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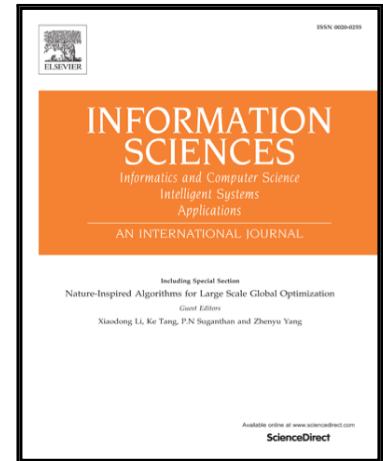
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Word sense disambiguation: a complex network approach

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Abstract

The word sense disambiguation (WSD) task aims at identifying the meaning of words in a given context for specific words conveying multiple meanings. This task plays a prominent role in a myriad of real world applications, such as machine translation, word processing and information retrieval. Recently, concepts and methods of complex networks have been employed to tackle this task by representing words as nodes, which are connected if they are semantically similar. Despite the increasingly number of studies carried out with such models, most of them use networks just to represent the data, while the pattern recognition performed on the attribute space is performed using traditional learning techniques. In other words, the structural relationship between words have not been explicitly used in the pattern recognition process. In addition, only a few investigations have probed the suitability of representations based on bipartite networks and graphs (bigraphs) for the problem, as many approaches consider all possible links between words. In this context, we assess the relevance of a bipartite network model representing both feature words (i.e. the words characterizing the context) and target (ambiguous) words to solve ambiguities in written texts. Here, we focus on semantical relationships between these two type of words, disregarding relationships between feature words. In special, the

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