

# Automatic Indexing Based on Term Activities

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**Abstract.** This paper proposes an automatic indexing method named PAI (Priming Activation Indexing) that extracts keywords expressing the author's main point from a document. The basic idea is that since the author writes a document emphasizing his/her main point, impressive terms born in the mind of the reader could represent the asserted keywords. Our approach employs a spreading activation model.

## 1 Introduction

The human mind can be modeled as a network where concepts are connected to a number of other concepts and the states of concepts are expressed by the activities. If a concept is activated, its adjacent concepts are in turn activated. Thus, activities spread through the network. Many experiments indicate that the speed of associating a concept is in proportion to the level of activity. This kind of phenomenon is known as *priming effect* [1].

The priming effect is considered to be closely related to the process of understanding/interpreting a document in the reader's mind. Usually, an author emphasizes his/her main point in the document content, and we go on understanding/interpreting by activating related concepts as we read the content.

The mechanism of priming effect at understanding/interpreting a document, has been formalized as *Spreading Activation Model* based on the empirical experiments in cognitive science [2]. In this paper, we regard highly activated terms as strongly memorized terms in the reader's mind, and extract them as keywords representing the author's main point.

## References

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