Abstract

In this paper analyzes how the Google web search engine implements the PageRank algorithm to define prominent status to web pages in a network. It describes the PageRank
algorithm as a Markov process, web page as state of Markov chain, Link structure of web as Transitions probability matrix of Markov chains, the solution to an eigenvector equation and Vector iteration power method.

It mainly focus on how to relate the eigenvalues and eigenvector of Google matrix to PageRank values to guarantee that there is a single stationary distribution vector to which the PageRank algorithm converges and efficiently compute the PageRank for large sets of web Pages. Finally, it will demonstrate example of the PageRank algorithm.

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Index Terms

Computer Science Information Retrieval
Keywords

PageRank

Markov chains

Power method

Google matrix

Stationary distribution vector

Eigen Vector

Values