Project Idea Report of Assignment 1

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Github Repository URL:

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Overview

The name of this project is university information consulting robot. It provides a variety of user interfaces, for complex multithreading, concurrent connections, his chat interface can be implemented. The project provides a normal text-based user interface, allowing users to enter text content and voice content. It can remember the questions that users have asked, so that users have a better second use experience. Artificial algorithm is one of the core technologies. At the same time of user query, the system will automatically analyze, understand the user's needs, and give the most accurate answer. At the same time, the system will integrate the query data of multiple users to simulate the most common problems. The user interface supports any form of chat, which helps users express their ideas more accurately.

Motivation

Nowadays, many universities have their own online websites and have a comprehensive online student service. RMIT has done a good job in this regard. But in China, more schools don't value online services. This leads to students having to ask a lot of people's advice when they deal with the affairs about their studies. This is very inefficient. In 2019, a poll by China University information network showed that 87 percent of Chinese college students did not like the school handling system, 62 percent of which even reached the level of hatred. Voters also have a straightforward reason to choose, and they don't want to spend 200 percent of their energy on a 20 percent job. Therefore, it is very necessary for a college information consulting robot. It can greatly shorten the time students take to go through the formalities. Just move your fingers in the dormitory to type, and you can understand what to do next.

Description

The system consists of five main parts. User login interface, robot consultation chat interface, voice recognition, history chat recording function and FAQ ranking.

The user must register an account and log in to the system before entering the query interface. The first login users can register their own account under the guidance of the page prompt. The account needs to be bound with at least one kind of information, such as mobile phone number or email. After successful registration, jump to the login interface again, and the user can ask questions after completing the login operation. Users can enter any form of text in the chat interface, which is also mentioned above. Here, we add a special context management module to the robot to record the context. This function can make the dialogue more efficient and concise. The project will add basic chat thesaurus to the robot. At the same time, we will summarize the problems that students may face in advance, and set up detailed solutions for each problem. For example, for the application of changing majors, the chat robot will first give the conditions to apply for changing majors. Secondly, it clearly points out which materials are needed, which departments need to pass the seal permission, and will indicate the contact information of the responsible personnel of each department and the sample of the required materials at the end of the answer. Let users feel like they are reading the

school manual. Users can ask questions by voice when chatting, and the robot will automatically recognize the voice and capture keywords, and give accurate solutions to the problems. After each chat, the system will automatically save the chat record, and save it in the special database to save the history. Users can click the history button in the interface to browse the content they have asked. Finally, we will also place a FAQ ranking in the chat interface, and give the most common questions by analyzing the chat data of each user.

Tools and Technologies

Need to learn Node.js And Java, in the front-end development with these two tools, increase the development content of BOT. In addition, Microsoft has developed a robot framework called BOT framework. Through BOT framework and its cognitive service API, the project can create multi platform products in a relatively simple way. We need MBF technology to create a Skype bot. At the same time, if problems are found, we need to know how to deal with them. Use ngrok to test BOT in Skype and MBF Architecture Simulator. The chat robot of this project is customer service in essence, and the work of customer service is basically monotonous. We need to create a natural language processing model and use LUIS(language understanding intelligent service) to replace human.

Skills Required

Machine learning and deep learning:

This is the most basic technology to master. For example, the classification algorithm can be used to classify users' intention, the language model can be used to filter whether the sentences after speech recognition are smooth, and the clustering algorithm can be used to analyze users' query habits. As users use more and more data, what can give play to deep learning is to further improve the basic technical ability of chat robot.

Database technology:

Through database technology, the robot can quickly retrieve similar sentences in the large-scale corpus stored in advance, and can also store and further analyze the interactive data of many users. Moreover, database technology is essential for the historical record function of the project.

Acoustic technology:

Including speech recognition, speech synthesis, etc., provides more expressive force for chat robots. Acoustic technology is also associated with chips and hardware.

Outcome

If the project is successful, the first thing to do is to promote it in Chinese universities and cooperate with the school officials. Once the project is implemented, all college students can enjoy the convenience of the project. It improves the efficiency of students to go through all kinds of procedures in the school. Compared with the previous need to aimlessly walk in each school teaching building, the project can let students experience the school online service project efforts. On the other hand, it can help students

concentrate on their study and not have to spend energy on other unnecessary things.

Reference List

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