An Effective application and analysis method based on User's Profiles in Elective Subjects

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Abstract- *Every educational institute generates huge bulky data related to all the students getting education from the institute. Though much data produced may be worthless, the institute can use some valuable information to provide better education. Data mining can be employed for such purposes so that key knowledge can be extracted for future use. Difficulty arises for the engineering students when they reach the final year. They are made to choose electives as their subjects. Students may know nothing about what the knowledge the subject represent for. This may create choice for them as the electives have considerable values in the grading system too and if the student fails to choose the appropriate elective then it may affect the final grades. To eliminate this trouble, a beneficial system is planned to develop using fuzzy logic system(FLS). The main objective is to help the pupils select the right our electives in their final year of engineering and data mining concepts would be useful to gain key information about the students on the basis of which the proper elective can be pointed out.*

Keywords- Final Grades, Fuzzy Logic System.

I. INTRODUCTION

Information from the transcripts of students are analyze, and using this information relationship is conducted between the respective courses and their elective subjects taken previously by the student. Rules are extracted with the help of data mining techniques and an elective subject suggestion system is implemented by using fuzzy logic. Successful results are obtained from the test; it is observed that the students successful from the respective courses are also successful in the related elective ones. It will be very productive and user friendly Application. To develop an android application for elective subject selection for students.

The purpose of this application is to guide students for final year elective subjects' election of all branches. Developing the web portal from which tests questionnaires can be updated and previous results can be updated. (Visible to teachers). Information from the transcripts of students are analyzed, and using this information a relationship is conducted between the respective courses and their elective subjects taken previously by the student. Rules are extracted with the help of data mining techniques and an elective subject suggestion system is implemented by using fuzzy logic. Successful results are obtained from the test, it is observed that The students successful from the respective courses are also successful in the related elective ones. Motivation of this project is we have to choose elective subject with the help of college marks and university marks .In this project students easily find out his elective subject with the help of android application which is based on fuzzy logic. Using fuzzy logic imitates the way of decision making in humans that involves all intermediate possibilities between digital values YES and NO.

The fuzzy logic works on the levels of possibilities of input to achieve the definite output. It can be implemented in systems with various sizes and capabilities ranging from small micro-controllers to large, networked, workstation-based control systems. It can be implemented in hardware, software, or a combination of both.

II. LITERATURE REVIEW

There are number of studies done on determining course suggestion system using various techniques. M. Fatih Adak, Nejat Yumusak, Harun Taskin mention that Undergraduate curriculum of nearly all of the programs in a university include selective courses, as well as the required ones, offered in an elective course group and to be taken by the student. However, many of the universities in Turkey do not have an advisory system, especially in the undergraduate level, to guide the student about the elective courses compatible with their field of study, their career path and their capability.

Kalpesh Adhatrao and Aditya Gaykar ,in their study , An educational institution needs to have an approximate prior knowledge of enrolled student to predict their performance in future academics. This helps them to identify promising students and also provides them an opportunity to pay attention to and improve those who would probably get lower grades. As solution, they developed a system which can predict the performance Computer Engineering students from

their previous performances using concepts of data mining techniques under Classification

Harvinder Chauhan suggested decision tree algorithm for the classification of courses in elective subjects. Data classification is a form of data analysis that can be used to extract models describing important data classes. He told that there are many classification algorithms but decision tree is the most commonly used algorithm because of its ease of implementation and easier to understand compared to other classification algorithms. C4.5 is one of the most effective classification methods. Here using data mining tool publicly available datasets of different size. Insights into the rate of accuracy are also provided when a dataset contains noisy data, missing data and large amount of data. Data classification is one of data mining techniques used to extract models describing important data classes. Some of the common classification methods used in data mining is: decision tree classifiers, Bayesian classifiers, k nearest-neighbour classifiers, case-based reasoning, genetic algorithms, rough sets, and fuzzy logic techniques. Among these classification algorithms decision tree algorithms is the most commonly used because of it is easy to understand and cheap to implement. Most Decision tree algorithms can be implemented in both serial and parallel form while others can only be implemented in either serial or parallel form. Parallel implementation of decision tree algorithms is desirable in-order to ensure fast generation of results especially with the classification/prediction of large data sets, it also exploits the underlying computer architecture (Shafer et al, 1996).

Sunita B Aher suggested that course recommendation system in e-learning is a system that suggests the best combination of subjects in which the students are interested. It is proposed framework for recommendation of courses in the E-learning system. E-learning is the computer and network-enabled transfer of knowledge & skills. The basic idea is to find the best combination of subjects which will lead to more effective learning in a particular stream. It will also help to understand the behavior of the student that is in which subjects, students are more interested.

Janusz Sobecki and Jakub M. Tomczak mentioned that ACO is proved to be effective in solving many optimization problems, here we show that ACO also in the problem of prediction of final grades students receives on completing university courses is able to deliver good solutions. To apply ACO in any recommender system we need special problem representation in form of a graph, where each node represents a decision in the problem domain.

III. METHODOLOGY

A. Data Mining

Data mining is the process of discovering interesting knowledge, such as associations, patterns, changes, significant structures and anomalies, from large amounts of data stored in databases or data warehouses or other information repositories. It has been widely used in recent years due to the availability of huge amounts of data in electronic form, and there is a need for turning such data into useful information and knowledge for large applications. These applications are found in fields such as Artificial Intelligence, Machine Learning, Market Analysis, Statistics and Database Systems, Business Management and Decision Support.

B. Classification:

Classification is a data mining technique that maps data into predefined groups or classes. It is a supervised learning method which requires labeled training data to generate rules for classifying test data into predetermined groups or classes. It is a two-phase process. The first phase is the learning phase, where the training data is analyzed and classification rules are generated. The next phase is the classification, where test data is classified into classes according to the generated rules. Since classification algorithms require that classes be defined based on data attribute values, we had created an attribute “class” for every student, which can have a value of either “Pass” or “Fail”.

C. Fuzzy Logic:

Fuzzy Logic is a logic system for reasoning that is approximate rather than exact. The fundamental unit of a fuzzy logic is the fuzzy set. Given the universal set X in order to define a fuzzy set A on X, we define a membership function A: X -> [0,1] that maps element x of X into real numbers in [0,1].A(x) is interpreted as the degree to which x belongs to the fuzzy set A. We sometimes write fuzzy set A as {(x, A(x))| x □X}.

In classical set theory, a certain element either belongs or does not belong to a set. Fuzzy set theory, on the other hand, permits the gradual assessment of the membership of elements in relation to a set. Let U be a universe of discourse, representing a collection of objects denoted generically by u. A fuzzy set A in a universe of discourse U is characterized by a membership function μA which takes values in the interval [0, 1]. Where μA (u) = 0 means that u is definitely not a member of A and μA(u) = 1 means that u is definitely a member of A.

The main difference between classical set theory and fuzzy set theory is that the latter admits to partial set membership. A classical or crisp set, then, is a fuzzy set that restricts its membership values to {0, 1}, the endpoints of the unit interval.

IV. PROPOSED SYSTEM

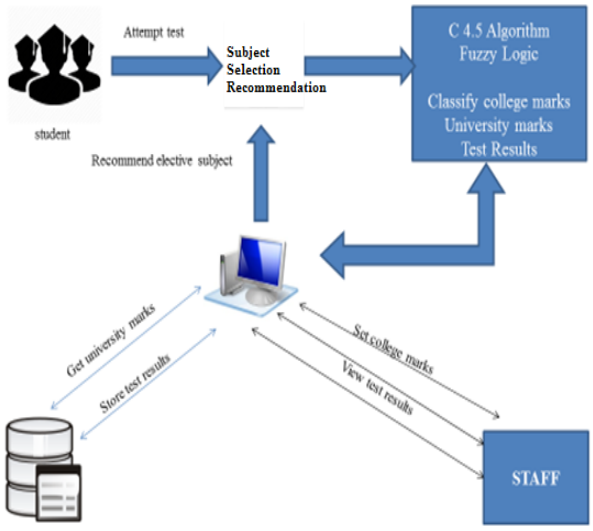

Figure 1. the batching of the products of size 17 response of the system

The figure above shows the proposed methodology for the paper. In this Proposed system calculates the result form different technique which is give accurate result to student for elective subject suggestion. Combination of every year of university result about each subject and also the staff suggestion or review about each subject which also provide the suggestion to student. There is preliminary test also conducted for basic knowledge base which provides successful results are obtained from the tests; it is observed that the students successful from the required courses are also successful in the related elective ones. The algorithm C4.5 and fuzzy logic which provide output result from calculation of all there possibility which give accurate suggestion to student.

V. CONCLUSION

In this paper we have empirically studied the fuzzy logic decision tree model for software cost estimation. The result shows that combining fuzzy logic and the decision tree model improves greatly the accuracy of estimates. In our system, we found that proper utilization of pruning confidence factor and fuzziness control threshold has shown an increase of estimation accuracy. Therefore, several values for the models parameters like subject test result, college last year result as well as university result must be evaluated when building fuzzy decision tree for software cost estimation to find appropriate elective subject for the study in college.

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