Research on the Construction Method of Knowledge Base of Automatic Question Answering System for Labor Law

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Abstract: At present, with the rapid development of China's economy, labor relations in society are becoming more and more tense. Therefore, it is urgent and necessary to develop an automatic question and answer system for labor law to solve problems in legislation, law enforcement, justice, rights protection, etc., and the construction of labor law knowledge base is the core system of the automatic question and answer system of labor law. With the development and training of large AI models, the automatic question answering system is becoming more and more mature, and this paper will use FastGPT to build a local knowledge base and build a knowledge base of the automatic question answering system for labor law.

Keywords: labor law, automatic Q&A, knowledge base

1. Analysis of the necessity of developing a knowledge base of automatic Q&A system for labor law

The labor law knowledge base is the core system of the labor law automatic question and answer system, and the construction of a scientific labor law knowledge base will achieve sufficient technical reserves for the development of the labor law automatic question and answer system.

1.1 Requirements for the reform of the political system

If we develop a set of automatic questions and answers on labor law based on the labor law knowledge base to make the protection of labor law rights and interests cheap, open and transparent, it is of great significance to promote China's judicial fairness, prevent and control judicial corruption, and promote the construction of the rule of law.

1.2 The principle of efficiency of financial funds is required

As a legislature (legislature of the National People's Congress, the Supreme People's Court, the Supreme People's Procuratorate), judicial organs (courts), and law enforcement agencies (governments at all levels), the use of the labor law automatic question and answer system is of great significance for improving work efficiency and improving the efficiency of the use of financial funds.

1.3 Requirements for the protection of workers' rights and interests

In practice, workers lack professional knowledge of whether their rights and interests have been infringed, because the vast majority of workers do not have professional knowledge of labor law and are not clear about whether their rights and interests have been infringed. Even if you are violated, it can be expensive to get legal advice from a law firm.

1.4 Requirements for business owners, human resources managers, and law firms

In practice, there is a phenomenon of abusive litigation in labor arbitration. The Law on Mediation and Arbitration of Labor Disputes stipulates that there is no fee for arbitration of labor disputes, and the funds of the labor dispute arbitration commission shall be guaranteed by the treasury. This provision aims to reduce the cost of protecting employees' rights, but in this way, there is no threshold, no risk or restriction for employees to apply for arbitration, so that many cases enter the arbitration procedure. As an enterprise manager, in order to respond to the lawsuit, you have to pay a lot of manpower, time and money costs, and at the same time, as an enterprise manager, you must know the labor law and operate the enterprise in accordance with the law. Law firms provide labor law services to the parties, and they need to inquire about the legal provisions, conduct logical reasoning, and anticipate the results of the adjudication. All of the above situations require an automatic Q&A system for labor law with search and adjudication functions.

1.5 Requirements for teaching and scientific research in institutions of higher learning and scientific research institutes

At present, it is of great theoretical and practical significance to the research on the knowledge base of the automatic question and answer system of labor law, which fills the gap of theoretical research and practical application research in this field, and the knowledge base of the automatic question and answer system of labor law is an important foundation for the construction of the automatic question and answer system of labor law.[1] The knowledge base can be used to complete the labor law automatic question and answer software system, which can provide a labor law big data platform for the law enforcement of governments at all levels, judicial interpretations carried out by the Supreme People's Court and the Supreme People's Procuratorate, legislation of the Legislative Committee of the National People's Congress, legal services provided by law firms across the country, and legal advice required by all parties involved in labor law cases, and relevant legislative, law enforcement, judicial and law-defending activities can be carried out based on the intelligent legal rulings made by the platform.

2. FastGPT deployment

FastGPT is currently the best project for Prompt concatenation, and then we need to log in to the Docker official website to install the Docker application, and then configure the file to create a folder config.json, and then create a docker-compose.yml file, modify the CHAT_API_KEY in the docker-compose.yml to My OpenAI Key, and then start executing the command to start the local knowledge base, Once the execution is complete, you can access your personal knowledge base on your browser via the http://localhost:3000/ URL.[2]

3. Build a knowledge base

Based on the above operations, you have successfully accessed the personal knowledge base page, and then create and import personal data for access. The login username is **, and the password is the DEFAULT_ROOT_PSW set in the ** environment variable.[2]

3.1 Create a knowledge base

Create a new knowledge base, where the labor law provisions are imported, and the labor law provisions are named.

Import labor laws into the knowledge base via files.

Once confirmed, the current data will be converted into vector data.

The full text is about 500 words, and it takes about 3~5 minutes to complete the import. Due to the problem of text limitations, the dataset was split into two datasets according to the fixed number of words.

At this point, the personal knowledge base has been built. Then try to do a Q&A, where 0.7792 is the vector similarity, and the higher the similarity, the higher the higher.

3.2 Use a knowledge base

Create an app to use the knowledge base.

Here is a simple opening line, select and bind the corresponding knowledge base.

Start a conversation, and the effect is shown below:

Acknowledgments

References

[1] Meng Fanyu. Problems and countermeasures for the protection of workers' rights and interests. Legal Studies, 2012, (8).

[2] Michael Retsky, Romano Demicheli, William Hrushesky, John Speer, Douglas Swartzendruber, Robert Wardwell. Recent translational research: computational studies of breast cancer[J]. Breast Cancer Research. 2005, 7(1): 37-40.

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