Research and Application of Personalized Intelligent Recommendation Algorithm for Computer Network Search Engine

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Abstract. Science and computers technology have been widely used, it promotes the networked dissemination of information and knowledge. In order to facilitate people to find the information they need in the massive network information, computer search engines came into being. With the continuous improvement of technological level and the wide application of intelligent technology, the search engines has gradually become a development direction of computer search engines, which is also conducive to improving the quality of information search in the context of the Internet.

Keywords: Computer Technology, Search Engine, Features, Intelligence

1. Introduction

In the information age, the amount of information has increased significantly, and the way of information dissemination has gradually shown a trend of network development. Computer search engine is an information retrieval system under the network background, it mainly used to retrieve specific information from the massive network information. In the Internet era, information are classified into different types according to different keywords. Users only need to enter specific keywords in the computer search engine, and then search out the information resources related to the keywords in the huge database, and then find the information they need. Based on the generation and wide application of computer search engines, it has laid a foundation for people to deal with information, which is conducive to improving the efficiency of information retrieval [1].

2. Research significance
With the development of Internet information technology, information has become the carrier of knowledge. From the beginning, it is difficult for people to obtain information, and now it is difficult to find information. How to better obtain information has become the next problem in the Internet era.

Figure 1 shows the traditional Internet information system. The application server acts as a container for carrying information. It continuously obtains the knowledge in the database and displays it to the user in a graphical interface. This information processing method has a small amount of information [2]. The system can basically meet the needs of users, and can help users locate key information relatively quickly through simple search or reference functions. However, Internet information systems with large amounts of information, or even massive amounts of information, are almost ineffective.

![Figure 1. Traditional internet information system](image)

As shown in Figure 2, the intelligent Internet information system is a modern and reasonable server design model. On the basis of a pure application server and basic data server, a knowledge database server and a data mining engine that can provide intelligent analysis are added. The data will not be pure Listed for users to consult. Through the analysis of users and information, the information can be filtered and irrelevant junk data can be filtered out for users. This saves users a lot of unnecessary reading and searching time, and the way users obtain information will become Faster and more accurate [3].
3. Design principles of computer search engines

The essential role of search engines is information retrieval. For the initial design of the search engine, it is mainly used by the enterprise to search the internal database in order to quickly obtain the relevant information of the enterprise. With the continuous improvement of the level of technology and the widespread use of the Internet, the scope of application of computer search engines has gradually expanded, and the definition of search engines has also changed accordingly. Nowadays, computer search engines mainly refer to software programs used to retrieve Internet information. According to different index forms, computer search engines can also be divided into various types such as comprehensive portal search and link evaluation search [4]. In essence, no matter what type of search engine it is, it needs to use the corresponding search interface to interact with users, and search the corresponding information database based on specific keywords, and provide timely feedback to users on the search results to encourage Users can find the information they need in the retrieved information resources, so as to meet the user's demand for information resources. A search engine consists of four parts: searcher, indexer, searcher and user interface, as shown in Figure 3.
For the application of computer search engines, it is generally established on the basis of an index database. By using the search engine to search the corresponding index database, the rapid retrieval of network information is realized. For now, computer search engines search for information by means of spiders traversing the network, that is, using SPIDER spider robots to collect all open network information, thereby laying the foundation for the application of computer search engines[5]. That is to say, SPIDER spider robot traverses all open information resources on the Internet through hypertext connection based on arbitrary URL lists, and collects related information resources such as URLs on the Internet in a first-in-last-out or first-in-first-out manner to achieve Integration of massive amounts of network information.

4. Intelligent features of computer search engines

With the emergence and wide application of the Internet, the amount of networked information is increasing, which also makes it more difficult for users to search for network information, prompting users to put forward higher requirements on computer search engines. Based on the practical application of intelligent technology, intelligent search methods have gradually become the main development direction of computer search engines in the Internet era. At present, when a user uses a computer search engine, he needs to provide one or more keywords first, and then the search engine searches the index database according to the keywords, so as to retrieve the required information from the massive network information. This kind of search engine has certain limitations, and the search rate needs to be improved. Based on the rapid development of artificial intelligence, the computer search engine and artificial intelligence technology are combined to design an intelligent search engine to ensure that the quality and efficiency of information retrieval can be effectively improved. Compared with traditional computer search engines, intelligent search engines have higher retrieval accuracy, are proficient in human language, have human-computer interaction functions, and provide convenience for users to retrieve information. From the characteristic analysis, the intelligent search engine has the following characteristics: intelligent attribute, active attribute, interactive attribute [6,7].

5. Chemical technical analysis

According to the different functions, the intelligent technology involved in the intelligent search engine mainly includes two kinds, namely machine translation technology and semantic understanding technology, which are also the core technology of computer search engine to realize intelligence. Based on the application of intelligent computer search engine, through the use of machine translation technology, natural language can be quickly and accurately converted into computer language, thus laying the foundation for information retrieval. The application of semantic understanding technology enables intelligent search engines to have the ability to accurately understand the semantics of users' language, which is conducive to improving the accuracy of information indexing.

Natural language processing and understanding technology is the core technology for computer search engines to realize intelligence, including natural language processing technology (NLP) and natural language understanding technology (NLU). From the perspective of language processing, computers mainly process natural language from two levels. One processing method is to treat natural language as a certain symbol, and the other is based on the understanding of language semantics [8]. Natural language processing technology covers the above two levels of natural language processing,
while natural language understanding technology mainly reflects the processing level of understanding language semantics.

The natural language processing technologies involved in intelligent computer search engines mainly include the following: one is word segmentation and part-of-speech tagging; the other is syntax and semantic analysis; the third is concept tagging and analysis; the fourth is semantic knowledge representation; the fifth is Dictionary and knowledge base. At the same time, according to the different processing content, intelligent computer search engines will apply a variety of natural language understanding technologies such as word segmentation technology and phrase recognition technology. From the perspective of modern Chinese, for the same sentence, the semantics of punctuation marks at different positions will be very different [9]. In order to ensure that search engines can more accurately understand the semantics of Chinese words provided by users, intelligent computer search engines can be designed in combination with Chinese word segmentation technology to achieve accurate grasp of user language semantics in order to quickly and accurately retrieve users Required information. For example, according to the frequency with which users use search engines to retrieve Chinese words, through the application of the maximum matching method, detailed analysis and understanding of Chinese words with high search frequency, according to which the semantics of Chinese words can be accurately grasped, and ambiguity can be eliminated to ensure Chinese word segmentation Can be more accurate. Phrase recognition technology is mainly a supplement to Chinese word segmentation technology. The use of computer search engines to retrieve information often involves multiple keywords. In order to ensure the accuracy of information retrieval results, phrase recognition technology can be used to accurately identify the semantics of the keywords used for search, and to correctly understand the meaning of the words accordingly, so as to ensure that users' information search needs can be timely and accurately met [10].

6. Conclusion

Making search engines more intelligent is the main developmental direction of computer search engines in the current era. That is, through the intelligent design of search engines to have human-computer interaction functions, this has made the development of computer search engines take an important step. I believe that with the development of computer technology, the prospects of search engines will be even broader in our country.

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