This paper presents a new open text word sense disambiguation method that combines the use of logical inferences with PageRank-style algorithms applied on graphs extracted from natural language documents. In this paper, we explore the applicability of PageRank to semantic networks, and show that such graph-based ranking algorithms can be successfully used in language processing applications. PageRank is a way of deciding on the importance of a vertex within a graph, by taking into account global information recursively computed from the entire graph, rather than relying only on local vertex-specific information.

Iterative graph-based ranking algorithms are essentially a way of deciding the importance of a vertex within a graph; in the context of search engines, it is a way of deciding how important a page is on the Web. In this model, when one vertex links to another one, it is casting a vote for that other vertex. The higher the number of votes that are cast for a vertex, the higher the importance of the vertex. Moreover, the importance of the vertex casting the vote determines how important the vote itself is, and this information is also taken into account by the ranking model.