Extraction of Event Elements Based on Event Ontology Reasoning

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Abstract. This paper proposes an event elements extraction method based on event ontology reasoning by constructing an upper event ontology and event elements reasoning rules based on event non-taxonomic relations. Event elements extraction includes three steps: data preprocessing; complementing event elements initially; event elements reasoning. The experimental results show that this method can improve the accuracy of event elements extraction.

Keywords: Event ontology reasoning · Event elements · Event elements extraction

1 Introduction

In the field of NLP, event is a structured knowledge unit with bigger granularity than concept, which is in line with human cognition. Therefore, in the field of AI, researchers hope that event-related (including action, time, place and people) information can be automatically identified from text by machine, thus to achieve some automatic text processing tasks, such as text classification, topic detection and tracking and so on. Therefore, identification of event elements has become an important sub-task of event information extraction.

The machine learning method considers event extraction as a classification problem and has good robustness, but it requires large-scale corpus labeled as model training base, which results in very laborious manual annotation. For shortcomings of machine learning method, this paper proposes an event elements extraction method based on event ontology. This method enables machine to mimic users' reading habits, utilize event ontology to associate event information and reasons about event elements including place, time, subject and object.

2 Related Work

Machine learning method is more objective and does not require much human intervention and domain knowledge, which includes two key steps, classifier construction and feature selection. In [1], machine learning methods were utilized to identify

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