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Accuracy analysis of university authority evaluation based on Chinese university data + neural algorithm

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Abstract: This paper is mainly based on the social evaluation data of the quality of higher education personnel training, and uses text sentiment analysis and text classification technology to conduct research on the data, so as to explore the attitudes and suggestions of the network society towards the quality of higher education personnel training, and to dig deeper Provide relevant universities and relevant departments with public opinion monitoring and decision-making support on improving the quality of personnel training. This has important research value and significance for the improvement of the quality of higher education personnel training and the study of high-performance text analysis methods.

1. Introduction

With the gradual acceleration of my country's internationalization process, the market demand for talents in various industries continues to increase. The "National Standards for Undergraduate Talent Training Quality" formulated in 2018 pointed out that the quality of talent training should be set as the most important and core part of the quality of higher education [1]. At present, in order to improve the efficiency of running schools and the quality of teaching, major colleges and universities are carrying out educational reforms, so as to provide effective prerequisites for personnel training. Therefore, the training of higher education personnel quality has become a key link in teaching quality management [2]. How to effectively address the quality of personnel training in higher education and formulate an effective management plan has become a problem to be solved by major universities [3].

"Data-driven schools, analysis and transformation of education" has become the main goal of education reform and development in the era of big data. Colleges and universities fully and timely grasp the information in the field of education, deeply excavate the potential value of educational data, and vigorously develop Educational Data Mining (EDM) has become an inevitable way to reform education and improve the quality of higher education personnel training [4]. Big data can realize the collection, processing and analysis of a large amount of high - quality educational data, so as to provide decision support for teaching work. The text analysis technology based on big data and deep learning is a hot field of academic research, and is widely used in semantic understanding,

machine translation, question answering system, information retrieval and other fields [5].

To sum up, this paper is mainly based on the social evaluation data of the quality of higher education personnel training, and uses text sentiment analysis and text classification technology to conduct research on the data, so as to explore the attitudes and suggestions of the network society towards the quality of higher education personnel training, and to find out more. In-depth information, provide public opinion monitoring and decision- making support for relevant universities and relevant departments on improving the quality of personnel training. This has important research value and significance for improving the quality of higher education personnel training and improving the performance of text analysis technology.

At present, there are few studies on evaluation data based on the quality of Internet higher education personnel training, and traditional text analysis methods are insufficient in dealing with data with domain characteristics [6]. This paper proposes a collection, processing and analysis method based on the quality evaluation data of higher education personnel training. The main research contents are: to study the multi-source data collection method based on the social evaluation of the quality of higher education personnel training, and to study the text sentiment intensity calculation method based on the improved sentiment dictionary and the text classification method based on the bidirectional recurrent attention neural network on this experimental data set, and finally design and complete the development of the prototype system.

2. Method

In text analysis, it is often necessary to use a large number of text data sets to complete the training of the algorithm, thereby improving the performance of the algorithm. Data sets come from many sources, such as standard database corpora that have been published, relevant information corpora provided by relevant departments, etc. for data sets that have not been collected and sorted, technical means need to be collected and sorted, so as to complete the processing and analysis of the data [7].

In this paper, the text analysis of the social evaluation data of higher education personnel training is carried out. Due to the lack of ready -made corpus, it is necessary to design a data collection plan to complete the data collection work, and then formulate a relevant indicator system to screen and process the data set.

A web page usually consists of two parts (head) and (body). The head is mainly a general description of the current web page resources, and the body part is the main content to be displayed on the current page. The HTML structure is generally represented by a DOM tree, and an example HTML file is shown below.

```
<html>
<head>
<title>Web page title</title>
</head>
<body>
<table>
< tr >
<p>Title 1</p>
</ tr >
< tr >
<p>Title 2</p>
</ tr >
</table>
```

</body> </html>

Extracting HTML web page content information is mainly by converting the tag structure of the web page into a DOM tree structure, and then parsing the HTML tag content by building a DOM tree. In order to solve the defects of semi -structured documents, Liu Jun et al. proposed to solve the problem by constructing the DOM tree structure of HTML files. In this paper, the standard data acquisition engine structure is adopted in the process of HTML webpage content extraction. The overall structure basically includes the following four parts: crawl queue, downloader, analyzer, database.

In this paper, based on the evaluation data of colleges and universities collected from multiple sources and the research of the Institute of Higher Education of Guangdong University of Technology for reference, this paper constructs a social evaluation index system for the quality of higher education personnel training. As shown in Table 1:

Table 1: Social evaluation index system of talent training quality.

First-Level Indicator	Secondary Indicators	Weights
Major and Curriculum Construction	Professional and curriculum construction planning	3%
	High-quality professional and curriculum construction	8%
	School-enterprise co-construction major	3%
Teacher Teaching Ability	Improvement of teachers'teaching ability	5%
Practical Teaching	Proportion of practical (training) teaching credits (hours)	5%
	of experimental (practice) teaching platform inside and outside the school	8%
	Innovation and Entrepreneurship Education	11%
Talent Training Mode Reform and Effect	credit system reform	3%
	School-enterprise collaborative education	11%
	Information construction and international, Hong Kong, Macao and Taiwan exchanges and cooperation	5%
	Teaching Achievement Award	5%
Quality assurance system construction and effectiveness	Teaching evaluation	8%
	Discipline and skill competition	5%
	Check-in rate	5%
	Postgraduate entrance examination rate	3%
	Graduation Design (Thesis) Topics	5%
Degree Granting Quality	Bachelor's Degree Awarded Work Quality	8%

After completing the construction of the social evaluation index system of higher education personnel training quality, on this basis, further construct the relevant index dictionary of each type of index [8]. The words in each index dictionary must have characteristics that can represent this category of indicators. In the process of constructing the index dictionary, this paper uses the word2vec model that can detect similar words, and uses Wikipedia data and many articles in the word training set.

When screening the experimental data set, firstly on the basis of the preprocessed word segmentation text set, combined with the index dictionary of each type of indicators, dictionary matching is carried out according to the principle of maximum matching, that is, each text is

matched with each type of indicator dictionary. If the number of keywords in a certain index dictionary is the largest, the text is initially classified as the corresponding index. If the keywords are not matched, the text is discarded and the next text is re - screened. Secondly, on the basis of preliminary screening, supplemented by manual understanding of the meaning of the subject, and detect whether it belongs to the current corresponding index category, if it meets the requirements, it will be used as the final experimental data set, if not, the index category will be modified or give up.

3. Experimental Results

3.1. Major and Curriculum Construction

Under the secondary indicator of "professional and curriculum construction planning", the sentiment analysis on the keyword "course" is the most comprehensive among the 48 colleges and universities. The number of records is compared, that is, "(number of positive emotions - number of negative emotions) * number of posts ". From the overall situation, the positive and negative emotions of the curriculum construction planning in colleges and universities are almost half, reflecting that the users of social platforms are satisfied with the college curriculum. Degrees vary. Beijing Normal University Zhuhai Branch has the highest level of satisfaction (180), followed by Zhuhai College of Jilin University (150), Guangzhou Institute of Physical Education (96), Guangdong University of Foreign Studies (91), South China University of Technology Guangzhou College (80); negative emotions The strongest are Guangdong Institute of Petrochemical Technology (-140), Guangdong Institute of Technology (-112), and Southern College of Sun Yat - sen University (-95).

3.2. Teachers' Teaching Ability

Tieba users under the indicator of "teaching" are also generally positive . There are 23 schools with more positive emotions than negative emotions, namely: Guangdong Technical Teachers College (273), Guangzhou Medical University (147), Guangdong Baiyun College (144); 15 schools have more negative emotions than positive emotions, namely: Guangzhou Business School (-84), Guangdong University of Foreign Studies Nanguo Business School (-77), Guangdong University of Foreign Studies (-77) Medical University (-48).

3.3. Practical Teaching

Regarding the negative evaluation of school teaching management, the emotions of users on social platforms are still neutral. The number of text sentences is small and not statistically significant. Practical and innovative courses are closely related to students' students, so get a lot of text sentences. Under the keyword "practice", there are 20 schools with more positive emotions and 23 schools with more negative emotions; under the keyword "innovation", 23 schools have more positive emotions, but only 15 schools have most negative emotions.

3.4. Reform and Effect of Talent Training Model

"Credits" and "Outcomes" are the most concerned aspects of students and are closely related to their interests. The sentiment texts under the keyword "credits" have 20 positive schools and 23 negative ones, which are basically the same; the sentiment texts under the "achievement" keyword have 23 positive and 15 negative ones, with the majority of positive sentiments.

3.5. Reform and Effect of Talent Training Model

Among the first-level indicators of "Quality Assurance System Construction and Effectiveness", only the number of texts obtained by the keywords "Registration" and "Postgraduate entrance examination" meets statistical significance. Due to time and resource constraints, other keywords are not scientifically set, and only Zero adjustments can be made in subsequent studies. There are 18 schools with positive emotional texts under the keyword "Registration", and only 15 schools with negative sentiments, but the overall results are negative, indicating that students are dissatisfied with the school's regulations when facing problems related to registration and graduation. There are as many as 40 schools with positive emotional texts under the keyword "postgraduate entrance examination", and only 5 schools with negative emotional texts, indicating that students are more emotionally positive in the face of problems related to their own future.

3.6. Quality of Degree Awarding

We only set up one keyword in "degree awarding quality". There are 15 schools as evidenced by the emotional text under the keyword "degree", and 28 schools with mostly negative emotions, indicating that most students have a policy on the school's degree regulations. Dissatisfied, this is the highest level of dissatisfaction among the indicators set in this study. It is speculated that there is still much room for improvement in the degree management work of many colleges and universities.

Generally speaking, the positive emotions of text sentences in general medical colleges are greater than the negative emotions. It is speculated that the academic management of medical colleges is stricter than that of ordinary colleges, and some publicity and supervision work is well implemented. The negative emotions in the text sentences of Guangdong Peizheng College are very large. After a random inspection, it was found that most of them were caused by the sale of advertisements, which did not have statistical significance.

4. Discussion and Reflection on Experimental Results

The greatest significance of this survey and research is that it is different from the interference of previous surveys and investigations on the researcher. The data obtained in this research are all from the objective opinions of the society on the Internet on the provincial universities in Guangdong Province, but the research methods and means. It is domestic research to apply big data text mining and neural network algorithm analysis in the field of higher education. The problems are as follows:

①There are insufficient sources of data acquisition sources. Currently, text information is obtained from four platforms for analysis according to the plan. However, due to the requirements of data volume and the quality of text, most of the texts used for analysis come from Baidu Tieba, which leads to the main body of the text's emotion is college students, there is a certain deviation, and it does not represent the overall opinion of the social group.

②The quality of text data cleaning is not high, resulting in a large number of advertisements in the text, which is mainly due to the lack of time for this research and limited manpower. In the follow -up work, new advertising cleaning algorithms will be developed, using software to solve.

③The keyword setting is unreasonable. The keywords used in this study are to filter out textual information related to evaluation indicators. However, due to the management rules on the Internet platform, some posts with meanings will be deleted by the administrator. The content corresponding to some keywords in this setting cannot be crawled by the starting crawler.

5. Conclusion

This paper studies a data collection for the evaluation of talent training quality in colleges and universities, introduces the calculation method of text emotion intensity based on the improved sentiment dictionary and the text classification method based on the two-way cyclic attention neural network, draws on the research results of universities in Guangdong, constructs a social evaluation index system for the quality of talent training in higher education, and conducts experiments on each index in some universities. Finally, the experimental results are discussed and considered. This study can provide some reference for evaluating the quality of talent training in colleges and universities.

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