MICANSINFOTECH

+91 90036 28940 +91 94435 11725

Relevance Feedback Algorithms Inspired by Quantum Detection

ABSTRACT

Information Retrieval (IR) is concerned with indexing and retrieving documents including information relevant to a user's information need. Relevance Feedback (RF) is a class of effective algorithms for improving Information Retrieval (IR) and it consists of gathering further data representing the user's information need and automatically creating a new query. In this paper, we propose a class of RF algorithms inspired by quantum detection to re-weight the query terms and to re-rank the document retrieved by an IR system. These algorithms project the query vector on a subspace spanned by the eigenvector which maximizes the distance between the distribution of quantum probability of relevance and the distribution of quantum probability of non-relevance. The experiments showed that the RF algorithms inspired by quantum detection can outperform the state-of-the-art algorithms.

EXISTING SYSTEM

The Text Retrieval Conference (TREC) test collection1 fromwhich the query is submitted to an IR system based on the Vector Space Model (VSM).An IR system addresses the problems caused by query ambiguity by gathering additional evidence that can be used to automatically modify the query. RF can be positive, negative or both. Positive RF only brings relevant documents into play and negative RF makes only use of irrelevant documents; any effective RF algorithms includes a "positive" component.

DISADVANTAGES

- A query can be very problematic because of the richness of natural language.

- Irrelevant documents may be retrieved or relevant documents may also be missed when a query is not short.

MICANSINFOTECH PVT LTD   :   CADD COLLEGE   : MICANS BANKING SCHOOL

No: 19, SIVAM TOWERS, III FLOOR, IG SQUARE,   No 798 c, NEHRUJI ROAD, VILLUPURAM
VILLIANUR ROAD, PUDUCHERRY   OPPOSITE TO MARKET COMMITTEE

WWW.MICANSINFOTECH.COM ; micansinfotech@gmail.com; +91 90036 28940; +91 94435 11725

WWW.MATLABPROJECTS.COM; WWW.MICANS.IN; WWW.MICANSIEEEPROJECTKART.COM

PROPOSED SYSTEM

To replace the vector-space RF algorithms based on the VSM and the probabilistic algorithms based on the BM25 with algorithms inspired by quantum (signal) detection. We first propose to define signal detection in terms of quantum probability. As quantum probability generalizes classical probability, there are quantum probability distributions that cannot be defined within the usual theory of probability, thus allowing us to find optimal solutions which otherwise could not be found. The use of vectors and matrices in quantum probability allows us to seamlessly integrate our proposal in the VSM.

ADVANTAGES

- The optimal solution to the problem of finding the maximal distance between two quantum probability distributions.
- Our approach has low complexity and can be used in reality.
- Our approach can effectively work for query term reweighting with no query expansion.

MICANSINFOTECH PVT LTD   :   CADD COLLEGE   : MICANS BANKING SCHOOL

No: 19, SIVAM TOWERS, III FLOOR, IG SQUARE,   No 798 c, NEHRUJI ROAD, VILLUPURAM
VILLIANUR ROAD, PUDUCHERRY   OPPOSITE TO MARKET COMMITTEE

WWW.MICANSINFOTECH.COM ; micansinfotech@gmail.com; +91 90036 28940; +91 94435 11725

WWW.MATLABPROJECTS.COM; WWW.MICANS.IN; WWW.MICANSIEEEPROJECTKART.COM

MICANSINFOTECH   +91 90036 28940 +91 94435 11725

SYSTEM REQUIREMENTS:

HARDWARE REQUIREMENTS:

- System   : Pentium IV 2.4 GHz.
- Hard Disk   : 40 GB.
- Floppy Drive   : 1.44 Mb.
- Monitor   : 15 VGA Color.
- Mouse   : Logitech.
- Ram   : 512 Mb.

SOFTWARE REQUIREMENTS:

- Operating System   : Windows 8
- Application Server   : Tomcat5.0/6.X
- Front End   : HTML, Java, Jsp
- Scripts   : JavaScript.
- Server side Script   : Java Server Pages.
- Database   : Mysql 5.0
- Database Connectivity   : JDBC.