Semantics representation in a sentence with concept relational model (CRM)

ABSTRACT

The current way of representing semantics or meaning in a sentence is by using the conceptual graphs. Conceptual graphs define concepts and conceptual relations loosely. This causes ambiguity because a word can be classified as a concept or relation. Ambiguity disrupts the process of recognizing graphs similarity, rendering difficulty to multiple graphs interaction. Relational flow is also altered in conceptual graphs when additional linguistic information is input. Inconsistency of relational flow is caused by the bipartite structure of conceptual graphs that only allows the representation of connection between concept and relations but never between relations per se. To overcome the problem of ambiguity, the concept relational model (CRM) described in this article strictly organizes word classes into three main categories; concept, relation and attribute. To do so, CRM begins by tagging the words in text and proceeds by classifying them according to a predefined mapping. In addition, CRM maintains the consistency of the relational flow by allowing connection between multiple relations as well. CRM then uses a set of canonical graphs to be worked on these newly classified components for the representation of semantics. The overall result is better.