PERFORMANCE BASED PLACEMENT PREDICTION SYSTEM

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ABSTRACT

Data mining methods has its broad research in the field of education. The overall goal of data mining is to extract data from a dataset and transform it into useful structure for further use. the Placement of students is one of the very important Role in educational institutions. We propose a TPO management system to predict eligible candidate for campus drive. The objective is to analyze previous year's student's historical data and predict placement eligibility of the current students and the percentage placement chance of the institution. We used Decision tree C4.5 Algorithm. Decision tree C4.5 algorithms are applied on Company's previous year data & current requirement to generate the model and this model can be useful to predict the students' eligibility in various companies. according to company eligibility criteria we will send the notification to those candidate who are eligible for that campus drive. here we check the eligibility of candidate on basis of percentage & technology .This will help students to identify the category of company in which they are eligible and prepare accordingly in a an efficient manner.

Keyword: - *Prediction, Data Mining, TPO,C4.5,*

1. INTRODUCTION

Students studying in final or third year of an Engineering college start feeling the pressure of the placement season with so much of placements activities happening around them. They feel the need to know where they stand and how they can improve their chances of getting job. The Placement Office plays a important role in this. The students are given vital information on how to prepare themselves for the placement season by the TPO.
In previous study Placement Prediction System which will predicts the probability of a undergrad student getting placed in an IT company by applying the machine learning model of k-nearest neighbors' classification. We also compare the results of the same against the results obtained from other models like Logistic Regression and Support vector machine.
Here we have to design TPO management system. The eligibility criteria of students in various companies is more important and this can be realize by this model. This will help everyone as beginning from students they will prepare for companies in advance. the objective of TPO management system is send campus interview notification to those candidate who are eligible for that. For this we will consider the academic history of the student like percentage as well as their skill set like, programming skills, communication skills, analytical skills and team work, which are tested by the hiring companies during the recruitment process. We use Decision tree C4.5 algorithms are applied on Company's previous year data and current requirement to generate the model and this model can be used to predict the students' eligibility in various companies.

1.1 Motivation

Every year There are a large number of companies visiting any institute for campus placement. For improving the success factor of placement, the factors should be known so that the eligibility can be checked. which companies the

student is not required to study is not known to students at an early stage. The proposed model is developed to predict the eligibility of student for placement so to prepare for only those companies for which the student will actually be eligible for. Eligible candidate will get notification massage about campus drive.in notification TPO will mansion all technology related information, how to prepare for company aptitude test as well as technical round. This system is helpful for TPO to sort out eligible candidate.

1.2 Background

Data mining methods has its broad research in the field of education, medical, security. In education filed it has tremendous amount of research already been done. This huge growth is due to the great contribution to career of students and improve their performance as well as the pattern of system various scientists work in this area to explore existing systems and improve this for performance monitoring. Few of the related works are listed down to have a better understanding of what should be carried on in the past for further growth.

2. LITERATURE SURVEY

Sr. No	Paper name	Techniques	Advantages & Disadvantages
1.	**Application of Data Mining in Predicting Placement of Students:**	1) K-means Nearest neighbor clustering algorithm. 2) C4.5 decision tree algorithm is used for Data mining technique.	**Advantages:** analyze the placement details of the students at the time of campus Drive to predict the total eligibility. **Disadvantages:** we can't consider the overall placements of all the branches of the university and try to compile it with data of other universities.
2.	**Data Mining Approach For Predicting Student and Institution's Placement Percentage:**	Classification techniques are: 1) Naive Bayes algorithm 2) C4.5 decision tree algorithm 3) Support vector machine 4) artificial neural network	**Advantages:** It used for exploring the unique types of data in college. **Disadvantages:** The drawback is, we will consider particular branch data at a time.
3.	**PPS - Placement Prediction System using Logistic Regression:**	1) Logistic regression used for prediction of student get placed. 2) Gradient descent algorithm 3) Describing placement data from academic.	**Advantages:** The predictive model predicts the future outcomes of each student in future sessions of job placement. **Disadvantages:** The accuracy of the model is of average level with this give college data.
4.	**PREDICTING STUDENT PERFORMANCE USING DATA MINING CLASSIFICATION TECHNIQUES:**	1) Apriori Algorithm 2) Naïve Beyes. 3) Support Vector machine algorithm.	**Advantages:** We work to identify those students which needed special attention to reduce fail ratio and taking necessary action for the future career. **Disadvantages:** Here we consider student attribute to

			analyse performance.
5.	**Predicting the Performance of Students in Higher Education Using Data Mining Classification Algorithms - A Case Study:**	Classification techniques:- 1) Bayesian classification 2) neural networks 3) fuzzy logic 4) decision tree classifiers are J48, NBTree, ID3, CART, REPTree, Simplecart, BFTree.	**Advantages:** We know the academic status of the students in advance and can concentrate on weak students to improve their academic results. **Disadvantages:** it has become a vital need for the academic institutions to improve the quality of education.
6.	**Predicting and Analysis of Student Performance Using Decision Tree Technique:**	1) C4.5 decision tree algorithm 2) K-mean algorithm for clustering most relevant information.	**Advantages:** It used to improving tools for analysis student performance. **Disadvantages:** Not proper analysis techniques for measuring the student performance.
7.	**Predicting Student Placement Class using Data Mining:**	Classification techniques are:- 1) J48, 2) SimpleCart, 3) Kstar, 4) SMO, 5) Naive Bayes, 6) OneR.	**Advantages:** we can use data mining to help predict the classification of student data. **Disadvantages:** Predicting student placement class manually by teachers is a difficult tasks.
8.	**Detailed Routing Violation Prediction During Placement Using Machine Learning:**	1) large-scaled integration techniques. 2) Real detailed routing violation prediction Technique.	**Advantages:** We used machine learning based method that predicts the shorts that are a major component of detailed routing violations. **Disadvantages:** We will not predictions as a guide during the placement process and proposing moves that can resolve the predicted violations to reduce the number of shorts happening in detailed routing stage.
9.	**Application of Data Mining Techniques to Predict Students Placement in to Departments:**	Classification techniques:- 1) Random forest 2) Naïve bayes Decision tree:- 1) J48	**Advantages:** We used three classification methods on students' data for better result. **Disadvantages:** This model take more time to predict result. time complexity is more.
10	**Student Placement**	1) ID3 algorithm used for	**Advantages:**

.	**Prediction Using ID3 Algorithm:**	decision making.	This used for classification and prediction of student's placement in a engineering college. **Disadvantages:** This model not used neural network algorithm, genetic algorithms.
11.	**Prediction of Campus Placement Using Data Mining Algorithm-Fuzzy logic and K nearest neighbor:**	1) K-nearest neighbour Classification. 2) Fuzzy logic.	**Advantages:** It improve the student's performance, a work has been analysed and predicted using the algorithms Fuzzy logic and the KNN algorithm **Disadvantages** Fuzzy logic and KNN algorithm is mostly work on integer value. hard to classify string type data.
12.	**Mining Educational Data for Students' Placement Prediction using Sum of Difference Method:**	Techniques are:- 1. Decision trees, 2. Multilayer Perceptron, 3. Neural networks, 4. Bayesian Network, 5. Support vector regression and 6. Naive Bayes Simple algorithm	**Advantages:** Here Sum of difference method has been used to achieve the goal and extract the patterns from the given dataset. **Disadvantages** We applying clustering techniques on integer value.
13.	**Generating Placement Intelligence in Higher Education Using Data Mining:**	1. WEKA tools 2. K-mean used for clustering 3. J-48 algorithm is used for decision tree. 4. Segmentation of student data.	**Advantages:** The data is taken from an engineering institute for this study. Predict result on academic basis. **Disadvantages:** the results the university or college can decide to conducting workshops.
14.	**STUDENT PREDICTION SYSTEM FOR PLACEMENT TRAINING USING FUZZY INFERENCE SYSTEM:**	1. Fuzzy Inference System 2. MATLAB tool box.	**Advantages:** easily predicts and analyses lot of student data set for predefined classes by using fuzzy logic. **Disadvantages:** studies are required to investigate new hybrid models of fuzzy classification algorithms to improve the performance of prediction system.
15.	**Results and Placement Analysis and Prediction using Data Mining and Dashboard:**	1. ID3 algorithm know as Iterative Dichotomies 2. C4.5 algorithm	**Advantages:** provide an efficient single point management system which will give all the data of the students of the college at the same place. **Disadvantages:** This system could address a wide range of problems by distilling data

			from any combination of education records maintenance system.
16.	**Survey of Student Performance and Placement Prediction System:**	1. FP-growth algorithm 2. Sequential Pattern mining algorithm 3. J-48 algorithm	**Advantages:** This system can be used in various colleges and institutes for overall growth. **Disadvantages:** This system is work on previous record not consider current academic record.
17.	**A Model for Predicting the Eligibility for Placement of Students Using Data Mining Technique:**	Fuzzy Rules., Classification technique 1. Support vector machine, 2. naive bayes , 3. C4.5	**Advantages:** It used to predict the eligibility of student for placement so to prepare for only those companies for which the student will actually be eligible for. **Disadvantages:** Need to improved to a great extent using this prediction model in all institutions.
18.	**A Placement Prediction System Using K-Nearest Neighbors Classifier:**	1. K-Nearest Neighbors, 2. Logistic Regression, 3. SVM	**Advantages:** It used to Predicting the placement of a student gives an idea to the Placement Office as well as the student on where they stand. **Disadvantages:** This system not take diff data of different streams of engineering.

Chart -1 LiteraturebSurvey

3. SYSTEM DEVELOPMENT

Here we have designed Placement Prediction System, in which the eligibility criteria of students in various companies is more important and this can be realized by this model. This will help everyone as beginning from students, they will prepare for IT companies in advance. The objective of Placement Prediction System is to let students identify whether they are eligible for the company drive or not and also sends the notification for the same. By using this system TPO will share all company related information with eligible student via this system. System or TPO will consider the academic history of the student like percentage as well as their skill set like, programming skills, communication skills, analytical skills and team work, which are tested by the hiring companies during the recruitment process. We used Decision tree C4.5 algorithm on Company's current requirement to generate result. - This model can be useful to predict the students' eligibility in various companies. Based on the student scores in matriculation, senior secondary, subjects in various semesters of technical education. The objective is to analyze Student's skills, current Drive requirement to predict placement chance of the current students and the percentage placement chance of the institutes.

3.1 System Modules

Our System consist of 3 main modules namely:

1.STUDENT
2.TPO
3.COMPANY

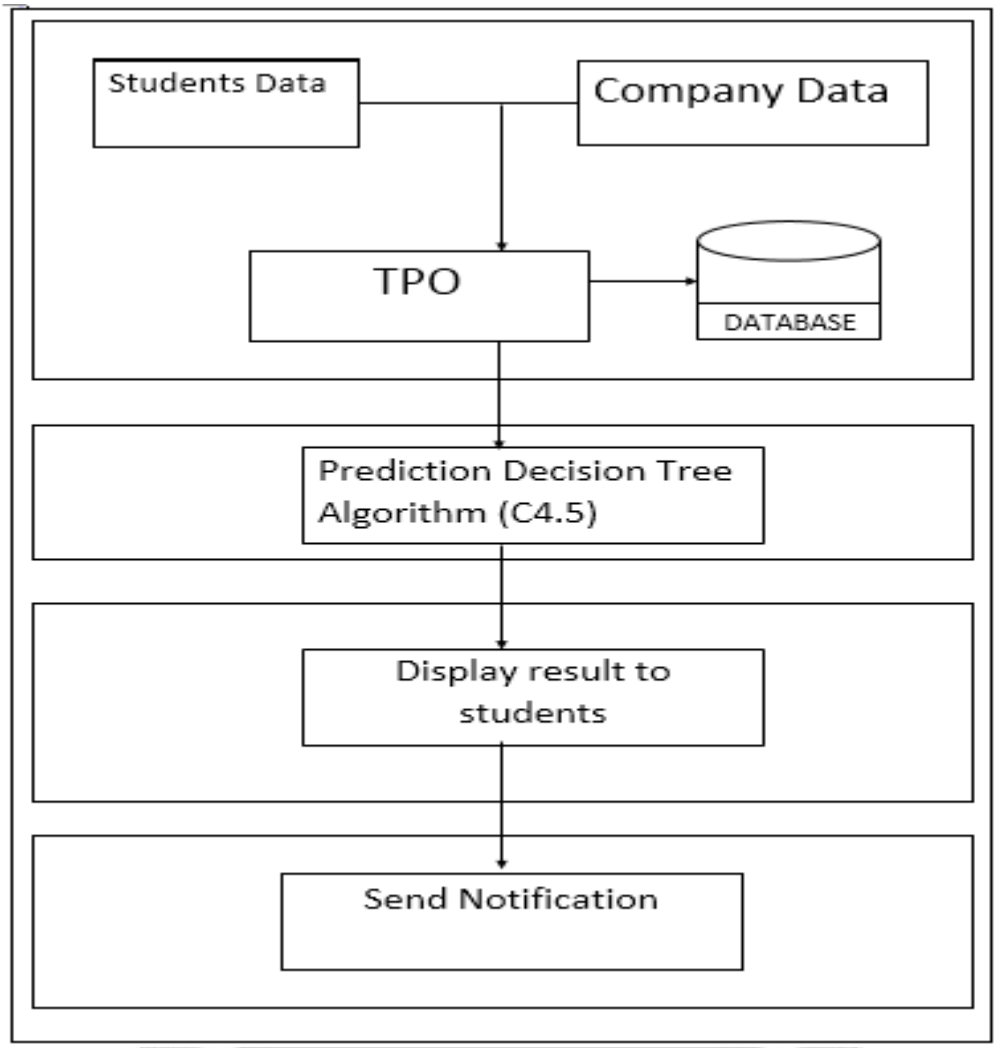

Fig -1: System Architecture

Student Module:

Through this module Students will be able to login with provided credentials.First student has to register in the system by providing educational details.Student can view available opportunities for him after login.The percentage here signifies his chances of getting placed in that company.

Company Module:

Through this module company will be able to add job opportunities to the system. Company can register first by providing specific details about it. They can update their profile by setting proper logo of companies.Companies can view how many students have applied to a particular job posted by them from list of jobs. Companies can send notfications to students.

TPO Module:

TPO is a mediator who can control both the ends that are company and student. TPO allows companies to post a .job. TPO can send notifications to eligible students.TPO can view how many companies have posted jobs and how many students have applied to particular job

3.2 Working Algorithm

C4.5 Algorithm:

C4.5 is an algorithm used to generate decision tree The decision tree generated by C4.5 can be used for classification ,and for the reason, C4.5 is often to referred to as a statically classifier. algorithm C4.5 build decision tree from a set of training data by using concept of entropy. At each node of the tree, C4.5 choose the attribute of data that most effectively splits its set of samples into subsets enriched in one class or the other.The splitting criterion is the normalized information gain. The attribute with the highest normalized information gain is chosen to make the decision. The C4.5 algorithm then recurs on the smaller sub-lists.

4. Result

Fig -2:Login Page Screenshot

Fig -3: Student module result

4. CONCLUSIONS

We have developed a TPO management system to predict eligible candidate for campus interview. The objective is to analyze previous year's student's historical data and predict placement chance of the current students and the percentage placement chance of the institution. We used Decision tree C4.5 Algorithm. Decision tree C4.5 algorithms are applied on Company's previous year data & current requirement to generate the model and this model can be used to predict the students' eligibility in various companies. according to company eligibility criteria we will send the notification to those candidate who are eligible for that campus interview. here we check the eligibility of candidate on basis of percentage & technology .This will help students to identify the category of company in which they are eligible and prepare accordingly in a an efficient manner.

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