Design of Intelligent Recognition English Translation Model Based on Phrase Translation Combination

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Keywords: Phrase translation combination, Intelligent identification, Smartphone

Abstract: In order to improve the intelligent level of English translation software and the accuracy of English machine translation, the optimization design of English automatic translation system is carried out, and the design method of intelligent English automatic translation system based on phrase translation combination is proposed. The system design includes machine translation algorithm design and software design. The semantic feature analysis and phrase translation combination are used to optimize the English automatic translation algorithm, load the program of the translation algorithm, and design the software of the English automatic translation system in the embedded environment. The software includes vocabulary acquisition module, information processing module, vocabulary scheduling module and automatic control module. The automatic design of translation system is realized by using the method of cross compilation and multi-threaded phrase translation loading. The system test shows that this method has high accuracy and intelligence.

1. Introduction

Translation can be regarded as the result of code conversion from one language into another. Thanks to its convenience, easy access and relatively low cost, English machine translation is becoming a more and more popular translation tool these days [1]. At present, the application value of intelligent recognition technology in different fields is increasing. The English machine translation model based on modern intelligent recognition technology can improve the efficiency and accuracy of English machine translation and realize barrier free communication [2]. The traditional English machine translation method based on syntactic analysis can not solve the problem of partial structural ambiguity in the massive English language in intelligent recognition technology, and there is a problem of low accuracy of machine translation [3]. With the development of computer information processing technology, computer integrated information processing method is used to design machine translation system to improve the accuracy and intelligence of English translation [4]. English automatic translation system is a software system to realize English machine translation [5]. The automatic translation system uses semantic analysis method to analyze the characteristics of English vocabulary, combined with semantic fuzzy matching and phrase automatic analysis method to carry out large-scale automatic translation of English sentences and vocabulary [6]. The phrase translation combination method is adopted to realize the accurate translation of English [7].

Study the optimization design method of English automatic translation system to improve the intelligence of English translation, thus reducing the labor of manual translation and improving the efficiency and accuracy of English translation [8]. The design of intelligent English automatic translation system is based on the design of English semantic ontology model [9]. Combinatorial analysis of phrases and translations based on English semantic comprehensive features is carried out to obtain English semantic information, and ontology integration method is adopted to improve the intelligence and fuzzy registration ability of English translation [10]. English automatic translation system makes a detailed analysis of English vocabulary features by means of semantic analysis, and combines semantic fuzzy matching and phrase automatic analysis methods to carry

  DOI: 10.25236/iiiece.2022.006

out large-scale automatic translation of sentences and words, so as to ensure the accuracy and reliability of translation by means of phrase translation combination. A good translation system should make a proper description of the source language and the target language respectively, and this description should be independent of each other. The process of machine translation is transformed into analyzing natural language sentences according to the rules provided by some grammar theory, obtaining the internal representation of the syntax structure of this sentence, then generating the syntax structure of the translated sentence according to the grammar rules of the translated text, and finally obtaining the translated sentence composed of the target language words. Therefore, grammar theory plays a vital role in the process of translation. In view of this, this paper proposes a design method of intelligent English automatic translation system based on phrase translation combination. Firstly, the algorithm of the system is designed, then the software of the intelligent English automatic translation system is developed and designed, and finally, the system test is carried out, and the validity conclusion is drawn.

2. Analysis of Phrase Intelligent Recognition System

2.1 Construction of Phrase Corpus

The corpus plays an important role in the intelligent English translation model. The bilingual phrase data is stored in the corpus, which can accurately mark the part of speech of Chinese and English short words, standardize the function of each phrase, and greatly improve the accuracy and timeliness of the automatic phrase recognition algorithm in the recognition process. Generally speaking, the usual English-Chinese machine translation is to convert long sentences into multiple pairs of short words, use a scoring algorithm to evaluate the pros and cons of the translation context and corresponding translated word phrases, and increase the range of tags. The method can effectively improve the score. This is also the idea of some emerging algorithm innovations, which ultimately form the result of machine translation. Therefore, the overall effectiveness of the constructed phrase corpus plays a vital role in the machine translation algorithm. The part-of-speech recognition of phrase is a key core step in the intelligent recognition algorithm of machine translation, which can deal with the grammatical ambiguity of a large number of sentences, phrases, and words. By tagging the content in the phrase corpus, each sentence is divided into several words. For English sentences, each word exists independently. Chinese sentences need to be “word segmented”, and the processed words are formed after alignment processing. In the meantime, through the judgment of the context of the translated sentence, the part of speech of the word will be marked, and finally the dependency relationship of the phrase is analyzed through the syntax, and the syntax tree of the sentence is formed. Through this method, the timeliness and accuracy of machine translation are improved, and the processing capacity of the phrase corpus is significantly increased.

Data mining, also known as knowledge discovery in database, is an advanced processing process to extract credible, novel, effective and understandable patterns from a large number of data. Data mining is based on data warehouse in order to support business decision-making. Now, this method is very popular and has achieved considerable economic benefits. The key to the data warehouse and its data mining technology launched by major database companies in the world is its data mining tools. The data mining in the paper takes the corpus and its extracted text files as the data source to fully master the knowledge of source language linguistics and computational linguistics, so as to support us to build a machine translation system. The establishment method of data warehouse and the commercialization of data mining tools are worthy of reference. Before , many data mining tools are firstly developed for corpus. The mining tools used in this system mainly include word frequency statistics, determination and extraction of sentence fragment boundary, sentence pattern statistics, automatic generation of sentence template and automatic loading of head word examples.

2.2 Overall System Framework

The computer intelligent proofreading system is an English translation process. Based on the translation of English sentences, it replaces the wrong part of the existing translation results, and uses intelligent proofreading analysis to obtain the correct translation results to the greatest extent. The search module is mainly responsible for extracting and analyzing the lexical features in the sentences to be translated. By searching the lexical connotation and related information, it simulates the easy storage methods of the human brain, updates and optimizes the lexical features, so as to help obtain more accurate translation proofreading results. When receiving user input, the search module starts to process words and search word features. Based on the mapping thread resume, proofread the vocabulary to be translated, and obtain its meaning and related subject information to help extract vocabulary features. The mapping line is a one to multi-mode thread. The vocabulary related subject information to be proofread mainly includes all mapping points of the line, and the subjects similar to the subject related information will also cover local mapping points. In this way, it can ensure that the approximate answers appear in the search range at the same time, so as to avoid the error of search results caused by user expression errors. The overall structure of English automatic translation system is shown in Figure 1.

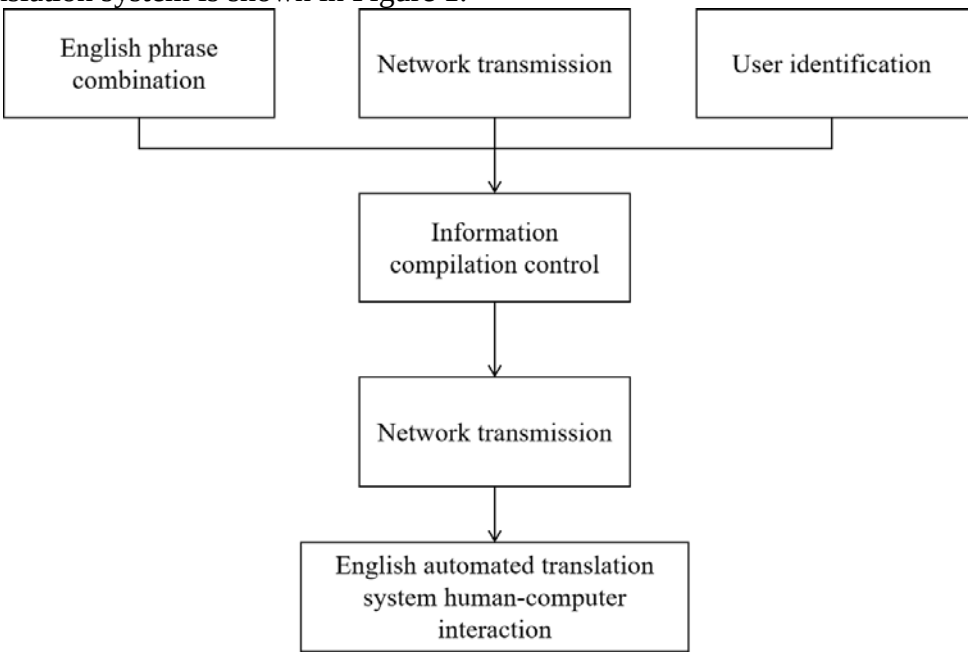

Fig.1 The Overall Structure of the English Automated Translation System

Behavior log is responsible for recording user's system behavior dynamics in detail, which is presented in data form. When the user proofreads twice, the behavior log will generate the user footprint record. If users proofread the same English translation results for many times, the system can intelligently add the scope of vocabulary translation and give more possible results, so as to ensure the proofreading performance of the system and improve the accuracy of computer intelligent proofreading. The work module is responsible for intelligent proofreading of English translation. When receiving the collation command, the work module receives the search link of the translation module, sorts the translation results based on the similarity based on the analysis of the vocabulary characteristics of the sentences to be collated, and selects the translation results that are highly consistent with the actual needs. The user module is responsible for providing users with translation results with relatively low ranking for reference.

3. Smartphone Assisted English Translation

3.1 Smart Phones and Translation Software

Smart phone is a new type of mobile phone integrating the call function of ordinary mobile phone and the related functions of personal computer. It has its own independent operating system. Users can install programs provided by third-party service providers such as relevant software, or

download and install some application software online to continuously expand the functions of mobile phone, and can realize wireless network access through mobile Internet. Smart phones basically cover all the functions of ordinary mobile phones: short message service, sending and receiving e-mail, Internet browsing, information management, multimedia playback and editing office software. At the same time, it also has all the features required to complete mobile learning: the device features required for mobile learning should be portable, that is, the mobile device is small and light and easy to carry; No linearity, that is, the mobile device does not need to be connected; Mobility, that is, users can use it well without space constraints. Moreover, because it has an open operating system and can process a variety of information, users can download and install a variety of application software to continuously improve the functions of mobile phones. The structure of English translation computer intelligent proofreading system is shown in Figure 2.

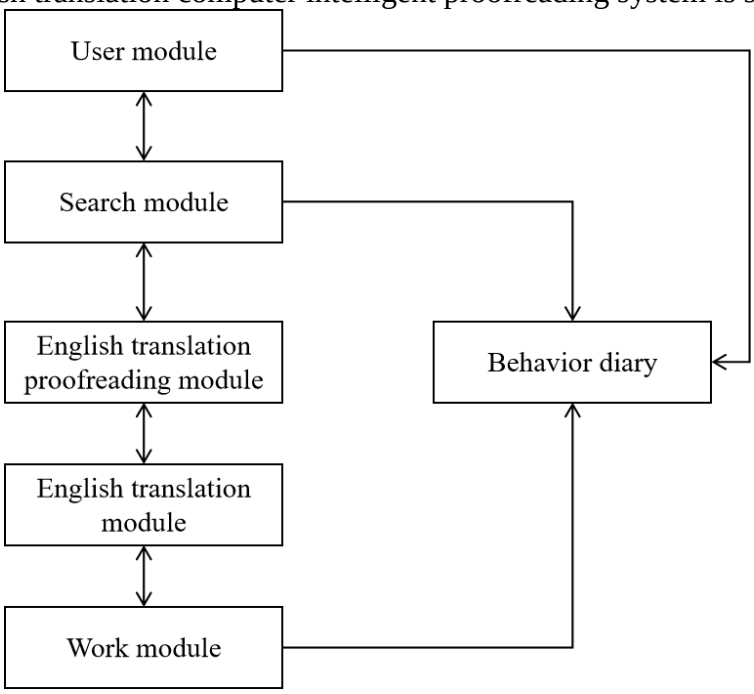

Fig.2 Structure Diagram of Computer Intelligent Proofreading System for English Translation

In the multilingual world, the importance of translation is self-evident. With the development of human communication activities, the number of translations is increasing, and the demand for translation will become more and more urgent. The demand for manual translation is rapidly growing. It is far from meeting the requirements of the society. In this case, many machine-based translation aids have been developed. Although it saves the time required for the translator to search for data, it can provide translators with translations for reference, it should be clearly realized that due to the asymmetry of mindsets and heterogeneity in cultures between Chinese and English, translation is by no means a simple code conversion from one language to another, and that online translation tools are only a translation assistance tool, which assists the translator in completing the work, and its role is limited. In order to make the software appear small and exquisite, most of its functions are premised on the Internet , such as the powerful network interpretation function. In the offline state, Youdao Dictionary only provides basic English-Chinese and Chinese-English translation. Therefore, some classic and non-popular entries are under-collected. It is not conducive to the cultivation of users' ability to guess words, use paper dictionaries, read phonetic symbols and spell words, etc These problems have not been solved well in Youdao Dictionary. There is no doubt that the products of technology, no matter how complicated, cannot match the creativity of the human brain. No matter how abundant network resources are, no matter how high the efficiency of converting language information is, it does not mean that its translation ability is higher than that of human beings. English-Chinese translation process is definitely a complicated one involving equivalent conversion of vocabulary, syntax, stylistic feature and more often than not, cross-cultural equivalence needs to be taken into consideration, which makes translation an even tougher task to

complete. However, the perfection and improvement of the system is far faster than the change of human society. Therefore, as an auxiliary tool, when online translation is used, it is necessary to add artificial modification parts to lubricate the rigidity of the translation, so as to make the translation more perfect and accurate.

3.2 Application of Online Translation Tools in English Translation

Learners can connect the Internet through the telecommunication gateway to access the relevant server by using wireless mobile terminals, and then make full use of network information resources to learn. Smart phone-assisted English translation is a kind of mobile learning based on browsing and connection. Learners who have a smart phone that supports wireless application protocol technology can connect to the Internet and visit and browse related online translation websites to achieve this kind of learning process.

Online translation tools mainly include three types: dictionaries, short text translations and web page translations. The essence of online translation is a kind of machine translation. Compared with online dictionaries, its main advantages are that it is convenient, fast and comprehensive, and it not only provides optional translation versions, but also provides the source and frequency of vocabulary, which is convenient for translators to choose a more satisfactory way of expression. When translating some relatively new words, online dictionaries are more helpful for translators, owing to the fact that online dictionaries can collect new words much faster than ordinary dictionaries. Many new words cannot be found in ordinary dictionaries or electronic dictionaries. Instead, most of the vocabulary can be found in online dictionaries. This advantage of the online dictionary is very helpful for translating certain text content closely related to the latest trends, and its translation is highly accurate and rich in reference resources. The ability to understand and translate greatly exceeds the language and culture itself, and thus extends to auxiliary tools, especially the network technology assistance. The huge resources provided by the network technology offer great convenience for the cultivation of “intuition” required by translation ability. With the development of the network and the increasing frequency of people using the network, online dictionaries will more be used in the future. Many online dictionaries have the functions of on-screen word retrieval and paragraph translation, and even can quickly translate the whole web page, which is quite fast. For example, in the process of using a dictionary, in addition to the basic definitions, users can compare the definitions and examples of the same word in different dictionaries horizontally, so that they can have a deeper understanding of the actual pragmatic meaning of the word in a specific context. In particular, there is no simple correspondence between many English words and Chinese definitions. Only by comparing multiple English definitions and examples can users determine the meaning of current new words and further translate sentences more accurately.

4. Conclusion

With the development of modern technology and communication technology, the application of smart phones to English translation is booming, and powerful smart phones can indeed play a right-hand role in English translation, which will effectively improve the efficiency of English translation. However, the smartphone-assisted English translation currently has certain shortcomings, such as poor compatibility, short standby time, and system limitations. With the continuous development of communication technology, the performance of smart phones has improved and prices have fallen, which will surely bring broad prospects for the development of English learning. The construction of the machine translation system focuses on the corpus research in the domain, so the system is domain-oriented and has the ability to customize the corresponding machine translation system. The premise is that the system must first have a database that basically covers the field. It is best to have a ready-made one. It can also be established by means of online download or input scanning. Of course, such corpus statistics and processing operations can be carried out before translating the source language each time to understand the content to be translated and accumulate knowledge for the system. Due to the rapid development of computer

software and hardware, the time of machine translation can be ignored. Therefore, even if such a corpus processing step is added, it still saves manpower. For larger translation tasks, it is better to prepare the corpus first.

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