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Pseudo Code to Eliminate Unwanted Data Sets for Fuzzy Mining Association Rule

Asha miri[1], S.R.Tandan[2],Rohit Miri[3] , Priyanka Tripathi[4]
[1,2,3]*Department of Computer Science & Engineering*
Dr. C.V. Raman University, Kota, Bilaspur, India (C.G.)
[4]*Department of Computer Technology, NITTTR, Bhopal (M.P.)*

Abstract— We all know that data mining association rule is very easy for small or medium data sets. If we apply fuzzy association rule then it will be a complex task for large data sets. we reduce the computational time or large data sets in to smaller data sets by applying the proposed algorithm. For large data set then we require more computational task on data sets to find the candidate item sets and large item sets again and again. It is necessary to reduced large data sets into smaller data sets before applying mining association rule. On this paper we proposed the algorithm to easy way to calculate data mining association rule.
Keywords—Fuzzy Logic, Data Mining, Row Count

I. INTRODUCTION

Now a day's fuzzy logic and data mining are the two most important techniques on the field of research area. Fuzzy logic uses linguistic variable to provide the answer that human being are not able to give. Whereas data mining is used to find out the essential things from large data sets ,then apply some association data mining algorithm to find the relationships among the item sets. This research paper find out the range of linguistic variable by using standard deviation and mean in place of assuming its values. This algorithm may be implemented in SCILAB of MATLAB tools.

II. LITERATURE REVIEW

Mohammed Al-Maoleg1[1] et al chooses those item sets that are frequently present in particular transaction id. Its algorithm works on low support .3 and reduces the time complexity of the program very easily. Zhiyong ma [4] et al converts all the item sets into Boolean matrix by using CP tree method and reduces the time for the task.ArpnaShrivastava [5] et al , in this paper the authors have used the codes for all the items and remove the duplication by using data cleansing technique. This is also most efficient as compared to simple Apriori algorithm. K. Sathesh Kumar and M. Hemalatha [3] , this paper reduces the operational time carried out by Apriori algorithm by using artificial Bee colony optimization method (FABCO).Mehmet Kaya et al [38] , in this paper the author find the efficient algorithm by carried out mining fuzzy clustering algorithm (CURE). They found out the centroid by CURE for triangular membership function.so that they can range the fuzzy membership method correctly and also reduces the computational time. As we know we need some kind of association rule to perform data mining algorithm. Getting this Agrawal and his co-worker carried out some mining algorithm based on the large data sets, which is difficult to find association mining rule [9-18]. These break the mining steps into two phases. In the first phase candidate of item sets are obtained and counted by scanning the transactions. The number of item set must support the minimum pre-defined threshold value called minimum support. Then later we make the pair of item sets and apply the association rule for getting the required output. Srikant and Agrawal also proposed partitioned based mining association algorithm. The fuzzy set was first carried out by Zadah in 1965 [37]. Fuzzy set are used to provide the answer, when human being are unable to provide the answer of some complicated questions. Hong et al, proposed a fuzzy mining algorithm to mine fuzzy rules from quantitative data [31]. They required each quantitative data into a fuzzy set and fuzzy steps to find fuzzy rule.Cai at al proposed weighted mining rule of data sets [22]. Yue et al, extended the fuzzy concept based on vectors [36].Most of them are find out the range of triangular fuzzy membership function directly , means they assumed the range of linguistic variable. But on Our paper we have find out the range of linguistic variable by using mean and standard deviation.

Relevant attribute and membership function is carried out by Hong [29]. He also combines Fuzzy Logic and Data Mining techniques to improve the operational time. The aim of his research is to remove unwanted data sets from very large data items. Chang [24] et al Fuzzy decision tree is carried out by using the cluster technique. Mining association rule was also performed by Hang [32]. The aim of his research is digging out the essential or useful item from very large data set. He also wants to improve the data mining algorithm in terms of time complexity. I used [9],[15] for comparison with Our algorithm. They have done on fuzzy mining association rule to reduce the computational time. The pseudo code are as follows

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III. PSEUDO CODE (ALGORITHM)

STEP:1 Analysis the data sets whether it is homogeneous or heterogeneous. Homogeneous means the given data set carries same values. i.e all variables contains similar values. There is no rating for variables values.

STEP:2 If the given data sets is heterogeneous. The attributes are variable values contains rating .i.e separate the data sets according to rating. Find out standard deviation and mean separately of different rating.

STEP:3 Create or build triangular membership function and define or assume the range of linguistic variable with the help of standard deviation and mean of given data sets i.e low middle and high for different rating data sets.

STEP:4 Find out the fuzzy values of data sets

Separately .In this, we have used triangular membership function because of its easiness and computational efficiency. We can also use Gaussian membership function.

We can categories it's as Low, Middle and high.

STEP:5 Combine the fuzzy values of different data sets in to a single table.

STEP:6 Count its row values and column values of fuzzy values data sets. i.e

Row Values: it is a valid value present in the row accept zero.

Column Values: it is a valid value present in the row accept zero.

STEP:7 Select the row which has maximum number of row values or contains at least 60% of count value. Count Value: Row values/ Total no of items

STEP:8 Select only those values that satisfy the step 5. This data set is important or essential data sets used for building fuzzy mining association rules. Discard the remaining data sets because they are not important for mining association rule.

STEP:9 Select the column which has more than 60% of count value. This column values plays an important role in making data mining association rules.

STEP:10 Apply data mining fuzzy association rule on the above important or useful data sets and Construct the association rules for all the large item set .there are three possible association rules.

IV. CONCLUSION

This algorithm or pseudo code plays an important role in the field of eliminate unwanted data sets and reduced computation data sets . We also can predict the result from large data sets very easily.

V. FUTURE SCOPE

For future work, we can predict the result of association rule without applying the Data Mining association algorithm based on the fuzzy classification technique. There will be possibility to improve or upgrade this algorithm.

VI. APPENDIX

Appendixes, if needed, appear before the acknowledgment.

VII. ACKNOWLEDGMENT

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Asha Miri is student of M Tech final year student in Dr C V raman University from computer science and engineering departments. She is completed her bachelor of engineering in Dr C V raman University, kota bilaspur. Working in the area of web Technology,Data Mining and Fuzzy logic. His research interests include application of Web Technologies, Data mining & Warehousing ,Fuzzy Logic and Cyber Security.



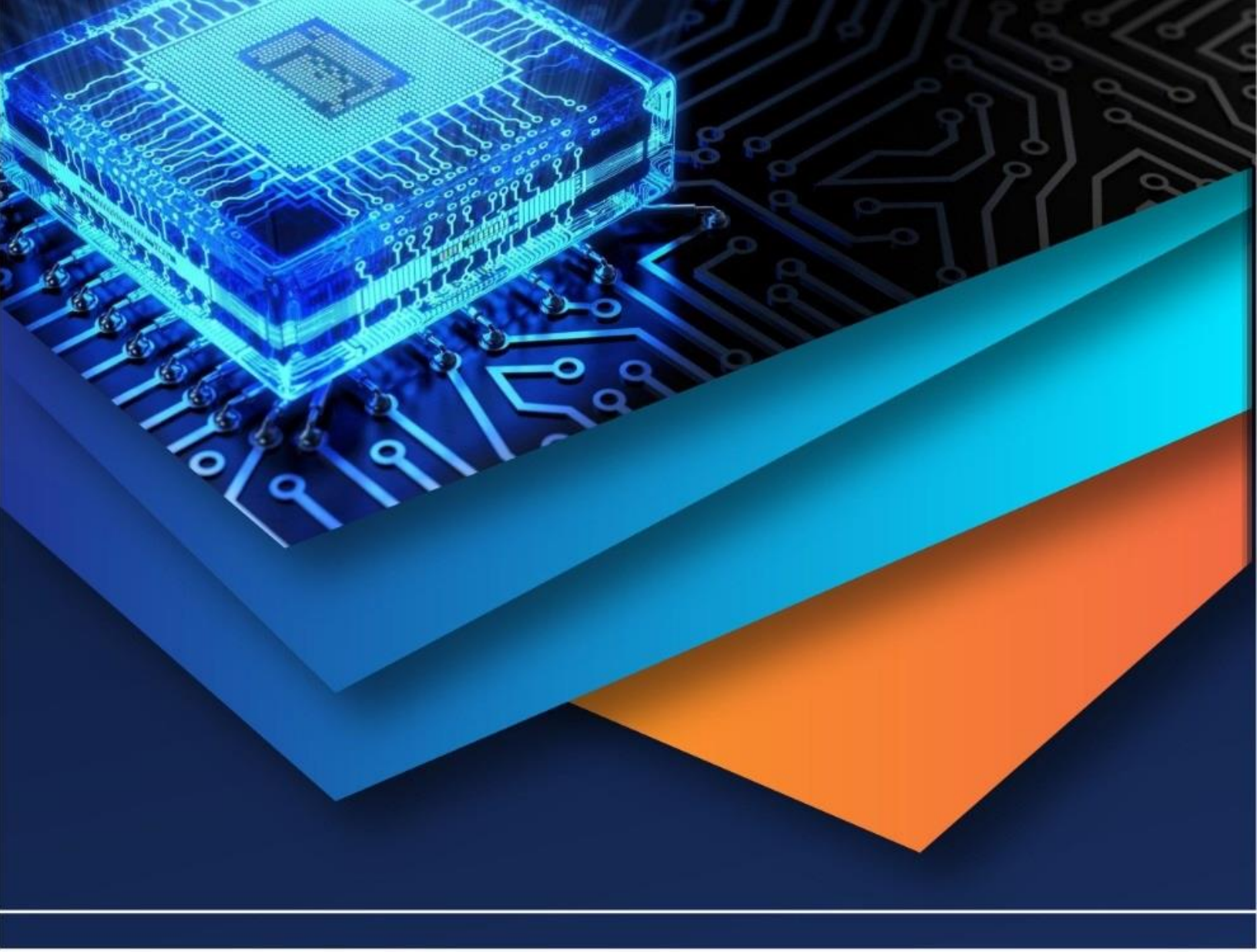
S.R. Tandan is currently Ph.D. scholar and Assistant Professor in the Department of Computer Science and Engineering, Dr. C.V. Raman University, Bilaspur, India. He received his B.E. degree in Computer Science and Engineering from the NIT, Raipur (formally known as Government Engineering College, Raipur) in 2006, and M. Tech degree in Computer Science from Birla Institute of Technology, Mesra Ranchi, India (JH) In 2009. His research interests include application of Artificial intelligence in robotics, Soft Computing, Dynamic path planning and Mobile robot cluttered environments, Mobile Computing.



Rohit Miri is currently Ph.D. scholar and H.O.D of Computer Science and Engineering and Information Technology Department, Dr. C.V. Raman University, Bilaspur, India. He received his B.E. degree in Computer Science and Engineering from the NIT, Raipur (formally known as Government Engineering College, Raipur) in 2004, and M. Tech degree in Computer Science from College of Engineering, Pune Maharashtra, India in 2008



Dr Priyanka Tripathi is working as an Associate Professor in the Department of Computer Application at National Institute of Technical Teachers Training and Research, Bhopal. She has also worked on various projects in Tata Consultancy Services. She has done MCA in Govt Engineering College Raipur. Ph.D from Maulana Azad National Institute of Technology, Bhopal. Working in the area of web Technology,networking, agile computing. Presented various paper in International Conferences at USA, Thailand etc. Also Chaired sessions in international conferences.



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