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Procedia Engineering 15 (2011) 3600 – 3603

Procedia Engineering

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Advanced in Control Engineeringand Information Science

Study on core Technologies of Query-oriented Automatic Summarization

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Abstract

In the paper, how to meet the users' need plays a very important role in the study on the query-oriented automatic summarization. Combining with the influence of text granularities and query information, we construct a model to explain the relationship between text granularities, point out the way based on the semantic relation to test text similarity, adopt a strategy to sentence dynamically allocation to produce summarization. Experimental results show that there is less redundant but more comprehensive information in the summarization. It confirms that the model and the strategy are effective and feasible for faster query speed and better results.

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Keywords：query-oriented ； automatic summarization；text similarity；sentence extraction

1. Introduction

Query-Oriented Automatic Summarization is composed of the sentences associated with query, which are distinguished from other sentences in the document sets. The users' query request expresses what kind of information is needed.

The summarization from different angles is different when the query is different. General summarization is the refining text from the topics of the document set; Query-Oriented Summarization basically includes the topics associated with query. [1] The formation of Query-Oriented Automatic Summarization is as shown in figure 1.

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1877-7058 © 2011 Published by Elsevier Ltd.
doi:10.1016/j.proeng.2011.08.674

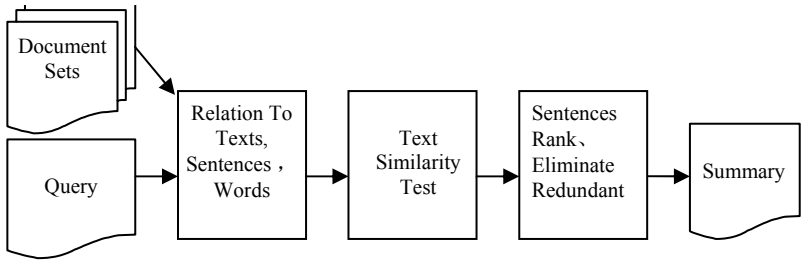

Fig. 1. The Formation of Query-Oriented Automatic Summarization

2. Text granularities relation model based on query-oriented summarization

2.1. Text granularities

In text processing and applications, there are three kinds of text granularities such as text, sentence and word. They have constraint and influence with each other. Sentence is part of text, meanwhile a set of words. Sentence in the text is not independence. [2] However, people paid little attention to the constraint and influence in previous sentence rank algorithm but the similarity of sentences in most sentence rank algorithm.

2.2. The relation model of query and text granularities

In the query-oriented automatic summarization, we should pay full attention to the relation of text granularities in query and document sets, make the summarization more comprehensive and detailed to meet the needs of the users'. In the paper, the relation between the two of the word, sentence and text is called 'external enhance', otherwise, the relation between the same text granularity is called 'internal enhance'. External environment such as users' query affects the mutually reinforcing relationship. [3] Flowing that, a query-oriented similarity measure is pointed out and is as shown in figure 2.

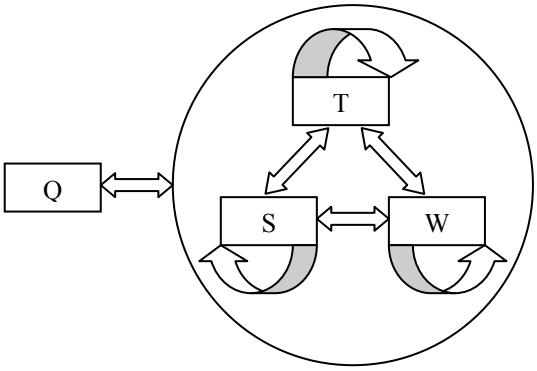

Fig. 2. The Relation Model of Query and Text Granularities

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