

Research on the Application of Artificial Intelligence in Machine Translation

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Abstract: Under the influence of the development of big data and cloud computing technology, machine translation based on artificial intelligence has gradually entered people's lives. Compared with manual translation, machine translation is inexpensive, convenient and practical, and can translate text anytime, anywhere , And can meet the translation needs of more than a hundred languages, but machine translation is not culturally sensitive, and cannot connect text and language mood. In this regard, in-depth analysis of the similarities and differences between human translation and machine translation, and research on the development strategy of the translation industry at this stage based on the future of human translation, and ultimately promote the synchronization of human translation and machine translation while continuously improving the translation level of translators development.

1. Introduction

In recent years, there have been more and more discussions about machine translation in the translation field, especially with the increasing development of international communication, machine translation technology developed with artificial intelligence technology as the core has become an important means for people to participate in international communication. However, from the practical application of machine translation, it is not difficult to see that machine translation has obvious shortcomings, that is, it has not yet formed a natural language system similar to humans, and it cannot achieve accurate translation for specific language situations, nor can it clearly identify slang, puns, etc. Characteristic languages such as idioms. On this basis, manual translation is still the most important development direction of the translation industry, and how to make full use of the high efficiency and diversification characteristics of machine translation, and promote the further development of the translation industry on the basis of achieving the unity of translation speed and quality , Is the current research focus in the field of translation.

2. Analysis of the Similarities and Differences between Human Translation and Machine Translation

2.1 Manual Translation

For manual translation, it mainly relies on the translator's knowledge reserve and language accumulation. However, due to the single translation tool and the limitation of the translator's knowledge reserve, the translation efficiency of manual translation is relatively low. However, unlike machine translation, human translation is more flexible, that is, it can give different translation results for different language situations, which is largely determined by the translator's cultural thinking. Among them, the famous Chinese translator Lin Yutang pointed out that translation is the second creation, and language is alive and dynamic, which means that the translator's mental state and knowledge reserves will become the direct determinants of translation behavior.

2.2 Machine Translation

Under the guidance of the development of computer technology, machine translation has gradually entered people's field of vision. In 1954, Georgetown University and IBM in the United States jointly experimented with a computer machine translation system for the first time, successfully translating Russian materials into English, which marked the official role of machine translation. A means of translation into people's lives. After that, although machine translation has only a history of more than 60 years, it has not only developed rapidly, but also has shown a broader development prospect thanks to the popularization of cloud computing technology and big data technology. For example, various voice translators on the current market are more popular and can achieve accurate translation for a specific language anytime and anywhere. Users do not need to rely too much on professional translators, and translation costs are greatly reduced. However, it should be noted that, because machine translation relies on artificial intelligence technology, machine translation has a strong dependence on translation rules, that is, it needs to be based on grammatical and semantic theories to obtain translation results. Therefore, compared with manual translation, machine translation generally has the following defects:

First of all, at present, it is undeniable that machine translation has developed to a sufficient level, but the defect that machine translation does not have cultural sensitivity is still very obvious. Among them, different nationalities have different cultures, and different cultures The long-term development has left a rich cultural heritage, but any translation algorithm lacks the understanding of complex cultural languages such as puns and idioms, so it is easy to have the problem that the translation results do not conform to cultural values; secondly, in different language situations Under the circumstances, the meanings of the same words are often different, and the machine cannot really connect the words and the context, which makes the translation result lack of accuracy. Finally, the machine's ability to recognize sentence structure is relatively poor, that is, when the sentence structure When it is relatively complicated, the machine often can only achieve translation through mechanical information transformation, and the translation result is not humane enough.

3. The Future of Human Translation in the Context of the Development of Machine Translation

By comparing manual translation and machine translation, it is not difficult to find that machine translation relies on specific translation rules and a certain corpus. That is, the quality of machine translation depends on the rules and vocabulary input by humans. On this basis, machine translation has the greatest value. It has realized the popularization and diversification of translation behavior, and reduced people's dependence on translators. However, for the translation needs of specific occasions, especially important occasions, manual translation still has the incomparable advantage of machine translation, that is, sufficient context accuracy, and how to effectively combine manual

translation and machine translation, from both efficiency and quality Improving the level of translation is the future of human translation and machine translation.

3.1 Computer-Aided Human Translation

At present, human translation and machine translation have their own advantages, but the two do not exist as mutually opposed individuals. On the contrary, in the actual translation process, the clever combination of manual translation and machine translation can often get twice the result with half the effort. Translation effect. Among them, translators should continue to learn new translation technologies, and strengthen the rational use of computer translation software in the process of innovating translation concepts, so as to achieve the purpose of improving translation efficiency. For example, when translating texts that do not involve language contexts such as specific nouns, machine translation can be used as much as possible to replace manual translation. On the one hand, it can reduce the work pressure of translators, and on the other hand, it can also take advantage of the technical advantages of machine translation.

3.2 Develop Experience-Based Machine Translation System

In the long-term manual translation process, different translators often sum up different translation experiences. Unlike the translation rules that machine translation focuses on, individual translation experience is more dependent on the individual's cultural accumulation, so if it can be based on individual translation experience The design of a machine translation system is bound to produce more accurate machine translation results. On this basis, translation software should be designed in accordance with the translation habits of different translators, and diversified translation software should be developed by meeting the technical needs of different translators, and finally realize the effective support of machine translation for manual translation.

4. Conclusion

To sum up, starting from the advantages and disadvantages of machine translation and human translation, we have thoroughly explored the effective path of collaborative development of human translation and machine translation under the background of artificial intelligence. Among them, the combination of human translation and machine translation will be the mainstream development direction in the future translation field. Therefore, the relationship between human translation and machine translation should be viewed dialectically, and the efficiency advantages of machine translation technology should be continuously innovated to promote the entire translation industry. Innovation and development.

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