Review on Clustering Technique on Segmentation in Data Mining

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Abstract: - **Clustering techniques have obtained adequate results when are applied to text mining problems. However, different runs of the same clustering technique on a specific text set may result in different solutions. The cause of this difference is the choice of the initial cluster setting and the values of the parameters associated with the technique. A definition of good initial settings and optimal parameters values is not an easy task, particularly because both vary largely from one text set to another.**

Keyword: **Data Mining, Clustering, Classification, Apriori Algorithm, WEKA tool**

I. INTRODUCTION

Data mining refers to extracting or mining knowledge from vast amount of data. Data miming is a multidisciplinary field .capturing work from areas including database technology ,machine learning ,statistics ,pattern recognition ,information retrieval ,neural networks ,knowledge based systems ,artificial intelligence etc. Data mining, the science and technology of exploring data in order to discover previously unknown patterns, is a part of the overall process of knowledge discovery in databases. Clustering technique (technique to make grouping between similar and dissimilar objects of data sets) is one of the major fields in the area of extracting knowledge from such datasets.

Feature hashing studies has a major role in the text mining studies. Most of the text mining studies, dealing with the big data like the studies on social networks or web mining studies [1]. A generic deployment diagram of the text mining, which uses the feature hashing, is demonstrated on Figure 1.
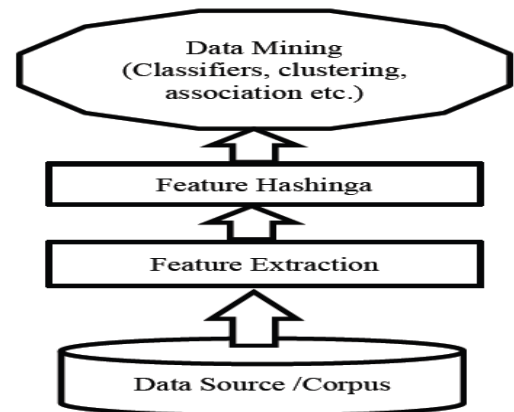

Figure 1 Generic Deployment Diagram of Text Mining

II. LITERATURE SURVEY

Clustering has a long and rich history in a variety of scientific fields. One of the most popular and simple clustering algorithms, K-means, was first published in 1955. In spite of the fact that K-means was proposed over 50 years ago and thousands of clustering algorithms have been published since then, K-means and Apriori are still widely used.

Lie Wei [3] proposed a method in which delta field Poincare index and a rapid classification algorithm is used to classify the fingerprint in to 5 classes on basis of singularities. To get singularities a direction of larger change is used for searching by detection algorithm. Accuracy is improved when singularities detected.

Hartwig Fronthaler, et al. [4] proposed a method to improve the matching performance and efficiently computation in fingerprint recognition.

For this implementation an image scale pyramid and directional filtering in the spatial domain is used.

M. R. Girgisa et al., [5] proposed a hybrid approach which used in help of fingerprint matching on basis of line extraction and graph matching principle. Two phased existed one is genetic algorithm phase and other is a local search phase. Robustness of algorithm is demonstrated by results of implementation.

Duoqian Maio et al., [6] proposed an auto fingerprint identification system which is based on principal graph algorithm by kegl that provide principal curves. So there were some minutiae point in fingerprint image, these points are extracted using an algorithm. He concluded that curves is generated by this proposed approach is very smoother as compared to thinning algorithm.

Luping Ji, and Zhang Yi [7] estimated a four direction oriented field method that complete its process in following four steps, i) pre-processing step is performed first for image of fingerprint, ii) neuron pulse coupled neural network is used to determine primary ridge of fingerprint, iii) block direction is estimated by projective distance variance of a ridge, instead of a full block, iv) in the final step orientation field that is estimated initialized to correct process

G. Sambasiva Rao et al., [8] proposed a gray level watershed technique for fingerprint recognition. It scanned fingerprints and find out the ridges present on a fingerprint image.

Jinwei Gu, et al., [9] a fingerprint verification technique is proposed that is based on determination of minutiae and orientation field. Robust discriminatory information is provided by this that is other than minutiae points. Decision of matcher on orientation field and minutiae are combined to match the Fingerprint.

V. Vijaya Kumari and N. Suriyanarayanan [10] proposed a method which measure performance in fingerprint by detecting the edges of fingerprint images using five local operators namely Sobel, Roberts, Prewitt, Canny and LoG. Individual segments from image are extracted from the edge detected image.

Raju Sonavane, and B.S. Sawant [11] presented a method for enhancement in fingerprint by using a special domain in which the fingerprint image is decomposed into a set of filtered images after that we estimated orientation field. We required a mask for quality purpose that differentiates between corrupted regions in the input image are generated. Using the estimated orientation field, enhancement in fingerprint image is adaptively done in the recoverable regions.

Eric P. Kukula, et al., [12] proposed a work on the investigation of that five force levels that affect the performance, quality of image and minutiae count between optical and capacitance fingerprint sensors. He chose three images from 75 participants that are indexed in sensing technology. Kruskal-Wallis conducted a test of nonparametric which found differences in minutiae counts and image quality scores based on the force level. The results concluded that there was no difference in minutiae count of images but the quality of images has much difference based on the force levels of the capacitance sensor. There were many factors that affect image quality score by force and sensor type, yet the removal of low quality images does not improve the system performance at each force level.

Mana Tarjoman and Shaghayegh Zarei [13] proposed an approach that structural in type for fingerprint classifications. This approach is using a directional image of fingerprint instead of singularities. Dominant directions of ridge lines are included in directional image.

Sharath Pankanti et al., [14] proposed a technique for matching and representing fingerprint is known as Scale Invariant Feature Transformation (SIFT). Hybrid approaches with combination of both SIFT and conventional minutiae are providing better results than available individual schemes.

Bhupesh Gour et al., [15] have developed a method in which midpoint ridge contour representation is used for extraction of minutiae in fingerprint images. At initialisation of process segmentation process is performed separately for foreground from background of fingerprint image. Size of region is 64x64 that is extracted from fingerprint image. 64 x 64 normalized windows are used in normalization contrast of the ridges for enhanced of filtering by appropriately tuned Gabor filter. Scanning of image is performed from top to bottom and left to right and transitions from white (background) to black (foreground) are detected. Calculation is done for contour length vector in all eight directions. Each element of contour is represented as a pixel on the contour, the x, y coordinates contain field for pixel.

Haiping Lu et al., [16] proposed an algorithm that is so effective and efficient that improves the overall performance of fingerprint identification system that is automatic because it is very important to preserve true minutiae while removing spurious minutiae in post-processing. Much effort are used in proposed novel fingerprint image post-processing algorithm to reliably differentiate between true ones and false one in minutiae by making use of ridge number information.

Ballan M [17] on the basis of singular point fingerprint smoothing, classification and identification are used for processing of a Directional Fingerprint. Fingerprint histogram that is directional by nature provides this. Lasso and Wirbel are considered as main categories of fingerprints. For finding the results some processes followed like formation of directional image with block representation, singular point detection and decision. Due to this method the errors for matching decision vectors are minimums, and method is simple and fast.

III. CONCLUSION

The research on the characteristics of Apriori algorithm based on software reverse is the foundation of recognition. This paper referring to the encrypt theory of Apriori algorithm researches the realization characteristics of each reversing level. By software reversing the characteristic of Apriori algorithm improved. The further research should focus on the normalization of these characteristics, construction of multi-level characteristic templates of Apriori algorithm and the realization of automatic recognition.

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