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A Survey Paper on Association Rule Mining using Fuzzy Logic

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***Abstract* - To study the Fuzzy Logic and Data mining Association rules from different journals. Our aim is to reduce large data sets to smaller data set by using or applying fuzzy logic association rules and also to forecast from large data set. Data plays important role in every field. Without it we can't programme anything. It means without any variable we can't performed any function or methods. We need data sets before doing the research work. Data must be real or actual data. We can integrate these two technologies i.e Data Mining and Fuzzy Logic**.

Keywords – Fuzzy Logic, Triangular Function and Data Mining

I. INTRODUCTION

Now a day's fuzzy logic and data mining plays an important role on the field of research. The past data tells the future result of forecast. If we have past data then we can find many interesting things. The interesting things may be pattern data, prediction of data or association dependence among attributes or data sets. Before we can build or develop algorithm the survey of literature is very important. The literature reviews tells the past research work and technology used. We can get idea to improve the past work or way to do research. So we are performing the survey of fuzzy mining association rules. We have using the two latest technology Data mining and Fuzzy Logic. Fuzzy Logic is used in the field of Engineering application in Washing Machine, Boiler Controller, Electrical controller and many other device controller. It is very important to read the published research paper before preparing the own research paper. We get the new or latest ideas in it. Some of the published research paper also provided the future work to the reader. Researcher gets the objective or aim of their research paper. Now a days every company or industries have their own database whether it is small, medium or large. From their data we can predict the future requirement or result. Data mining technics itself categorize in different ways i.e Classification techniques, clustering Techniques, association Rules, Time series data etc. where we dig out the interesting criteria from the huge database or data warehouse.

II. LITERATURE REVIEW

S.No.	Authors	Heading	Work Done	Technology Used	Future work /Drawback	Publication	Year

1.	J. Preethi	Temporal Outlier Detection using Fuzzy logic and Evolutionary Computation	She has done comparison of efficiency by using two technologies. First technology apply mining association rule by using genetic algorithm. The second technology used is fuzzy mining association rule. They compared both the technology and found that the accuracy or efficiency of fuzzy logic is more as compare to genetic algorithm.	Genetic and fuzzy based mining algorithm.	Data size increases the complexity of both the technology.	Proceedings of International Conference on Optical Imaging Sensor and Security, Coimbatore, Tamil Nadu, India, July 2-3, 2013	February 2013
2.	Jesús Alcalá-Fdez∗, Rafael Alcalá, María José Gacto, Francisco Herrera	Learning the membership function contexts for mining fuzzy association rules by using genetic algorithms	Authors are try to define the range or domain of linguistic variable of fuzzy logic by using genetic algorithm. It is based on the 2-tuples linguistic representation model i.e age and weight. allowing us to adjust the context associated to the linguistic term membership functions	Genetic and fuzzy based mining algorithm.	The learning scheme together with the 2-tuples linguistic representation model and the used fitness function offers a good mechanism to obtain MFs with a good trade-off between fuzzy supports and suitability, allowing us to mine out a larger number of interesting fuzzy association rules.	(Science Direct)	2008

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3.	Nandita Rane1, Madhuri Rao	Association Rule Mining on Type 2 Diabetes using FP-growth association rule	They used fuzzy mining association rule to early detection of diabetics. they used large data sets from medical center and perform data mining association rule on this data sets. The method not only can find direct factors but also find indirect factors that cause type 2 diabetes mellitus which may help health doctors to explore their data and understand the discovered rules better.	FP-growth association rule	----------	International Journal Of Engineering And Computer Science	August 2013
4.	Zaiuddin Shahid kammal Khaiuz Zaman Khan, Muham mad Ijaz Khan	Research on Association Rule Mining	Authors try to explore the application of fuzzy mining association rule. They explained the usefulness of important of association rule from last 15 years. Much research has been done on mining association rule. On the field of latest research it plays vital role for prediction of data set, association rule among the attributes. Uncertainty condition has been solved by using fuzzy association rule.	Fuzzy techniques	They describe the fuzzy mining association rule.	Advances in Computational Mathematics and its Applications (ACMA)	2012

5.	Jr-Shian Chen1□, Hung-Lieh Chou2,3, Ching-Hsue Cheng2, Jen-Ya Wang	CPDA Based Fuzzy Association Rules for Learning Achievement Mining	They defined the domain of fuzzy linguistic variable by using cumulative probability distribution approach (CPDA) by using mean and standard deviation.	Cumulative probability distribution approach (CPDA).	They uses the AprioriTid data mining association rule to find out the frequent item set by reducing large data set into smaller data set. They can improve their performance by using fast data mining association algorithm like TRApriori, HRApriori.	2009 International Conference on Machine Learning and Computing IPCSIT vol.3 (2011) © (2011) IACSIT Press, Singapore	2011
6.	E. Ramaraj, K Ramesh Kumar , N Venkatesan	A Better Performed Transaction Reduction Algorithm for Mining Frequent Item sets from large voluminous Database	They have proposed three mining association rule. i.e AprioriTID, TRApriori, HRA. They have reduces the time complexity of algorithm in efficient way. Among three the TRApriori is very fast data mining association algorithm.	AprioriTID , TRApriori, HRA	Authors of this paper suggested for its future work. For further efficiency we can use Eclat algorithm.	National Conference INDIACom	2008

7.	Tzung-Pei Hong, Chan-Sheng Kuo, Shyue-Liang Wang	A fuzzy AprioriTid mining algorithm with reduced computational time	In this paper , the authors are concentrated on reduced computational time by using fuzzy mining association rule .	AprioriTid and Fuzzy Logic	Now a days, there are fast data mining association rule are available. They uses triangular membership function. They assume the range of the linguistic variable. There will be some mathematical calculation.	Science Direct	2004

III. CONCLUSION

In this paper we have presented the literature review in the field of fuzzy mining association rules using different technology and found that still we can predict the result from large data sets. Some of the paper presented strong logic for the same. Many papers have given their future work to improve the performance of their paper. We can also reduce the large data set to smaller set from the past research work. From the above survey paper we can predict the early diabetes of the person.

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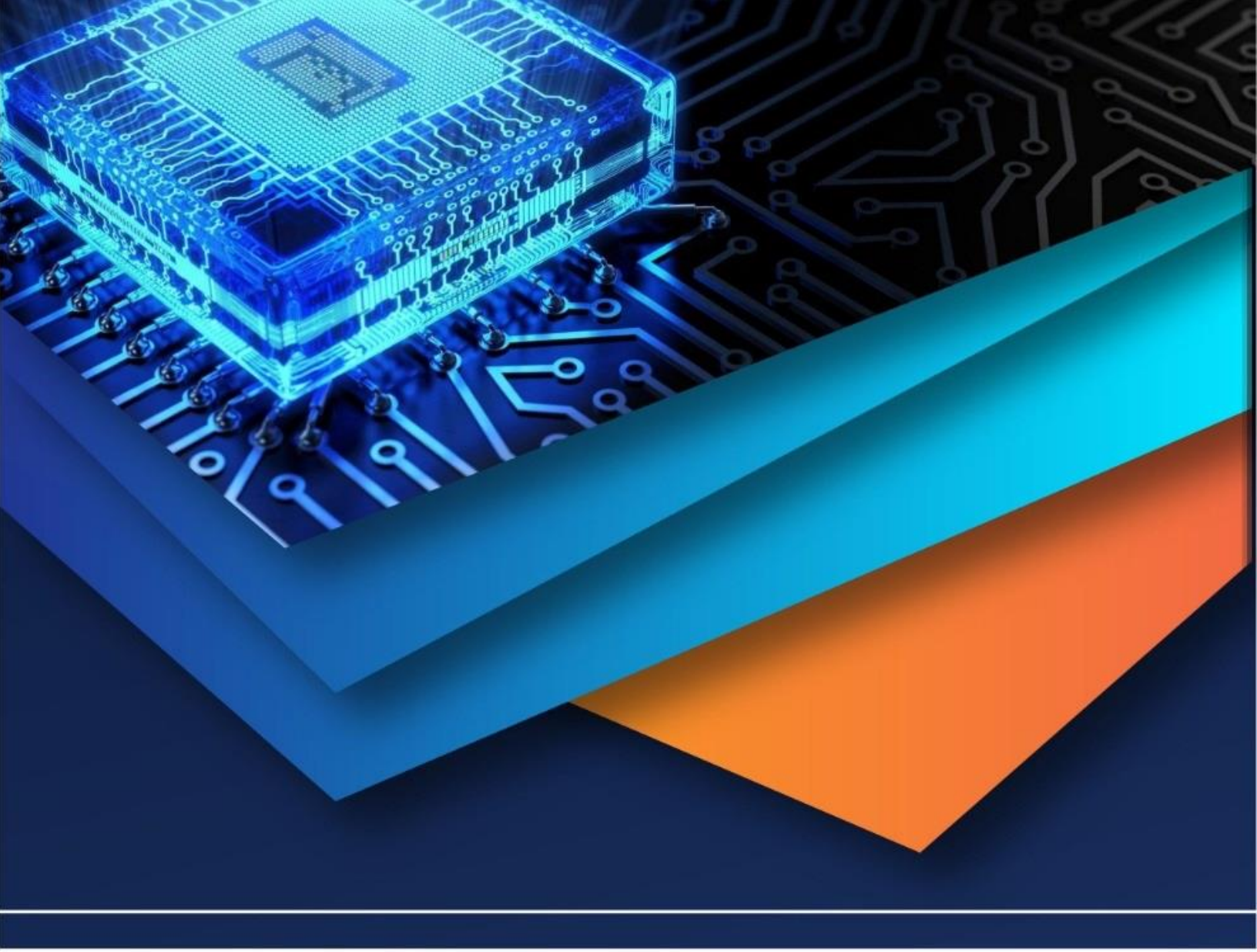

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