Research on the Construction of University Innovation and Entrepreneurship Information Sharing Platform Based on Big Data Analysis

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Abstract. Firstly, this paper analyzes the importance of building the information sharing platform of university innovation and entrepreneurship under big data analysis, and then analyzes the ways of building the information sharing platform of university innovation and entrepreneurship under big data analysis. Including the detailed discussion and planning of the platform software design, platform operation system and platform construction process. Finally, the experimental analysis and the conclusion are expounded, which promotes the rapid development of the information sharing platform of innovation and entrepreneurship in colleges and universities under the big data analysis.

Keywords: big data, universities, innovation and entrepreneurship, information sharing, Constructing platform probe

1   Introduction

With the increasing number of college graduates in China, there are more and more employment problems for college graduates, so it is of great significance for colleges and universities to carry out innovation and entrepreneurship. Integrating big data analysis and building an information sharing platform in the innovation and entrepreneurship of colleges and universities can make the data information share and spread, and also improve the process of data collection and processing. Big data analysis is based on Kafka as a unified collection platform, which provides configurable and flexible data collection capabilities. Then, data is analyzed and processed by hadoop technology, and finally the information source under big data analysis is received through open access system, and finally the sharing of data information is realized.

2   The importance of building an information sharing platform for innovation and entrepreneurship in colleges and universities under big data analysis

Integrating and analyzing large-scale data is the working characteristic of big data analysis. Fast speed, various types, large amount of data, value and authenticity are the five V's of big data. It provides a source for the emergence of talents in colleges and universities in China, so colleges and universities also have rich data information on innovation and entrepreneurship. Through big data analysis, the information is processed and analyzed to build an information sharing platform. With the continuous development of today's society, there are more and more college graduates, and the supply of college graduates exceeds demand. Therefore, it is important to study the construction of information sharing platform for innovation and entrepreneurship in colleges and universities. In 2004, the Ministry of Science and Technology started the construction of the national science and technology infrastructure platform. Its purpose is to make full use of the advantages of Internet technology, establish a platform for sharing science and technology information resources, and effectively promote the sharing of science and technology information resources to a more standardized and scientific development direction. According to the survey, there are still some problems in the construction of information sharing platform for innovation and entrepreneurship in many universities in China, such as low work efficiency, slow transmission rate and unsustainable development. To solve these problems, universities have introduced big data analysis technology into the construction of information sharing platform, and big data analysis technology mainly uses front-end open source tools such as jaspersoft, pentaho and spagobi. Through Analytic Visualizations, the data information can be displayed intuitively, so that users can hear the results and let the data speak for themselves. Through Data Mining Algorithms, the speed and quantity of big data can be processed. If visualization is to show the data to people, then the data mining algorithm is to show the data to the machine. Through several technical operations of big data analysis, it can ensure the authenticity, high efficiency and sustainable development of the information sharing platform in colleges and universities. In addition, the big data analysis technology has broken the problems of the traditional information sharing platform, such as outdated resources and untrue information, making the university entrepreneurship platform more intelligent, improving the working efficiency of the sharing platform, and making the university innovation and entrepreneurship get great development and progress. After collecting data information, the sharing port analyzes and processes the data and cleans it, then mines and predicts the data, and finally displays the processed and analyzed data by using the presentation layer, in which the presented data can show different data contents according to the different needs of users. The application of the information sharing platform for innovation and entrepreneurship in colleges and universities shows that the platform can analyze and study different students' development trends. Then find out the most suitable innovation project in the database and analyze the future development direction of the student. In this way, college students can not only actively participate in innovation and entrepreneurship activities, but also enrich

themselves in this activity. Big data analysis technology promotes the development of innovation and entrepreneurship activities in colleges and universities, which is of great significance in building information sharing platform.

3   Ways to build the information sharing platform of innovation and entrepreneurship in colleges and universities under the big data analysis

3.1   Platform operation system

As shown in Figure 1, the shared platform system of innovation and entrepreneurship in universities under big data, the shared object is the most important part of the information platform construction process. The shared object can collect and process the daily learning process, academic performance, experimental practice process and university government decision-making data of university students, and then submit it to the information platform (data collection, data processing, data cleaning, data analysis) for processing and analysis. Information is collected from shared objects through open access mechanism, and then small batches of data are processed through steam. steam process is more complicated and expensive to process data, but it can shorten the delay time between analyzing data and collecting data, and finally clean the data. This process can eliminate or explain any duplicate or unwanted data with incorrect format. The platform operation system in the construction of university innovation and entrepreneurship information sharing platform is mainly reflected in the following aspects: firstly, through big data, we can collect and store resources such as the direction and objectives of university innovation and entrepreneurship information sharing platform, then store them in the database, and finally use the resource integration system in big data to integrate, arrange and classify university innovation and entrepreneurship data information stored in the database. In this way, we can build a complete and beneficial benefit sharing relationship. The construction of this system not only promotes the rapid development of university innovation and entrepreneurship information sharing platform under big data analysis, but also ensures the security, reliability, authenticity and sustainability of the resource sharing environment. It is connected with university innovation and entrepreneurship information sharing platform through relevant technical software, so that offline and online shared resources can be integrated. The speed of data sharing is improved. When college students participate in innovative and entrepreneurial activities or projects, big data analysis technology will give full play to its role. By analyzing students' academic achievements and development path, and then comparing with the data stored in the database, we can find innovative projects suitable for the students and plan their future development direction. In addition, the management collaboration system in big data analysis system can play a guiding role, which can improve the organizational integration ability of colleges and universities.
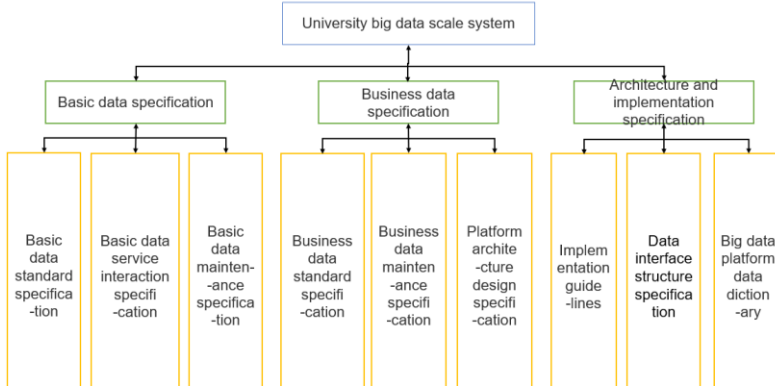
Fig. 1. Platform operation system

3.2   Platform design and construction

The second is the complete structure diagram of the innovation and entrepreneurship sharing platform of universities under the big data analysis technology. From the diagram, we can easily find that the source layer, data layer, analysis layer and presentation layer together constitute the innovation and entrepreneurship information sharing platform. Firstly, the platform sorts out and analyzes the data, then stores and samples it, and finally transforms its data information into shared information through big data analysis technology. The structure that can collect and analyze data is called the source layer, such as the analysis of personal data information and teaching system information of college students; The data layer can simplify the processing of data information from the source layer, which improves the speed of data information mining and cleaning, and makes its work faster and more convenient. The data simplified from the data layer will flow into the analysis layer. The analysis layer will analyze the data information in the database through big data analysis algorithm and then transfer it to the realization layer. The presentation layer will make the initial data information present a diversified state and present it to people in an intuitive way. Finally, colleges and universities can carry out innovative and entrepreneurial activities through the finally presented diversified data information. Moreover, the above diversified information can also provide different data information according to the different needs of users. Therefore, when different students participate in innovation and entrepreneurship activities, this structure can provide targeted innovation and entrepreneurship activities for the students, and can also plan their future career development direction and study their characteristics and advantages. The design and use of this platform structure promotes the rapid development of innovation and entrepreneurship activities in colleges and universities.
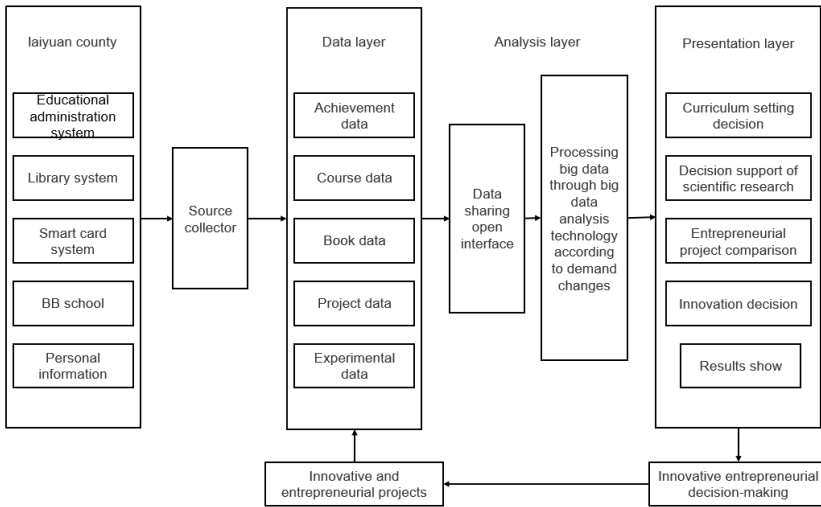
Fig. 2. Complete Structure of University Innovation and Entrepreneurship Information Sharing Platform Based on Big Data Analysis

3.3   Platform software design

In the process of building the information sharing platform of innovation and entrepreneurship in colleges and universities based on big data analysis, the principle of naive Bayes algorithm is mainly applied. It is a kind of statistical classification algorithm, and it mainly uses probability statistical algorithm to analyze and process data information. An important probability formula used in this formula is as follows:

$$P(B|A) = \frac{P(A|B)P(B)}{P(A)}$$

The application of this calculation method in university innovation and entrepreneurship information sharing platform is mainly reflected in the following process: the attribute combination of big data distribution is a combination, and a is a characteristic attribute of x. Then the logical unit of university innovation and entrepreneurship information sharing big data can be set as: x={A1, A2…An}, where A1 and A2 are the corresponding university innovation and entrepreneurship data information keywords in the database. By searching for keywords, students can quickly lock the target data they want to lock. The formula F= [(C+C1/h)/size] * (C2) C2 can be used to study the relationship between relationship mapping and rule vector. This algorithm can make the information sharing of innovation and entrepreneurship in colleges and universities more authentic, safe and sustainable. In addition, when using big data algorithms, we should pay attention to the fact that the information content of innovation and entrepreneurship platform in colleges and universities should not be too jumbled and large, mainly focusing on the theme of innovation and entrepreneurship, so as to improve the speed of big data analysis and promote the research and development of information

sharing platform for innovation and entrepreneurship in colleges and universities. Finally, in order to improve the generalization ability of big data analysis algorithm, through big data mining, the adaptive scheduling and access of university innovation and entrepreneurship information is realized, and finally the objective function is J1(h,ez) = φ (x)h /2 + 1/ 2 UzD∑ez2(z=1, z=2, z=3……). In this formula, φ (x) represents the kernel space mapping function of university innovation and entrepreneurship information big data, and h represents the combination weight vector of university innovation and entrepreneurship information.

4   Demonstrate the advantages of big data analysis technology in the construction of information sharing platform for innovation and entrepreneurship in universities.

In order to verify the advantages of big data analysis technology in information sharing platform, we can discuss the information sharing platform developed by a university in Liaoning province in detail. According to the survey and related data, the university has not only strengthened the cultivation of college students' innovation and entrepreneurship ability, but also promoted the integration of innovation and entrepreneurship education into the whole process of talent training system after using big data analysis technology in the construction of innovation and entrepreneurship information sharing platform. Through the intelligent processing level of big data technology, the data information can be shared in the process of innovation and entrepreneurship in colleges and universities, and the security and authenticity of shared data information can also be ensured. The information sharing platform in colleges and universities includes consultation and notification, data download, system management, student personal center and other modules. The platform can analyze and investigate the data information stored in resource management, and then draw relevant conclusions and transmit them to the user interface. It can also improve the operability of users and promote the rapid development of the information sharing platform for innovation and entrepreneurship in colleges and universities under the big data analysis. In addition, Hadoop technology is adopted in the construction of this platform, which is an open-source large-scale data processing platform and tool, and is mainly responsible for the distributed storage and management of data. Moreover, Hadoop adopts HDFS file system sub-framework to realize storage capacity, thus improving work efficiency, data adhesion and sustainable development. Therefore, the application of big data analysis technology in the information sharing platform of innovation and entrepreneurship in colleges and universities has great advantages. In addition to the above, this paper also tests the processing performance of the platform data. First, a certain number of activities or project data about innovation and entrepreneurship should be collected from colleges and universities. These project activities should cover information data, log information, picture information, etc., and then users begin to transmit data information. In this process, we can regard the e power of 5 as the operating instructions of the shared platform. Then, the e power of 5 is used as the operation instruction to respond to the data information. The

result shows that the number of requests of the platform per unit time is directly proportional to the number of data processed in batches. From this experiment, it can be seen that the data information in the university information sharing platform can be better processed by the big data analysis technology, which breaks the problems of the traditional data information processing methods such as jumble and low efficiency. In order to ensure the correctness and feasibility of the information mining ability of innovation and entrepreneurship after applying the platform in colleges and universities, the following experiments were carried out. The training time and data collection time of the platform were set to 600s and 100s, respectively. The results of the data mined by the platform are shown in Figure 3, which shows that the information data of innovation and entrepreneurship in colleges and universities can be stably mined by this platform. This experiment also proves that this platform has good data mining performance.

a) Time-Range
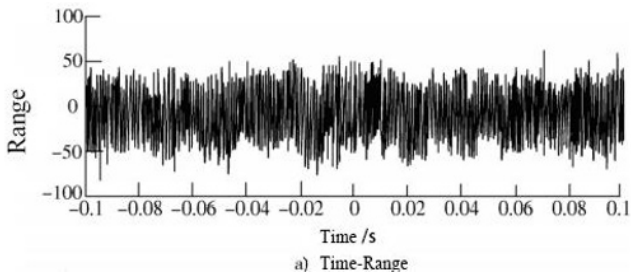
Fig. 3. Data mining results

5   Conclusion

The traditional information processing platform in colleges and universities has certain limitations, such as poor data adhesion, inability to ensure the security and sustainable development of data and information. The information sharing platform of innovation and entrepreneurship in colleges and universities, which is integrated with big data analysis technology, breaks the traditional way of information processing. Big data analysis technology collects data information and stores it in the database, and then uses statistical methods to simply process, analyze, summarize and classify the data. Finally, it is presented to people more intuitively in a visual form, which breaks the scarcity of traditional algorithms, improves the cohesiveness of data information, and promotes the rapid development of information sharing platform for innovation and entrepreneurship in colleges and universities.

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