Application technique of machine learning algorithm in English translation style

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Abstract

Machine learning algorithm as an important content of artificial intelligence technology research and discussion, now in the practice of promotion, not only accumulated a lot of application experience, but also changed the traditional technology operation mode. Especially in the field of translation, language translation using machine learning algorithms can obtain high-quality content. As one of the most concerned scientific and technological problems in the 21st century, machine translation is mainly used to solve the ambiguity of natural language at multiple levels, which involves the difficulty of processing, the speed of translation, the complexity of language and so on. Therefore, starting from the theory of intelligent technology research, this paper selects two methods of example learning and analogy learning to briefly analyze the application skills of machine learning algorithm in English translation style.

Keywords

Machine learning algorithm; English translation; Analogical reasoning; Rule of generalization.

1. Machine learning in this example

The introduction in the study of natural language processing machinery in the process of translation theory, research scholars more pay attention to the machine learning algorithms of institute is chosen, the reason is that machine translation processing goal is natural language, and human understanding of the cognitive process of language is not perfect, so if you want to get more ideal machine translation still needs constant exploration and innovation. Based on the analysis of machine learning and analogical machine learning in the example, it is found that computer programs can be used to search the original problems involved and simulate and analyze the thinking mode of solving relevant problems, which has a positive effect on English translation.

This model can make use of the process of inductive learning to seek a reasonable general description of the process, which can not only accurately explain the given input data, but also predict new data. For the convenience of computer programming, this description can be formalized, and finally the school-running relationship defined by the general relationship can be formed into a description set [1]. In a collection, the smallest element requires a special description in a given language, and the largest element requires the most general description of the data. There are many ways to solve problems, such as hierarchical structure description and predicate calculus, which can represent events and their general description. Predicate calculus has unique semantics and syntax, so many inductive learning artificial intelligence work will choose this way to deal with. The specific translation process is shown in Figure 1 below:
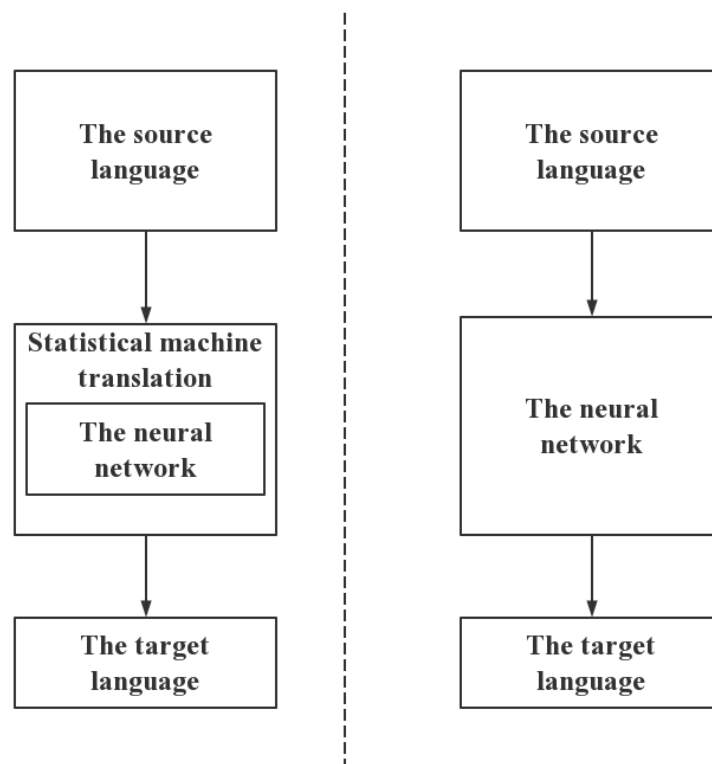
Fig. 1 Machine translation flow chart

2. Analogical machine learning methods

In current research, artificial intelligence researchers pay more attention to analogy technology. Research in this field is not only an effective way to learn core skills of new knowledge, but also an effective way to solve problems. From this point, comprehensive discussion can master a new knowledge mechanism. In essence, analogical reasoning is to deduce whether another object has the same property according to a known property of one object based on the similar or similar relationship between two objects. Analogical learning is generated between two similar domains, one is the domain that people have already known, which contains the content similar to the current problem that has been dealt with in the past, and the other is the domain that has not been seen at present, which is a brand new problem. The purpose of analogical learning is to find the content and solution similar to the current problem in the similar domain.

Transformational analogical learning, as a new learning method proposed by cash development, will acquire analogy-related information according to the external environment, and the learning system can find the existing problems similar to the core problems, and convert the relevant content to meet the needs of the new problems, so as to form a new knowledge [2.3.4]. This learning process is mainly divided into two aspects: on the one hand, it refers to the recall process, which is to find the difference between the old and new problems; on the other hand, it refers to the transformation process, which is to transform the original solution to the problem into the solution to the new problem after appropriate transformation.

3. Promote the use of analogical machine translation methods

3.1 Translation of complete examples

Combined with the machine learning platform analysis shown in the figure below, this translation method is to use the instance database to retrieve the target statement to be translated from the source statement waiting for translation, and the translation operation is retrieval. In practical development, full-instance translation technology will regard existing translation instances as knowledge sources.

In the initial operation, commonly used bilingual translation instances will be selected for input, thus forming special modules. With the increase of the actual number of translations, continuously accumulated translated texts will become samples of machine translation. Assuming that the language to be translated has only a limited number of commonly used sentences, the practical processing method is more practical, whereas the selected method is less practical. With the increasing number of bilingual texts in the instance library, the retrieval algorithm selected becomes the key to the operation. In the practice of innovation, researchers put forward the use of direct mapping retrieval algorithm[5.6].
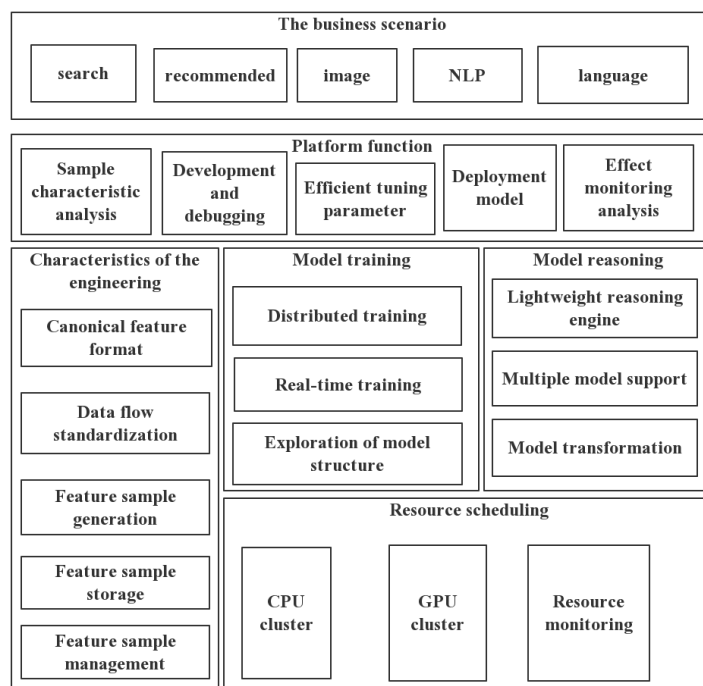

Fig. 2 Machine learning platform

3.2 Example sentence pattern conversion and translation

Complete instance translation can obtain high-quality translation, which is consistent with human translation, but the actual success rate is too low, and cannot be proportional to the number of examples in the translation instance database. If the complete example is extended to the translation between sentence patterns, it can not only improve the speed of translation, but also guarantee the success rate of translation. To put it simply, sentence pattern conversion translation is to map the words and sentence structures of the source sentence to the corresponding words and sentence structures of the target text. The core of bilingual translation is the expression consistency of sentence structure, so as long as the expression set model is constructed, the corresponding translation content can be obtained.

3.3 Example analogy approximate translation

On the basis that the above two methods cannot be translated, the system can choose this module for processing, whose essence is to perform approximate retrieval of sentence expressions, in other words, to match the most similar sentences with the input data. According to the similarity between the sample and the translated sentence, the similarity of all the similar sentences is calculated accurately, and the closest one is finally selected as the translation result. There are many calculation methods for similarity, which need to be selected according to translation requirements, including speech class, semantic class, morphological change, semantic relationship and so on.

4. Conclusion

To sum up, combined with the above research, it is found that machine learning algorithms have unique application advantages in English translation style. In future scientific research, it is necessary to strengthen the research on relevant technical theories, focus on continuous exploration from the development needs of the translation field, and finally put forward a more effective translation module. At the same time, it is necessary to strengthen the training of professionals according to the requirements of technical research, so as to ensure that machine learning algorithms can be fully used in the field of translation.

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