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Research Article

Advanced Artificial Intelligence Model for Financial Accounting Transformation Based on Machine Learning and Enterprise Unstructured Text Data

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Machine learning belongs to the science of artificial intelligence, so its main exploration goal is artificial intelligence, mainly to accumulate experience and improve the relevant performance of the algorithm. ML is a complex discipline that learns and improves skills primarily through imitation. Unstructured text data refer to unstructured data in the form of text. Financial accounting is a basic work of an enterprise, mainly to provide decision-making reference information for enterprise managers to ensure the normal operation of the enterprise. Financial accounting is a management activity that monitors the business and provides relevant information to the relevant authorities. This paper aims to study the advanced artificial intelligence model of financial accounting transformation based on machine learning and enterprise unstructured text data, expecting to use machine learning and unstructured text technology to upgrade the management of financial accounting and improve its analysis level. In this paper, an improved KMP algorithm is proposed for the keyword matching problem of unstructured data. Then, the data crawling technology of unstructured text is studied. It mainly uses the crawler technology based on the Python language and obtains a large amount of information on the Internet by formulating appropriate regular expressions. The algorithm is used to mine the data set and generate frequent itemsets. The association rules mining algorithm is proposed and implemented, and the association rules with practical reference value are obtained. The test leads in this document indicate that the return on assets of the enterprise is −11.2%, the net interest rate on equity is −44.5%, and the business profit rate is −12.1%. This shows that the profitability of the company has been declining in recent years, and there is even the risk of bankruptcy.

1. Introduction

With the deepening of economic globalization, the business scope of enterprises is becoming wider and wider, financial information is becoming more and more complex, and the business environment faced by enterprises is also constantly changing. The promotion of Internet technology makes information spread rapidly, and the degree of human dependence on information technology is also increasing. From the perspective of informatization, financial accounting management is the only way for enterprises to carry out informatization construction. In today's increasingly developed enterprise informatization, traditional methods cannot meet people's needs for information. The data warehouse integrates the latest data across the organization, obtains various data in time, reflects the economic operation status of the enterprise, and realizes the decision support for the enterprise managers. However, there is a lot of market information, and how to find the information that people need in the vast amount of information is the key to the current problem. Therefore, this paper integrates financial information with the help of machine learning and unstructured text technology, improves the information integration ability of financial accounting, and thus improves the analysis level of financial accounting.

Valuable information can be mined from unstructured information to form a knowledge conceptual framework and relational graph and finally realize knowledge sharing,

knowledge reuse, and reasoning services. The financial analysis of the enterprise is helpful to analyze the deficiencies in the operation of the enterprise and find the problems existing in the operation mode. Fiscal planning helps firms to boost their profitability and contribute to their long-term growth.

In the process of case analysis, quantitative and qualitative research methods are used comprehensively to analyze both the business model of the enterprise qualitatively and the business efficiency of the enterprise quantitatively with the analysis method of financial performance. Use the support vector machine to analyze the financial status of the enterprise, reduce the dimensionality of the data, and simplify the variables, so as to obtain the global optimal solution.

2. Related Work

Financial accounting management is an important foundation for the normal operation of an enterprise, and improving the financial analysis ability of an enterprise is conducive to preventing enterprise risks. Khorunzhak and Koshchynets critically evaluate and differ current and pre-existing methods of appropriation and recording of financial resources in the field of religion and technology. He also makes proposal to eliminate lacunae and deficiencies, to organise effective management information systems for educational institutions, and to rationalise the use of budgetary funds. The granting of autonomy to educational institutions proved to have a favourable influence on their governance and fiscal means but can clearly complicate accounting issues [1]. Mu et al. analyse the different stages of the property and finance market in terms of real estate financial risk, and they discuss the transition conditions for different levels of risk. By calculating probabilities and risks, they analyse a warning as to what if any energy of real estate market financial risk is emitted beyond the system's carrying capacity [2]. Kim et al. developed a RAMSEY model for a small open economy. The experiment indicates that if the secular rate of autarky of a mini-open economy is greater than the WFR, the share of tradeable sector employment and value added will rise over time [3] Zhou et al. presented the Big Data Machine Learning framework. The various components of ML and MLBiD offer direction for identifying relevant areas of interest and define relevant possibilities and tasks, and unlock further untapped or unexplored areas of research [4]. Allawi et al. have worked on an AI tool. The main objective of this proposed model is to minimise the amount of deficit in water release and supply requirements for irrigation. The present investigation subjects the behaviour of the SML model to comparison with popular evolutionary computational methods, namely PSO and GA. A GA is a way to demonstrate Darwin's theory of biological evolution. The SMLA method was shown to perform better than even traditional algorithms during the simulation [5]. Stenheim and Madsen examine the fair value accounting system. Previous research has shown that the adoption of IFRS has had a mixed impact on accounting quality. IFRS, known in Chinese as International Financial Reporting Standards (IFRS), refers to a set of International Accounting Standards Board (IASB) pronouncements, including standards and interpretative pronouncements approved by the IASB. To investigate the variation in accounting quality, they adopted a panel design and used four commonly used accounting quality survey methods to conduct the survey. The results show that the relevance of accounting information in terms of valuation has improved with the adoption of IFRS [6]. Lu et al. want to develop a new idea of common smart recognition technology. They will also demonstrate the BI smart acquisition models developed in autonomous driving, precision medicine and industrial robotics [7]. Hassabis et al. argue that a far superior level of biological mind understanding could pay a vital role in creating capable devices. They mainly highlighted the current advances in AI. They concludes by highlighting common themes that may be key to driving future research in both fields [8]. Although these theories explore machine learning and financial accounting to a certain extent, the union of the two is less common and less practical.

3. Advanced Artificial Intelligence Model Method for Financial Accounting Transformation Based on Machine Learning

3.1. Overview of Financial Accounting. Financial accounting is a management method for the financial situation of an enterprise, usually an accounting report that publicizes the financial situation of an enterprise for a certain period of time [9, 10]. The outside world can analyze and evaluate the operating conditions of the enterprise based on the information disclosed by the enterprise. In fact, it is impossible to obtain a scientific and reasonable evaluation by analyzing any financial indicator alone. Therefore, to analyze the financial situation of an enterprise, it is necessary to carry out a related evaluation, which is explained from many aspects [11, 12]. Figure 1 shows the financial intelligence system architecture:

The overall architecture of the financial intelligence system is divided into three levels: the data acquisition layer, the data organization storage organization layer, and the data analysis display layer. The data organization storage layer is a platform for organizing and storing the data obtained from the data source.

The financial monitoring system is the internal monitoring of the enterprise; the system is a means of financial supervision. In the whole system, it penetrates into all aspects of the enterprise, not only requires the active participation of relevant personnel but more importantly requires technical support. Data warehouse is an important part of it, and data warehouse is an integral part of data mining technology [13, 14]. The data warehouse consists of three structures that work in tandem to meet the decision-making needs of business management [15, 16]. The market share of the software is illustrated in Figure 2.

3.2. Overview of Data Mining. Where there are data, data analysis is required. Data contain a lot of information, including both explicit and implicit information, and implicit

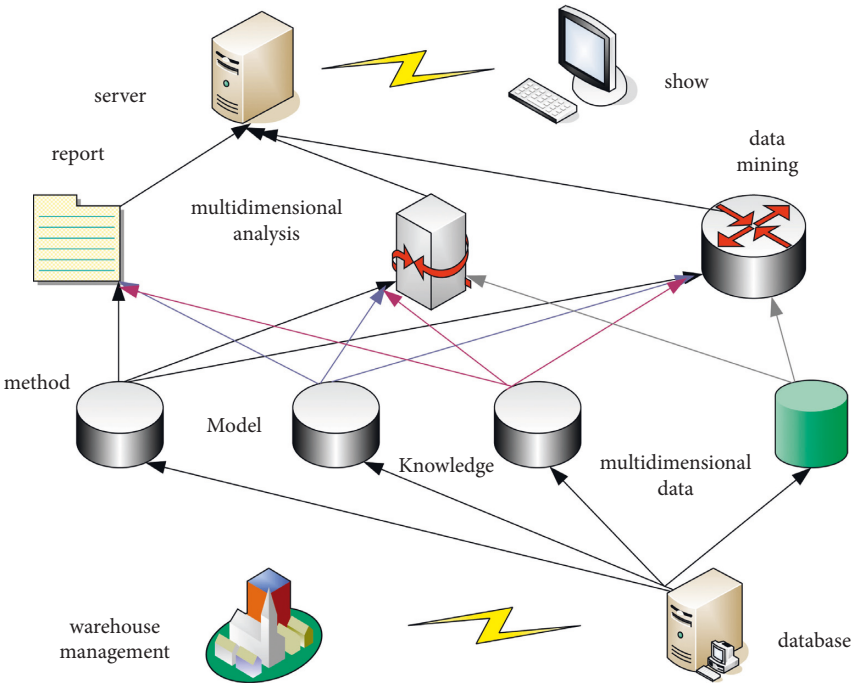

Figure 1: Financial intelligence architecture.

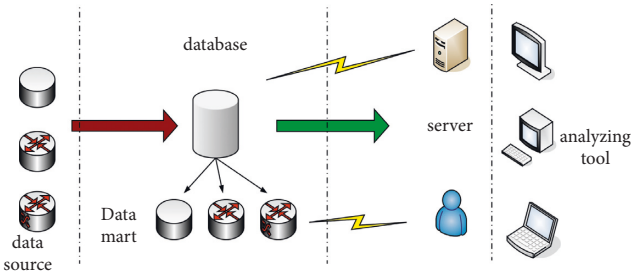

Figure 2: The system structure of the data warehouse.

information needs to be analyzed to reveal its value [17]. Data mining refers to the process of searching for information hidden in a large amount of data through algorithms, and by analyzing each data, find its rules from a large amount of data. The premise of the normal operation of an enterprise is to ensure the rationality of the internal economic system. Therefore, it is necessary to analyze the data appearing in the enterprise and dig out its potential information. Each node of the decision tree has different information [18, 19]. The exact setup is illustrated in Figure 3.

$$T(A) = \sum_{K}^{s} \frac{f_k + l_k}{f + l}, \quad j(f_k, l_k),$$
$$G(A) = J(x, v) - T(A), \tag{1}$$

where $G(A)$ stands for the gain of message for asset, and A represents the information gain of attribute B.

$$U(Y) = -\sum_{k}^{x} f_k \log_2(f_V). \tag{2}$$

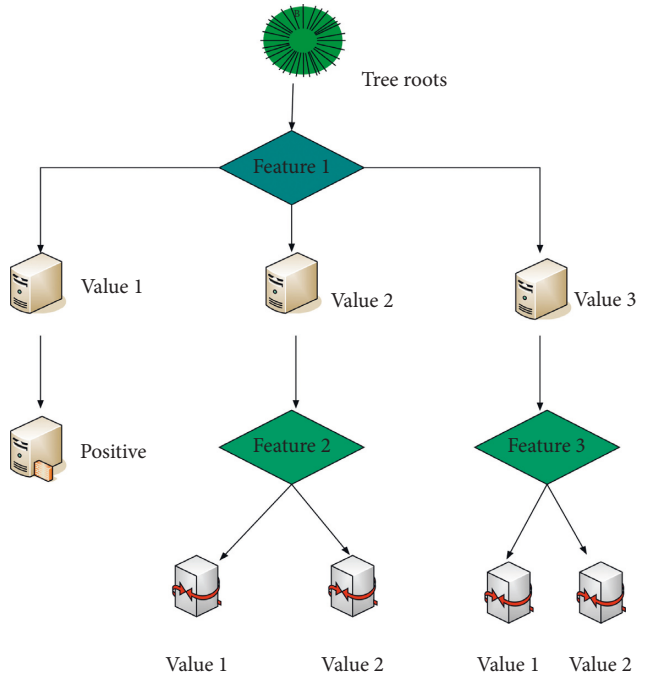

Figure 3: Decision tree structure.

Here, Y stands for the set of times and J for the quantity of information in the case of slivers.

$$y(a \mid c) = \frac{y(c \mid a) y(a)}{y(c)} = \frac{y(c \mid a) y(a)}{\int y(c \mid a) y(a) \mathrm{d}a}, \tag{3}$$

$$y(c_1 \mid a_2) = \int y(c_1 \mid c_2) \mathrm{d}c_2, \tag{4}$$

$$y(c_1 \mid a_2) = \frac{y(c_1 \mid a_1) y(c_1 \mid a_2)}{\int y(c_1 \mid a_1) y(c_1 \mid a_2) \mathrm{d}a_1}. \tag{5}$$

Formula (6) represents multiple integration operations.

The ID3 algorithm is a popular method of solving problems optimally [20]. The ID3 method uses the rate of decline in message entropy to select test properties and then continues the process until the resulting decision tree is able to classify the training examples perfectly. Figure 4 illustrates the basic principle of the ID3 algorithm.

$$\mathrm{Info}(S) = -\sum_{1}^{O} U_a \log_3 (U_a), \tag{6}$$

where U_a stands for the share of the representative specimen in the overall human body.

$$\begin{aligned} \mathrm{Info}_x(S) &= \sum_{1}^{o} \frac{|S_1|}{|S|} * \mathrm{Info}(S), \\ \mathrm{Gaint}(S) &= \mathrm{Info}(S) - \mathrm{Info}_X(S), \\ W_a &= \alpha + \beta W_{a-1} + \delta_a, \end{aligned} \tag{7}$$

where W_a is the requirement, β is the variation between requirements, and α is a constant.

The research progress of neural network can accelerate the development of artificial intelligence. Convolutional neural network is the most concerned branch of artificial neural network, which can process complex information and store valuable information. Figure 5 is a simple schematic diagram of a neural network:

$$l = g\left(\sum_{0}^{1} \sum_{0}^{1} n_{a+o,b+p} u_{op} + c \right). \tag{8}$$

Formula (11) represents the neural network function expression.

The forward propagation process of convolutional neural network is similar to that of ordinary artificial neural network. The formula is as follows:

$$u^x = w^x y^{x-1} + b^x. \tag{9}$$

Here, x represents the current level, u^x represents the received input, and y^x represents the output, w^x and b^x represent the connection weight and additive bias, respectively.

The forward relay formula of the convolutional layer is as follows:

$$u_n^x = f\left(\sum_{c} u_x^{x-1} \times W_L^x + C_n^x \right). \tag{10}$$

Here, n represents the subscript. W_L represents the set of the $x-1$ layer connected with the L feature maps of the x-th layer, and C represents the convolution window.

$$W = \int_S H(a) \mathrm{d}a. \tag{11}$$

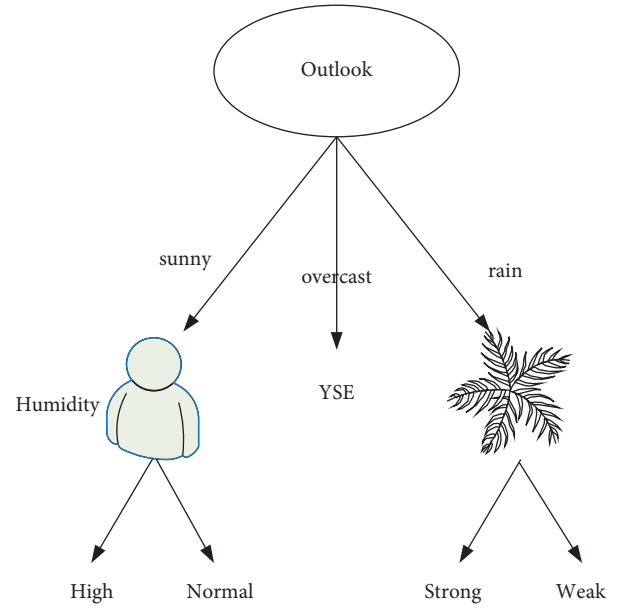

Figure 4: The ID3 algorithm is the basic principle.

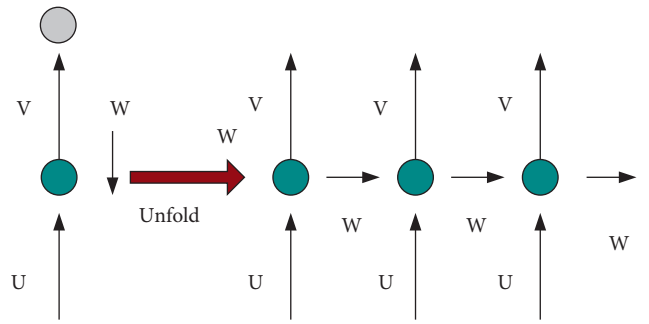

Figure 5: Neural structure of the recurrent network.

D-S evidence theory is a frequently applied fusion of sources of information. It does not need previous input in the calculation phase and is easy to use in practice. The following formulas can be represented:

$$\begin{aligned} y(\varphi) &= 0, \\ \sum_{S \subset \vartheta} y(s) &= 1. \end{aligned} \tag{12}$$

Here, $y(s)$ represents the basic probability assignment of S, and the size of $y(s)$ represents the degree of confidence in the proposition S.

$$\begin{aligned} \mathrm{Bel}(S) &= \sum_{A \subset S} y(A) (\forall S \subset \chi), \\ \mathrm{Bel}(\varphi) &= y(\varphi) = 0, \\ \mathrm{Bel}(\theta) &= \sum_{A \subset \theta} y(A) = 1. \end{aligned} \tag{13}$$

When θ is the discriminant frame, the domain is 0-1, which can be obtained:

$$pl(S) = 1 - \mathrm{Bel}(\overline{B}) = \sum_{A \cap S \neq \varphi} y(A). \tag{14}$$

3.3. Machine Learning. Machine learning is an important field of the rise of high-performance computer systems in the era of big data. It integrates artificial intelligence and big data application technology, and its application has spread to all branches of artificial intelligence. Deep learning is a new research direction of machine learning. Deep learning is a type of machine learning, and in fact, deep learning is derived from artificial neural networks. Deep learning explores the inner connection of the target and finally enables the robot to acquire analytical capabilities. Machine learning is classified into supervised learning and unsupervised learning according to whether training and testing data need to be manually labeled. Although recurrent networks have their own advantages, the problem of vanishing gradients remains unsolved. In order to solve the above problems, the long- and short-time network came into being. The long- and short-term neural network is a special recurrent neural network. The so-called recurrent neural network is the prediction that the network can solve the time-series problem. The recurrent neural network can be imagined as a neural network with multiple layers of the same network structure, and each layer transmits information to the next layer. Figure 6 shows the structure of the distributed machine learning system:

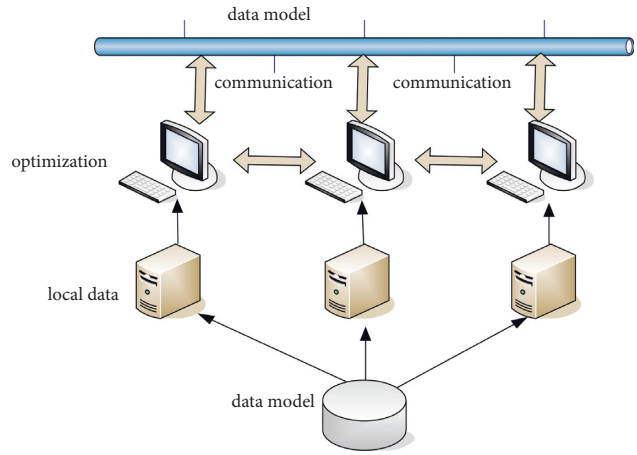

Figure 6: Distributed machine learning system structure.

4. Advanced Artificial Intelligence Model Experiment of Financial Accounting Transformation Based on Machine Learning and Enterprise Unstructured Text Data

4.1. Experimental Data Analysis. With the development of economic globalization, more and more economic activities are linked to other industries. Fund stability is the premise to ensure the normal operation of enterprises. Therefore, enterprise management needs to prevent financial crises, establish a scientific and reasonable financial early warning mechanism, and remind enterprises to take measures in advance to prevent enterprises from going bankrupt. In order to predict financial risks, we take Company A as the object and analyze its financial status. The details are shown in Table 1.

According to the data in Table 1, we use four different methods to predict the results of enterprises and use different sample sizes to ensure the accuracy of the prediction results. According to the data, the first prediction result of the decision tree is 92.6%, the second prediction result is 93.1%, and the comprehensive prediction result is 92.85%. The first prediction result of the discriminant is 96.5%, the second prediction result is 84.5%, and the comprehensive prediction result is 88.55%. The first prediction result of logistic binary regression is 91.3%, the second prediction result is 82.7%, and the comprehensive prediction result is 87%. The first prediction result of the support vector machine is 97.4%, the second prediction result is 94.3%, and the comprehensive prediction result is 94.85%. According to the data, whether it is the first test or the second test, the test result of the support vector machine is the highest.

Table 1: Comparative analysis of prediction results.

Type	Sample	Results (%)	Sample	Results (%)	Overall results (%)
Decision tree	30	92.6	33	93.1	92.85
Discriminant	30	96.5	33	84.5	88.55
Logistic binary regression	30	91.3	33	82.7	87
Support vector machine	30	97.4	33	94.3	95.85

4.2. Enterprise Financial Risk Analysis. The various types of funds of an enterprise represent different risk situations. For example, the larger the value of the quick ratio, the stronger the short-term solvency of the company and the lower the possibility of the company's financial risk. Enterprises can adopt different management methods for enterprises according to their capital situation. According to its different indicators, we have analyzed the financial situation of the company, the specific situation is as Table 2.

According to the data in Table 2, we have made a brief analysis of the sales and operation of Company A in recent years. According to the data, the sales growth rate in 2021 will be −15%, and the cumulative capital growth rate for the year will be −57%. According to the capital indicators mentioned above, the former is a heavy alarm, and the latter is a mega alarm, which shows that the operating conditions of the year were poor. The sales growth rate in 2020 is −7%, and the cumulative growth rate of capital for the year is −34%. The former is a heavy alarm, and the latter is a mega alarm, which indicating that the sales decline in this year is high. The sales growth rate in 2019 was 47%, and the cumulative capital growth rate for the year was 16%, both of which belonged to the no-alarm status, indicating that the year's operating conditions were good.

Table 2: Analysis of the development capacity of enterprises.

Category	Sales growth (%)	Capital accumulation (%)
Numerical value	−15	−57
Alarms	Heavy alarms	Mega alarms
Numerical value	−7	−34
Alarms	Heavy alarms	Mega alarms
Numerical value	47	16
Alarms	No alarm	No alarm

Table 3: Analysis of corporate solvency.

Category	Asset repayment (%)	Quick ratio
Numerical value	85	0.21
Alarms	Heavy alarms	Giant alarm
Numerical value	74.3	0.43
Alarms	Medium alarm	Heavy alarms
Numerical value	71.6	0.85
Alarms	Medium alarm	Light alarm

Enterprises can develop faster in the future, usually through financing. Although this situation will bring funds to the enterprise in the short term, the asset–liability ratio of the enterprise will continue to increase, and the phenomenon of excessive financial expenses will appear in the long run. When the financial cost is too high, it will lead to the loss of corporate profits. According to the data in Table 3, in 2021, the asset–liability ratio of the enterprise is 85%, and its quick ratio is 0.21. According to the classification of alarm situation, the former belongs to the heavy alarm, and the latter belongs to the giant alarm. In 2020, the asset–liability ratio of the company is 74.3%, and its quick ratio is 0.43. According to the classification of alarm situation, the former belongs to the medium alarm, and the latter belongs to the heavy alarm. In 2019, the company's asset debt service ratio was 71.6%, and its quick ratio was 0.85. According to the classification of alarm situations, the former belonged to the medium alarm, and the latter belonged to the light alarm. According to the data, the asset debt service ratio of the enterprise is much higher than the standard value, and the value is constantly rising, indicating that the financial expenses of the enterprise are too high, and the short-term repayment ability of the enterprise is low.

4.3. Comprehensive Analysis of Corporate Profits. According to the previous data, the operating level of the enterprise has decreased in recent years, and the profitability has decreased. In order to analyze its profit level, we conducted a survey of its profitability indicators, which are as in Table 4.

According to the data in Table 4, we have investigated the assets of the company. According to the data, the return on assets in 2021 will be −5%, the net interest rate on equity will be −54.3%, and the business profit rate will be 0.78%. According to the classification of alarm level, all three belong to giant alarms, indicating that the business situation of the company in that year was worrying, and the company's income was small. In 2020, the return on assets was −11.2%, the net profit margin on equity was −44.5%, and the operating profit margin was −12.1%. According to the classification of alarm level, all three belong to giant alarm, indicating that the company's profit was small in that year. Return on assets in 2019 was 0.4%, net profit margin on equity was −10.2%, and operating profit margin was 19%. According to the classification of alarm level, the asset remuneration is heavy alarm, the net profit is giant alarm, and the profit rate is light alarm, indicating that the business operation of the year was relatively general. According to the overall data situation, the profitability of the company has been declining in recent years, and there is even the risk of bankruptcy.

Table 4: Analysis of enterprise profitability.

Category	Return on assets	Net equity margin	Operating margin
Numerical value	−5	−54.3	0.78
Alarms	Giant alarm	Giant alarm	Giant alarm
Numerical value	−11.2	−44.5	−12.1
Alarms	Giant alarm	Giant alarm	Giant alarm
Numerical value	0.4	−10.2	19
Alarms	Heavy alarms	Giant alarm	Light alarm

5. Comprehensive Analysis of Advanced Artificial Intelligence Models for Financial Accounting Transformation

5.1. Comprehensive Analysis of Asset Projects. During the normal operation of an enterprise, there will be many capital activities. We take a large retail enterprise as an example for investigation and analysis. During this process, we investigated the capital situation of the company, and the details are as in Figure 7.

According to the data in Figure 7, we have conducted a brief survey of the company's assets and accounts to analyze the company's assets. According to specific data, in 2017, the company's current assets were 550 billion yuan, of which assets were 820 billion yuan. In 2018, the company's current assets were 510 billion yuan, of which assets were 835 billion yuan. In 2019, the company's current assets were 580 billion yuan, of which assets were 870 billion yuan; in 2020, the company's current assets were 820 billion yuan, of which assets were 1,370 billion yuan. In 2021, the company's current assets were 850 billion yuan, of which assets were 1,580 billion yuan. According to the data, in recent years, the company's current assets have been on the rise as a whole, and the company's total assets have grown slowly in the early stage. According to the data, in recent years, the company's current assets have been on the rise as a whole, and the company's total assets grew slowly in the early stage, but in 2020, the total assets increased by about 58%. It can be seen from this that the financing of enterprises has continued to expand in recent years, and the scale of production has also increased.

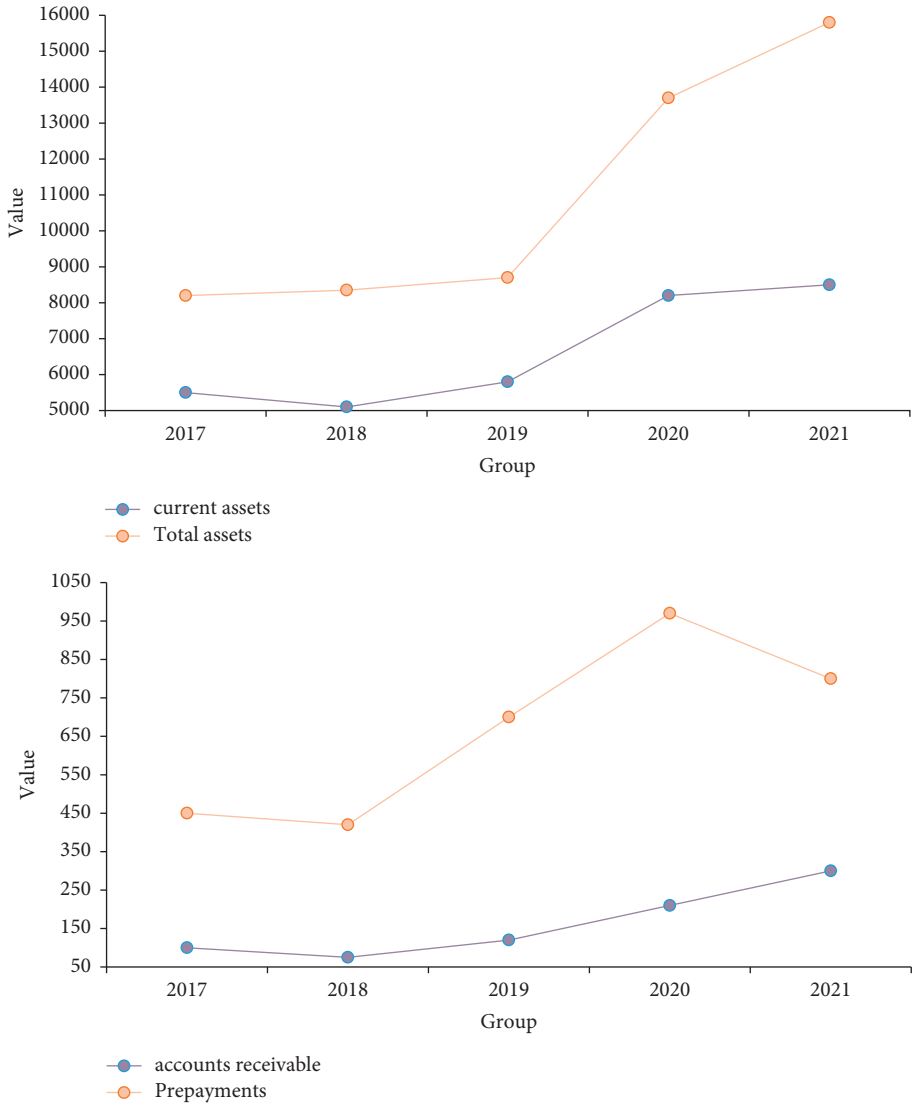

Figure 7: Enterprise asset project analysis.

From the perspective of the company's accounts, in 2017, the company's accounts receivable were 10 billion yuan, and its prepaid accounts were 45 billion yuan. In 2018, the corporate accounts receivable were 7.5 billion yuan, and the prepaid accounts were 42 billion yuan; in 2019, the corporate accounts receivable were 12 billion yuan, and the prepaid accounts were 70 billion yuan. In 2020, corporate accounts receivable were 21 billion yuan, and prepayments were 97 billion yuan; in 2021, corporate accounts receivable were 30 billion yuan, and prepayments were 80 billion yuan. According to the data, in 2018, the company's accounts receivable and prepayments decreased compared with the previous year, and in other years, it showed an upward trend, and the fluctuation of accounts receivable was relatively large. It can be seen that in recent years, the scale of assets of the enterprise has been continuously expanded, the asset structure has been continuously optimized, and the capital turnover rate has been relatively good.

According to the data in Figure 8, we have analyzed the company's liabilities and accounts. According to the survey data, in 2017, the current liabilities of enterprises were 42 billion yuan, and the total liabilities were 53 billion yuan. In 2018, the company's current liabilities were 41.5 billion yuan, and the total liabilities were 52 billion yuan; in 2019, the company's current liabilities were 46 billion yuan, and the total liabilities were 56 billion yuan. In 2020, the company's current liabilities were 61 billion yuan, and the total liabilities were 67 billion yuan; in 2021, the company's current liabilities were 65 billion yuan, and the total liabilities were 73 billion yuan. According to the data, in addition to the decrease in liabilities in 2018, current liabilities and total liabilities have increased in other years, and current liabilities account for more than 80% of total liabilities. This reduces the utilization rate of funds to a certain extent and is not conducive to maintaining the relationship with partners, easily triggering trust relationships, and bringing risks to business operations.

Judging from the company's accounts, in 2017, the company's accounts payable were 1 billion yuan, and the advance receipts were 70 million yuan. In 2018, the

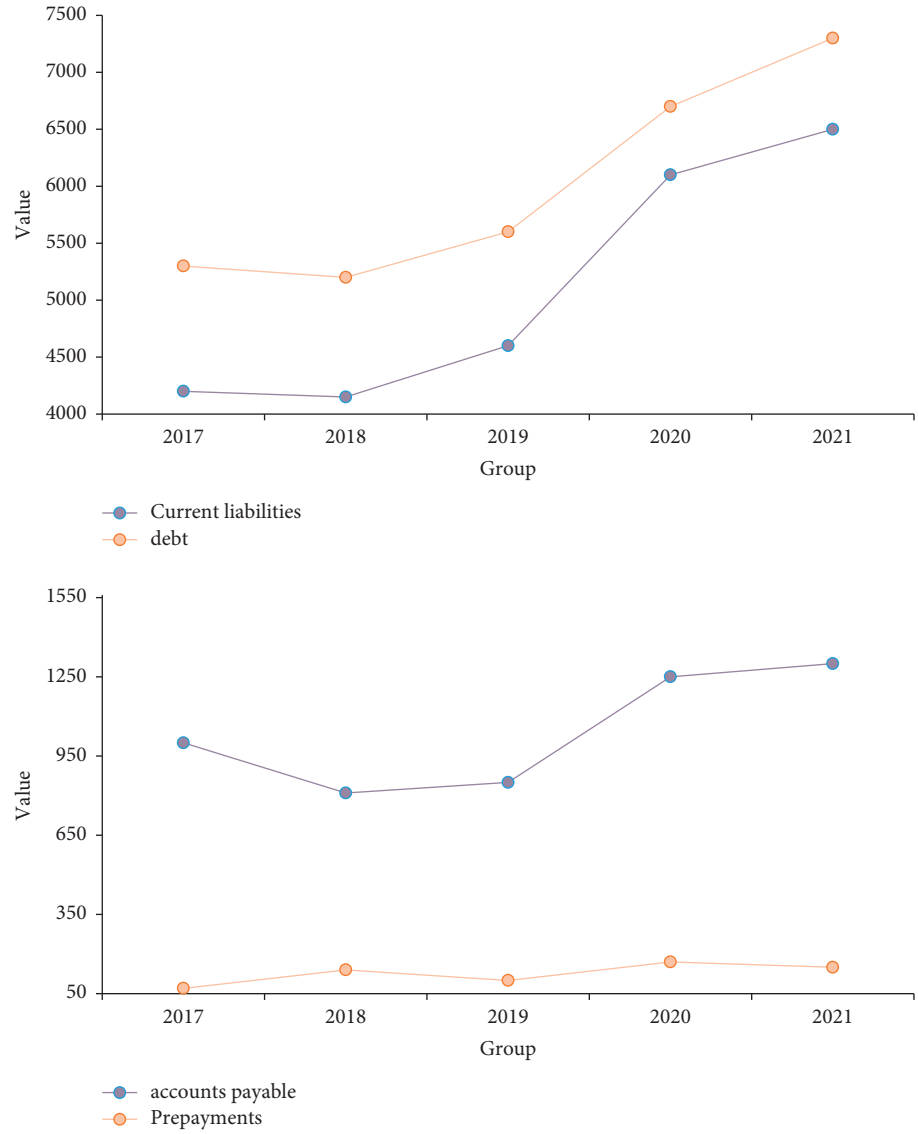

Figure 8: Analysis of corporate liabilities and equity.

company's accounts payable were 810 million yuan, and the advance receipts were 140 million yuan. In 2019, the company's accounts payable were 850 million yuan, and the advance receipts were 100 million yuan; in 2020, the company's accounts payable were 1.25 billion yuan, and the advance receipts were 170 million yuan. In 2021, the company's accounts payable were 1.3 billion yuan, and its advance receipts were 150 million yuan. According to the data, the changes in the company's accounts in advance are small, and its accounts payable decreased in 2018 but increased in other years, which shows that the company's debt is constantly increasing, and the company needs to pay attention to preventing the emergence of debt crises in a timely manner.

5.2. Comprehensive Analysis of Cash from Operating Activities. As a large retail enterprise, the enterprise operates in various ways. Although most of the cases are electronic payment, it is still part of the cash flow. In order to talk about the company's cash flow situation, we conducted a survey of the company's cash activities, the details are as Figure 9.

According to the data in Figure 9, we have investigated various cash flows of enterprises. From the perspective of cash from operating activities, in 2017, cash inflows from operating activities were 130 billion yuan, and cash outflows from activities were 125 billion yuan; in 2018, cash inflows from operating activities were 140 billion yuan, and cash outflows from activities were 143 billion yuan. In 2019, the cash inflow from operating activities was 159 billion yuan, and the cash outflow from activities was 152 billion yuan; in 2020, the cash inflow from operating activities was 175 billion yuan, and the cash outflow from activities was 170 billion yuan; in 2021, the cash inflow from operating activities was 230 billion yuan, and the cash outflow from activities was 237 billion yuan. According to the data, in the past 5 years, the company's operating cash inflow and

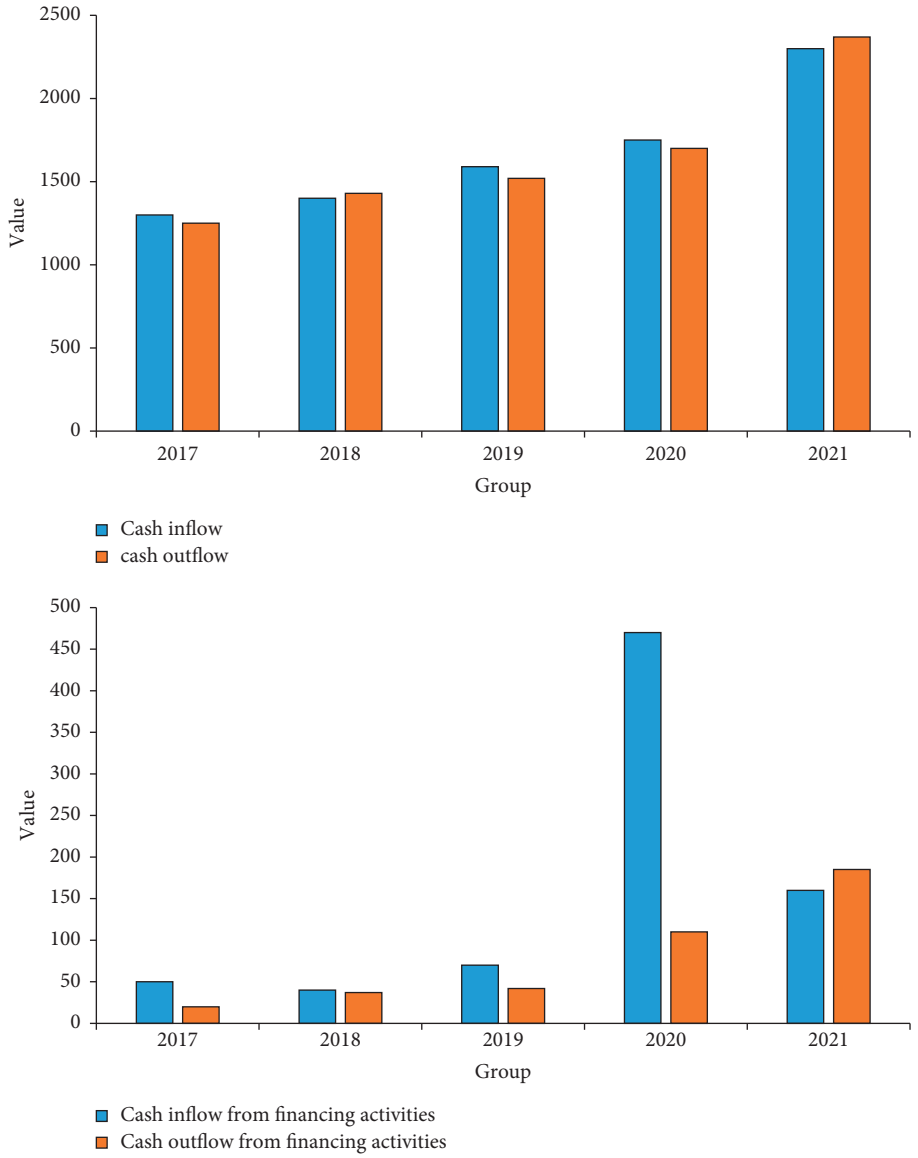

Figure 9: Analysis of cash from operating activities.

outflow have been rising, and the difference between the two is small, indicating that the company's cash flow has remained relatively stable.

From the cash situation of financing activities, in 2017, financing cash inflow was 5 billion yuan, and financing cash outflow was 2 billion yuan; in 2018, financing cash inflow was 4 billion yuan, and financing cash outflow was 3.7 billion yuan. In 2019, the financing cash inflow was 7 billion yuan, and the financing cash outflow was 4.2 billion yuan; in 2020, the financing cash inflow was 47 billion yuan, and the financing cash outflow was 11 billion yuan; in 2021, the financing cash inflow was 16 billion yuan, and the financing cash outflow was 18.5 billion yuan. According to the data, the inflow of funds by enterprises in 2020 had increased rapidly, indicating that in 2020, enterprises had conducted a large amount of financing, and in 2021, there was a large inflow of funds due to the maturity of accounts.

5.3. Profitability Analysis. The purpose of an enterprise is to make profits, and profitability is the ability of an enterprise to obtain profits from operations, and it is the embodiment of the operation of the enterprise. This ability will affect the financing situation of the enterprise and have a great impact on the subsequent development of the enterprise. In order to understand the profitability of the company, we conducted a survey on the profitability of the company as shown in Figure 10.

According to the data in Figure 10, from the perspective of sales profit, the sales profit of the company in 2017 was 15%, and the sales profit of the market was 21%. In 2018, the company's sales profit was 15.2%, and the market's sales profit was 21.4%; in 2019, the company's sales profit was 16.3%, and the market's sales profit was 19.5%. In 2020, the company's sales profit was 14.7%, and the market's sales profit was 20%; in 2021, the company's sales profit was 15.4%, and the market's sales profit was 21.1%. According to

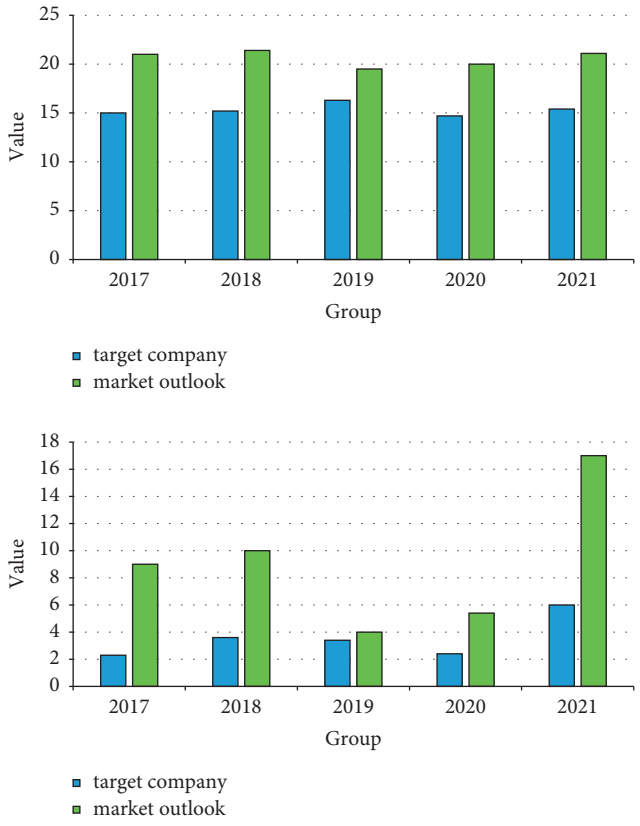

Figure 10: Profitability analysis.

the data, the profit of the company has always been lower than the market situation, but when the market profit decreases, the profit of the company does not decrease with it. This shows that the enterprise is not disturbed by the market environment, which shows that the market competition of the enterprise in the industry is relatively large.

From the perspective of asset returns, in 2017, the rate of Return on Equity for the Company is 2.3% and for the market is 9%; in 2018, the rate of Return on Equity for the Company is 3.6% and for the market is 10%; in 2019, the rate of Return on Equity for the Company is 3.4% and for the market is 4%; in 2020, the rate of Return on Equity for the Company is 2.4%, and the market's return on assets was 5.4%. In 2021, the return on assets for companies was 6%, and the return on assets for the market was 17%. According to the data, the company's income fluctuates greatly, and the overall income is lower than the market level. The company should rectify its management methods.

6. Conclusions

The development time of financial accounting is long, and it has its characteristics in each development stage. With the continuous advancement of technology, the combination of technology and production has become the mainstream. The continuous deepening of informatization also forces the continuous transformation and upgrading of financial accounting models. This paper aims to study the advanced artificial intelligence model of financial accounting transformation based on machine learning and enterprise unstructured text data, expecting to upgrade the management of financial accounting and improve its analysis level with the help of machine learning and unstructured text technology. Although this paper discusses it, there are still deficiencies. Although the author tries to carry out quantitative analysis, the level is limited, and the problems existing in the operation of the enterprise cannot be deeply discussed, so the convincing power of the conclusion needs to be improved.

Data Availability

No data were used to support this study.

Conflicts of Interest

The author declares that there are no conflicts of interest.

References

[1] N. M. Khorunzhak and M. I. Koshchynets, "The administrative transformation processes in Ukraine and their impact on financial provision and accounting in the sphere of education," *Business Inform*, vol. 5, no. 520, pp. 308–316, 2021.

[2] L. L. Mu, Y. Li, and Y. W. Cheng, "Risk analysis of the real estate financial market based on risk energy theory," *International Journal of Corporate Finance and Accounting*, vol. 8, no. 1, pp. 15–26, 2021.

[3] K. Kim, W. Oh, and E. Y. Song, "International capital mobility and structural transformation," *The B.E. Journal of Macroeconomics*, vol. 19, no. 1, pp. 1–11, 2018.

[4] L. Zhou, S. Pan, and J. Wang, "Machine learning on big data: opportunities and challenges," *Neurocomputing*, vol. 237, no. 10, pp. 350–361, 2017.

[5] M. F. Allawi, O. Jaafar, and M. Ehteram, "Synchronizing artificial intelligence models for operating the dam and reservoir system," *Water Resources Management*, vol. 32, no. 10, pp. 1–17, 2018.

[6] T. Stenheim and D. Ø Madsen, "The shift of accounting models and accounting quality: the case of Norwegian GAAP," *Corporate Ownership and Control*, vol. 14, no. 4, pp. 289–300, 2017.

[7] H. Lu, Y. Li, and C. Min, "Brain intelligence: go beyond artificial intelligence," *Mobile Networks and Applications*, vol. 23, no. 7553, pp. 368–375, 2017.

[8] D. Hassabis, D. Kumaran, and C. Summerfield, "Neuroscience-inspired artificial intelligence," *Neuron*, vol. 95, no. 2, pp. 245–258, 2017.

[9] M. Zhou, R. S. McCrea, and E. Matechou, "Removal models accounting for temporary emigration," *Biometrics*, vol. 75, no. 1, pp. 24–35, 2019.

[10] S. Halaoua, B. Hamdi, and T. Mejri, "Earnings management to exceed thresholds in continental and Anglo-Saxon accounting models: the British and French cases," *Research in International Business and Finance*, vol. 39, no. pt, pp. 513–529, 2017.

[11] J. Geraci, P. Wilansky, and V. D. De Luca, "Applying deep neural networks to unstructured text notes in electronic medical records for phenotyping youth depression," *Evidence-Based Mental Health*, vol. 20, no. 3, pp. 83–87, 2017.

[12] S. Liu, X. Wang, and M. Liu, "Towards better analysis of machine learning models: a visual analytics perspective," *Visual Informatics*, vol. 1, no. 1, pp. 48–56, 2017.

[13] L. Gong, X. Zhang, and T. Chen, "Recognition of disease genetic information from unstructured text data based on BiLSTM-CRF for molecular mechanisms," *Security and Communication Networks*, vol. 2021, no. 4, pp. 1–8, 2021.

[14] C. Voyant, G. Notton, and S. Kalogirou, "Machine learning methods for solar radiation forecasting: a review," *Renewable Energy*, vol. 105, no. MAY, pp. 569–582, 2017.

[15] T. Serebryakova, A. Suglobov, and T. Fedosenko, "The problem of risk management of business activities on the basis of estimates of financial statements," *Russian Journal of Management*, vol. 8, no. 2, pp. 56–60, 2020.

[16] J. H. Chen and S. M. Asch, "Machine learning and prediction in medicine - beyond the peak of inflated expectations," *New England Journal of Medicine*, vol. 376, no. 26, pp. 2507–2509, 2017.

[17] M. Rudaia, "Transformation prising innovations in offshore operations," *Criminalistics and Forensics*, vol. 2019, no. 64, pp. 699–707, 2019.

[18] F. Zhuravka, "Problem aspects of transformation in financial reporting of business entities in Ukraine," *Geopolitics under Globalization*, vol. 1, no. 1, pp. 36–44, 2017.

[19] A. Ibragimova, "Transformation of management accounting results to NON-financial and financial information in geological exploration," *Vestnik of Kazan State Agrarian University*, vol. 14, no. 4, pp. 100–106, 2020.

[20] Y. Shoha'zami, "Macroeconomic model of evaluation of (S=1) condition of open financial market," *International Finance and Accounting*, vol. 2018, no. 1, 29 pages, 2019.