The advantages of this algorithm are further proved. The basic idea of factor analysis is to simplify complex problems. Starting with the study of the correlation between variables, the variables with high correlation are classified, so as to simplify the complex relationship of variables and reflect most of the variable information with a few common factors. Therefore, the factor analysis method has more advantages than other financial quality evaluation methods when comparing and analyzing the operating conditions of several enterprises. In practical work, abstract
quality requirements are difficult to measure directly, accurately, and comprehensively. In data quality evaluation, it is necessary to convert it into several data quality measurement units. The so-called data quality measurement units refer to units that reflect data quality specifications and are testable. The measure set consisting of a group of characteristic data measurement elements can reflect the situation of a certain aspect of data quality, and the overall situation of data quality can be gathered through the measurement of different measure sets. We experimented with AUC index again and got the results as shown in Figure 6.

By analyzing the trend in Figure 6, it can be concluded that the algorithm in this paper has obvious advantages in the AUC value comparison experiments of different algorithms. Compared with this algorithm, the AUC value of support vector machine and logistic regression algorithm is lower. The validity of this method is verified. If the conformity quality assessment is an estimation activity based on fact judgment, then the practical quality assessment is an estimation activity based on value judgment. The value judgment is subjective, and the judgment result varies with the individual cognitive level. It is necessary to fully
communicate and communicate between the assessment subjects, so as to reach a broad consensus and form the assessment conclusion. In order to verify the feasibility and application effect of this model, we apply this model, literature [15] model, and literature [16] model to an enterprise, respectively, analyze the data obtained, and get the evaluation accuracy of the three models, as shown in Figure 7.

It is not difficult to draw the following conclusions from the trend in Figure 7: the model in this paper has a high level of accuracy. The other two models have a significant gap in comparison to this model, and the accuracy of data quality evaluation results is low. As a result, the model developed in this paper can be used to assess the quality of financial data with a high degree of accuracy and practical utility. Evaluation, also known as rule-based expert inference algorithm, is the process of determining the index data of conformity quality and then drawing the evaluation conclusion based on accounting standards and other relevant norms, as well as scientific knowledge such as measurement and statistics. The ability to reflect the net cash flow generated in the business activities of enterprises in order to obtain profits is known as the cash-to-income ratio. The higher the index value, the better an enterprise’s ability to profit from its net cash flow. The ratio of net profit to main business income is known as the sales profit rate, and it reflects the profit level of sales revenue per unit as well as the efficiency of cost control in businesses. The higher the index value, the better the cost control effect and the higher the profitability of enterprise sales revenue.

The determination of classification threshold becomes a process of selecting the optimal segmentation point. We only need to select a segmentation point to divide the samples into two categories. In the actual classification task, we can control the preference for accuracy and recall by controlling this threshold. And we can study the generalization performance of learners more effectively through the ranking quality. After many experiments in this chapter, the analysis of the experimental results shows that the intelligent evaluation model of financial data quality based on machine learning established in this paper has certain practicability. It has obvious advantages in accuracy, recall rate, F1 value, and AUC value. Compared with other models, this model has certain advantages and is suitable for intelligent evaluation of enterprise financial data quality.

5. Conclusions

With the rapid growth of the economy, the role and importance of enterprise financial data quality evaluation in social and economic activities is becoming more apparent. Enterprise financial data quality evaluation, as a professional management technology, can not only provide practical decision support for modern enterprise management but also fully consider various stakeholder needs. Financial data disclosed by publicly traded companies has evolved into a public information product that affects the entire society. The health of the national economy and the vital interests of citizens are linked to the quality of these data. The usefulness of listed companies’ financial data has always been a focus of academic circles, and the quality of listed companies’ financial data is an important index to measure the usefulness of listed companies’ financial data, which reflects a country’s enterprise development level and national governance ability. It is necessary to interpret financial reports using simple and effective financial quality evaluation methods that clearly reflect the business and financial status of enterprises, so that users of financial statements can predict the development trend and expansion potential of enterprises in the foreseeable future based on the past business status of enterprises.
Based on machine learning method, this paper constructs an intelligent evaluation model of enterprise financial data quality. The evaluation concept of big data based on machine learning is introduced into the evaluation of financial data quality of the company. Combining intelligent methods to upgrade the traditional practical quality evaluation model of financial data of listed companies, a theoretical framework of intelligent evaluation of practical quality of financial data of listed companies based on Internet big data is formed. I hope it can provide new ideas and methods for improving the quality of financial data of listed companies in China. Due to the limited research time and energy, there are still some shortcomings in this research. Therefore, in the future economic research, we should not only devote ourselves to the reconstruction and improvement of the evaluation system of nonfinancial information but also gradually improve the contents disclosed in financial reports so that they can fully reflect the information of listed companies. Provide effective information reference for users of financial statements to make economic decisions.

Data Availability
The data used to support the findings of this study are included within the article.

Conflicts of Interest
The author declares that there is no conflict of interest regarding the publication of this paper.

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