Research on Building Automation Platform with Computer Data Mining Technology

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Abstract. Data mining, in general, uses a series of technical means to complete the discovery and display of the potential value of data. Now that the goal is clear, the means to achieve the goal is not the only choice. In today's real-world data work, the data we need to work with is often diverse [1]. For example, imagine such a scenario: if we need to conduct some analysis on a product, the data may come from user comments and click-through rates on social media, or from transaction data obtained from sales channels, or historical data, or product information captured from product websites. This shows how data mining technology will play a role in the future. Based on this, we design the automatic control platform of data mining, and explore the construction of automatic platform of data mining technology.

Keywords: Data Mining Technology, Automation, Control Platform

1. Introduction

Data mining automation platform is a relatively complex data product, and the complexity of the company will further increase with the increase of the company's volume. One aspect of its complexity is that it takes on so many business requirements that how to abstract and manage them is a problem. A little careless, not only the department brothers tired of working hard, but also produce a large number of useless "report body", the whole BI platform will become a data dump, burning body heap. The second aspect is that data in the long run is a fine work, dirty work, tiring work. How to ensure the safety, quality and specification of data requires the continuous design of various mechanisms to monitor and optimize, which undoubtedly gives rise to another set of systems. Finally, if the platform also hopes to have some interaction and help with the business, it should constantly enrich the scene and develop tools. But because of this, it is also natural to become the grasp of enterprise management and mining data assets, in the future enterprise competition will appear very important. Therefore, the construction
of a good data mining automation platform, a long way to go. The following diagram shows the experience of data mining process [2].

![Data Mining Process Diagram](image)

**Figure 1.** Data Mining Process

2. **Computer Data Mining**

Data mining generally refers to the process of searching and hiding information from a large number of data through algorithms, which is suitable for large-scale data collection and processing, and provides a broader data control platform for users [3]. With the continuous increase of computer users, data mining security technology is more widely used, as shown in figure 1, which reflects the operability of database mining function.

2.1. **Mining data**

Data mining is usually related to computer science and achieves the above goals through many methods, such as statistics, online analysis and processing, intelligence retrieval, machine learning, expert systems and pattern recognition [4]. Computer database is a centralized area of data, which is composed of many different kinds of data. It becomes the control platform for users to collect and process data. Data mining can search out potential valuable data. The effective utilization rate of data resources is improved.

![Data Encryption Technology Diagram](image)

**Figure 2.** Data Encryption Technology
2.2. Regulatory data

As the operation center of computer control system, database is responsible for all kinds of data control and processing, and helps users solve the problems of actual data use. Deep mining of potential data can improve the available space of data, strengthen the control and processing of raw data, and then realize the automatic operation platform. Setting data mining mode provides a shortcut for users to control data and filter out valuable data independently.

3. Data mining automation principles

As the number of computer users continues to increase, the data mining system also begins to form a relatively fixed mode and bear a lot of data processing loads [5]. In order to avoid the application problems caused by the overload of data volume, data mining automation is designed patterns are indispensable, and their design principles:

3.1. Variety

Data mining automation is a mining operation for all forms of data [6]. According to the practical application requirements of users, mining scheme is adopted to develop and utilize database resources in depth, which has obvious diversity characteristics. The system can read data from many sources and formats, including text data, spreadsheet data, data stored in multiple databases and data warehouse.

3.2. Systematicness

OAt present, the database has formed a relatively complete analysis mode, according to the user search data use requirements to execute system commands, these are the feasibility requirements of data mining automation, as shown in figure 2. For example, the analytical methods provided by the system mainly include: neuronal network, time series, cluster analysis, correlation analysis and other univariate or multivariate statistical analysis methods, such as linear regression, principal component analysis, factor analysis and so on [7].
3.3. Sharing

The analysis results can automatically generate a variety of format report files, data results can be easily exported, providing a data sharing platform for computer users. Data mining automation is equipped with a query system [8]. If the user sets a query scheme according to the requirements of data use, he can search the relevant data resources in a short time, and download, transmit, store and other related data from the Internet can be used normally.

4. Design of Data Mining Automation Control Platform

Data mining is the development and utilization of database resources many times, and the corresponding data collection system is established according to a certain standard, so as to realize the comprehensive utilization of data information and provide a more secure information utilization platform for users [9]. Based on the principle of data mining automation, the design of data automation control platform can be divided into four modules: interface layer, network layer, security layer and processing layer.

4.1. Boundary layer
Improved, easy-to-use graphical user interfaces and "wizards" should be chosen to improve the ease of setting and use, and the design of interface layer can improve the availability of data resources. If small networks use traditional large-scale management applications, they often produce more complexity than they can solve.

4.2. Network layer

By establishing the network rules as the specific communication type on the network, the matching network is quickly selected to realize the data mining operation. In addition, the network layer provides the necessary modules for remote control, sets the remote voice communication system, and reduces or prohibits the priority of other communication types.

4.3. Safety layer

Get tested and reliable network management software to perform upgrades to add new features that the network does not yet have. These enhancements include new report functionality and inherent security measures. Security problem is urgently needed in data mining, and adopting data security protection is an effective way to resist data risk.

4.4. Processing layer

The new report function can automatically generate reports, which are the necessary operating conditions for data mining post-processing [10]. In addition, data processing enables the integration of resources and allows them to be used to execute more advanced processing instructions.

5. Difficulties and challenges in data mining

According to the characteristics of different data storage types, targeted research is a popular and necessary problem in the future. In addition, the representation of knowledge includes how to express the excavated knowledge effectively and make it easy to understand. For example, how to visualize data and promote people to find knowledge actively. Visualization requirement has become an essential technology of information processing system. For a data mining system, it is even more important. In addition to combining with good interactive technology, visual mining must be explored and practiced in the aspects of visualization of mining results or knowledge patterns, visualization of mining process and visualization to guide user mining. Therefore, the further study of knowledge representation will be an important step in the practical application of data mining.

Clearly, the current data mining system is not satisfactory, people can not call the relational database system SQL language can quickly query what they want. Although the basic framework and process of data mining system have become clear after many years of exploration, it still needs to be refined and deeply studied in the specific implementation mechanism, technical route and functional orientation of each stage or component (such as data cleaning, knowledge formation, pattern evaluation, etc.), which is influenced by the application field, mining data type and knowledge expression mode. Because data mining is the discovery of potential and unknown knowledge in a large number of source data sets, it is inevitable to conduct exploratory mining interactively with users. This interaction may occur at different stages of data mining, from different angles or granularity. So good interactive mining is also the premise of the success of data mining system.
6. Conclusion

Is now all life to the wisdom of the process of development, is a variety of scenarios in the future life, we will urgently need to design a set of data mining automation planning control platform to help us for different types of data integration, transformation, and management automation, and on this basis to help us extend out more features, such as automatic generate reports, automatically to forecast customer behavior, and even do some of the more complex analysis, etc. Faced with this situation, we can try to build a set of automatic planning and control platform system of data mining. Make your work data, process and automation, so that our work and life are easier.

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