Title :

Question Target Classification using Support Vector Machine and Semantic Network

Abstract :

Question classification holds a major role in question answering system because incorrect attribution of question to defined classes is the principal reason of the defect of such systems and reduces their efficacy. Although until now effective question classification methods have been introduced, these methods have fallen short of achieving accuracy and as result beg for improvement. Generally speaking, taking into account these methods and their outcomes, it should be mentioned that question classification in an open domain system, in a way that both the context and target of the question are duly considered and in the way that it has an appropriate function on all defined classes, has proved to be a challenge. In fact, open domain question answering systems consists of several categories and many diverse questions. These questions bear meaning and for attributing each question to its class, it is necessary to elicit these meanings and use a language processing tool. That is why it is important to take into account the structure and the concept of the question in order for it to come to fruition. This research offered a method for question classification based on target words. This method is composed of two classifiers, namely semantic network and support vector machine. The former is used for question classification based on the meaning and the structure of the question, in a nutshell, for question classification purposes. Apart from these two classifiers, another method was proposed for combining the results. In this method, each of the classifiers was given a weight. Then, the weight of each is calculated and the one that has a higher weight is chosen. In this research, question classification has been executed and evaluated through TREC-10 and UIUC. The accuracy of the proposed method was 93.60 and 91 and the precision thereof was 91.99 and 89.68 for coarse-grained and fine-grained class respectively. The results are indicative of the supremacy of the present method over other ones when it comes to accuracy and precision.