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Searching Non-Community Structure Using Gauss Jordan Method In Brush Structure Model

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ABSTRACT :

Search for web pages of person with given name constitutes notable fraction of queries to web search engines. Such a query would normally return Web Pages related to several namesakes. This list is counterproductive because the user finds it extremely difficult to scroll through many entries to find the desired information. So here we propose a new formulation of the conceptual problem where the goal is to explicitly output a collection of simple and meaningful conjunctions of attributes that defines the conceptual clustering of brush structure model. This research work is mainly focused on affording a knowledge mining tool in the form of brush model that results in spite of web page URLS. The primary goal is to develop conceptual clustering web pages using Gauss Jordan Method. The secondary goal to maintain that web pages using Brush structure model. In future, this Conceptual Clustering search engine using Brush structure model may be played as a powerful tool in the search engine.

Keywords: Conceptual Clustering, Information Retrieval search engine, Brush structure model visualisation, Gauss Jordan Method(NMF).

INTRODUCTION :

Many approaches are being used by researchers for organizing search results to improve the processes of over viewing and windowing them. There are two main approaches, document based approach[2] and label based approach. Instances of the document-based approach include many documents using the similarity features such as keyword vectors of documents. After extracting representative terms, or sentences as labels from each cluster, presented to the user with search result. Document based approach usually yield non-over-lapped clusters and label quality is influenced by accuracy of clustering. Though the number of clusters or similarity threshold generally controls clustering, it is difficult to select a value that suits user's intention. As a result, labels are often unreadable, so it is difficult to adopt this approach in search engine application. Mooter are meta search engines that employ label-based approach raise these problem of Ineffective term extraction and label selection error Inefficient overview of search results. A handful of clustering algorithms are available. But classical clustering algorithms are not efficient to cluster search results, because of the insufficient inputs. Hence we are in need of advanced clustering algorithms. Most of the clustering algorithms are similarity based algorithms. Hence these algorithms group relevant results based on string matching function. This leads to inefficient results. To overcome these problems, the thesaurus based conceptual clustering method using Gauss Jordan Method[1] is proposed in this paper.

CLASSICAL CLUSTERING :

There are two methods, hierarchical algorithm and partitional algorithm. Organise samples or Webpages to form a tree structure. Repeatedly split/merge nodes. e.g. single-link agglomerative Partitional Algorithms Organise samples or genes into nonoverlapping disjoint clusters, Iteratively reassign instances to optimise an objective function. e.g. *k*-means clustering.
Drawback of classical clustering is Often perform poorly on high-dimensional data Can produce inaccurate clusterings, Can fail to identify localised subspace clusters, as clusters areconstructed on the basis of all features.Hence we are in need of advanced clustering algorithms. Hence these algorithms groups' relevant results based on string matching function. This leads to inefficient results. To overcome these problems, the thesaurus based conceptual clustering method is proposed in this paper.

SPECTRAL CLUSTERING :

Using spectral clustering, dimension reduction can identify latent relations and filter noise. Produces a unique solution. But lack of interpretability of basis vectors due to negative values" Figure 1"Clusters are produce from a "global" view of the data, so can fail to identify subspace clusters.

$$\begin{bmatrix} 2 & 0 & 3 \\ 4 & 1 & 3 \\ 0 & 2 & 0 \\ 0 & 4 & 1 \end{bmatrix} \Rightarrow \begin{bmatrix} -0.5 & -0.3 & -0.8 & -0.3 \\ -0.8 & -0.2 & 0.6 & 0.1 \\ -0.1 & 0.4 & 0.2 & -0.9 \\ -0.3 & 0.8 & -0.2 & 0.4 \end{bmatrix} \bullet \begin{bmatrix} 6.4 & 0 & 0 \\ 0 & 4.3 & 0 \\ 0 & 0 & 1.1 \\ 0 & 0 & 0 \end{bmatrix} \bullet \begin{bmatrix} -0.7 & -0.4 & 0.7 \\ -0.4 & 0.9 & 0.1 \\ -0.7 & -0.2 & -0.7 \end{bmatrix}$$

Figure 1

PROPOSED CLUSTERING ALGORITHM :

Algorithm 1: Sequential Gauss - Jordan algorithm
for k ← 0 to n − 1 do
for i ← 0 to n − 1 do
if k != i then
for j ← k + 1 to n
do a[i][j] ← a[i][j] − (a[i][k]/a[k][k]) ∗ a[k][j]
for i ← 0 to n − 1 do
x[i] ← a[i][n]/a[i][i]

GAUSS JORDAN METHOD First of all, we describe the known Gauss Jordan method for fixing a device of linear equations. recollect the following actual linear algebraic machine Ax = b, where A = (aij) n×n is a recognized non singular n × n matrix with nonzero diagonal entries, b = (b0, b1, ..., bn−1) T is the right-hand aspect and x = (x0, x1, ..., xn−1) T is the vector of the unknowns. In Gauss-Jordan algorithm, first a operating matrix is constructed by augmenting A matrix with b, obtaining (A|B) matrix with n rows and n + 1 columns. Then, this matrix is converted right into a diagonal form, the usage of Gaussian elimination. [2]Gauss-Jordan algorithm is achieved in phases. in the first phase of Gauss-Jordan set of rules, the augmented matrix is converted into a diagonal form in which the factors each above and under the diagonal element of a given column are zero. in the 2d segment, each xi (zero ≤ i ≤ n) answer is computed with the aid of dividing the element from row i and column n of the augmented matrix (ai, n) with the element from the row i of the principal diagonal (ai, i). The serial model of fashionable Gauss-Jordan algorithm for solving a linear system proven in set of rules 1 consists of three nested loops, which we are able to undertake for parallel implementation inside the rest of this paper.

Reduced Row-Echelon Form: [100a
010b001c].

$$\begin{bmatrix} 1 & 0 & 0 & a \\ 0 & 1 & 0 & b \\ 0 & 0 & 1 & c \end{bmatrix}$$

Once the matrix is in this form, $x=a$, $y=b$, $z=c$. In other words, the solution to the system of equations is the **ordered triple**: (a,b,c).
There are three elementary row operations that can be applied to a matrix to obtain reduced row-echelon form:

1. Swapping two rows
2. Multiplying a row by a nonzero number
3. Adding a multiple of one row to another

Swapping two rows occurs when two rows switch locations in the matrix. Any two rows can be interchanged in a matrix. In the case below, Row 1 ($R1$) and Row 2 ($R2$)are interchanged.

Finally getting non-community results.

$$\begin{bmatrix} a & 1 & 0 & 0 \\ b & 0 & 1 & 0 \\ c & 0 & 0 & 1 \end{bmatrix}$$

BRUSH STRUCTURE VISUALIZATION MODEL

The index is a systematic arrangement of entries designed to enable users to locate information in a document. The process of creating an index is called indexing. There are many types of indices from cumulative indices for journals to computer database indices. This Brush structure Model is a Information Retrieval Engine indexer. The goal of storing an index is to optimize the speed and performance of finding relevant documents for a search query. Without an index, the Information Retrieval Engine would scan every document in the corpus, which would take a considerable amount of time and computing power. No Search Engine user would be comfortable waiting several hours to get search results. The trade off for the time saved during retrieval is that additional storage is required to store the index and it takes a considerable amount of time to update. This brush structure model reduces several burdens. The diagrammatic picture of brush structure model is depicted in “Figure 2” and is developed for the proposed conceptual based clustering technique, it may provide efficient results.

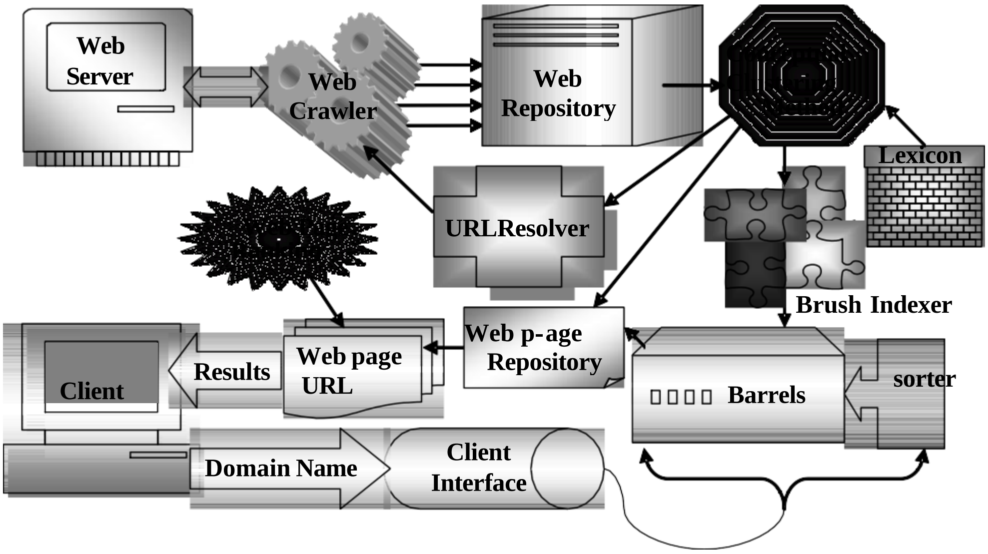
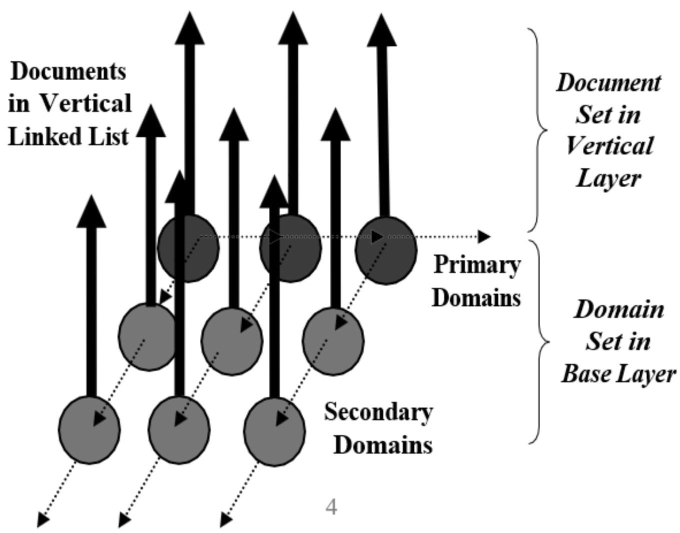


Figure 2. : Conceptual Search Engine

It is a three dimensional data structure derived by combining a horizontal dynamic matrix as the base and a vertically growing linked list as the branches over the base, keeping all the nodes in the base matrix as the starting points for the vertical linked list [5]. In the brush, the first row is called as Primary Domain Set; the columns of first row are termed as Secondary Domain Set and the documents corresponding to Primary and Secondary domain set in the vertical linked list are called as Tertiary Document Set. The documents are arranged in a sorted manner based on expert ranking in the Tertiary Document Set. With the help of a community based Lexicon, a forward indexing is made, that result into document IDs and its corresponding domain IDs. From the results obtained, an inverse indexing is made using brush structure by keeping the base layer as Primary and Secondary domain set and the vertical layer as Tertiary document set. The brush indexing algorithm is as given below and “Figure 3” shows the Brush structure model.

//Brush indexing Algorithm

```
struct brush{
char wid[7];struct brush *next, *below; struct document  *list;
}*head;
```



RESULTS AND DISCUSSION :

The goal of storing an index is to optimize the speed and performance of finding relevant documents for a search query. Without an index, the Information Retrieval Engine would scan every document in the corpus, which would take a considerable amount of time and computing power. No Search Engine user would be comfortable waiting several hours to get search results. The trade off for the time saved during retrieval is that additional storage is required to store the index and it takes

The following "Figure 4" shows the Brush structure model visualization. The base domains are Data mining , data , mining and others.

CONCLUSION :

In this paper, the importance of discovering Conceptual Search engine using Brush model visualization has been strongly insisted, where the goal is to identify a collection of web page description. Since the previously available search result clustering algorithms like Vivisimo and Mooter are built up on the basis of similarity, the proposed conceptual based clustering technique may provide efficient results. This algorithm tries to solve the problems related with cluster label pruning, topic separation and extraction of conceptual phrases. brush structure model indexer, the results are found to be very accurate. The immediate goals are to improve search efficiency, to reduce spam pages, to utilize less memory and to scale the number of web pages.Since this research is a general method, that could be potentially designed and used for any domain. Using gauss Jordan method for getting non Community Brush structure model.

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