Abstract

In this article we will discuss the work of a semantic comparison method, through which the
detection of plagiarism is revealed in the fuzzy information, which we have designed an
algorithm with a semantic dimension to detect plagiarism in the fuzzy information and detect
impersonations such as changing the structure of speech or replacing words with synonyms
and limiting technical spelling errors such as not completely writing the end of the word or
unofficial and unknown abbreviations, and analyze shows the degree of similarity of the original
text, and analyzes the overall evaluation of the degree of similarity of texts from the apparent
structures of the text. Experiments have shown that the proposed method with a semantic
dimension in the case of fuzzy information is better than sherlock method in terms of file size
criterion of 6% if using word synonyms in the file and 1% in case of rewriting the file. As for the
standard time taken to examine the files through the acceleration calculation, it is noted that the
proposed method for the semantic dimension in the case of fuzzy information is faster in
performance than the Sherlock method in the case of the use of synonyms 1.02 times and in
the case of rewriting words with a value of 1.01 times in the case of file size 382 words. The results of the experiments show that the average execution time of the proposed algorithm, for finding plagiarism, is less by 3.47% compared with the Sherlock algorithm in the case of the use of synonyms and less by 1.83% compared with the Sherlock algorithm in the case of rewriting words. The algorithm works effectively as the file size increases, the gain ratio is obtained up to 2.73% in the synonym of words and 2.69% in the case of rewriting words. From the results presented in the tables, we conclude that the average error rate of the proposed algorithm is 2% lower than the error rate sherlock algorithm. The complexity of the proposed algorithm is O(m*n).

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Index Terms

Computer Science  Algorithms

Keywords

Plagiarism detection, medical ontologies, software engineering ontology, Semantic network.