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Students Placement Prediction using Machine Learning

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Abstract: ***Placement of students is one of the most important objective of an educational institution. Reputation and yearly admissions of an institution invariably depend on the placements it provides it students with. Institutions make great efforts to achieve placements for their students .This will always be helpful to the institution. The objective is to predict the students getting placed for the current year by analyzing the data collected from previous years students. This model is proposed with an algorithm to predict the same. The data has been collected by the institution for which prediction is going to be done and by applying suitable data pre-processing techniques. This model is prepared by using Logistic Regression algorithm. This algorithm independently predict the results and we then compare the efficiency of the algorithm, which is based on the dataset. This model will helps the placement cell to focus on the potential students and help them to improve their technical and social skills.***
Keywords: Placement Prediction, Logistic Regression, Dataset, Machine Learning, Accuracy, Probability.

I. INTRODUCTION

Every college put their efforts for Placements which is very important for each and every student. The achievement of the college is known by the number of students getting recruited in their Institutions. Every student takes admission to the colleges by going through the history of placements in the college. The main approach of the project is collect the historical data of pervious years students from institution and find the probability of current year students getting placed. This model helps the college to improve their campus placements. In students placements Prediction model ,it predicts the probability of a student getting placed or not.

This is done by using Logistic Regression as the algorithm. This model is design to predict whether a particular student getting placed or not in campus recruitment .To check the prediction the data collected from student are percentage, arrears , cgpa and their domain knowledge.

II. LITERATURE SURVEY

Sr.No	Paper name	Authors	Technique	Advantages & Disadvantages
1	Placement Prediction Decision Support System Using Data Mining.	JoshitaGoyal, Shilpa Sharma	naïve bayes and improved naïve bayes algorithm	Advantages: It used for exploring the unique types of data in college. Disadvantages: It makes assumptions on the data provided, for any two independent features which are given for the output class
2	Adaptive Model For Campus Placement Prediction Using Improved Decision Tree	Subitha Sivakumar, Rajalakshmi Selvaraj	Improved Decision Tree algorithm	Advantages: For segregating the eligible students for campus selection based on academic performance measures Disadvantages: A small change in the data can cause a large change in the structure decision tree causing instability.
3	A Data Mining Model To Improve Placement".	Ravi Tiwari And Awadesh Kumar Sharma	1)Fuzzy Logic K Nearest 2)Neighbor Classification algorithms	Advantages: It improve the student's performance, a work has been analyzed 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.

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4	Predicting Student's Campus Placement Probability using Binary Logistic Regression	D. Satish Kumar, Zailan Bin Siri, D.S. Rao, S. Anusha	Logistic Regression Algorithm	Advantages: Predicts based on the individual performances of the students at the time of interview. Disadvantages: when the academic performance is a bit low student are not selected which is unfair.

III.PROBLEM STATEMENT

The placement prediction model considers only academic performances of the students so that the prediction of the student getting placed or not can be done. We cannot consider the placement of students just by their academic performances because some students may be good at aptitude, technical and communication skills due to their low score in their academic that may tend to be their drawback. For predicting the placement of a Student needs parameters like cgpa, logical and technical skills Academic performances may be important but the model is design to predict the placements based on the parameters of the students.

IV.EXISTING SYSTEMS

The present system generally consider academic performances as a single parameter to judge whether a student can be placed or not during the campus placements. generally the parameter used to judge the capability of the student, performance in the academics during the first three years of engineering .Academic performance is not only important for getting selected in an interview but also depends on the awareness of student during the aptitude tests and interviews. For calculating the probability of a student getting placed by some data mining algorithms, sometimes gives a probability of more than 100% which is not feasible and denotes a wrong interpretation to the student .Negative probability is shown from certain algorithms which gives an wrong interpretation to the student. Academic performance is not only the parameter for judging the student. But other parameters like aptitude and technical knowledge should be also considered in order to determine the outcome for the student's future.

V. METHODOLOGY

1) Algorithm: Logistic Regression

Logistic Regression is a one the Machine Learning algorithm which is used for the problems classification, it is a predictive analysis algorithm and based on the concept of probability. For predicting a value based on history of data, it is necessary to train the prediction model. In our case, we choose logistic model as a predictor system so we shall be training logistic model using dataset collected by the institution.Through Logistic Regression algorithm we are able to predict the probability of the students getting placed or not and display the result in terms of percentage .The data collected by the college is divided into training and testing dataset which is given to the model for training. This algorithm trains the model to predict the probability of the student getting placed by the training dataset provided.

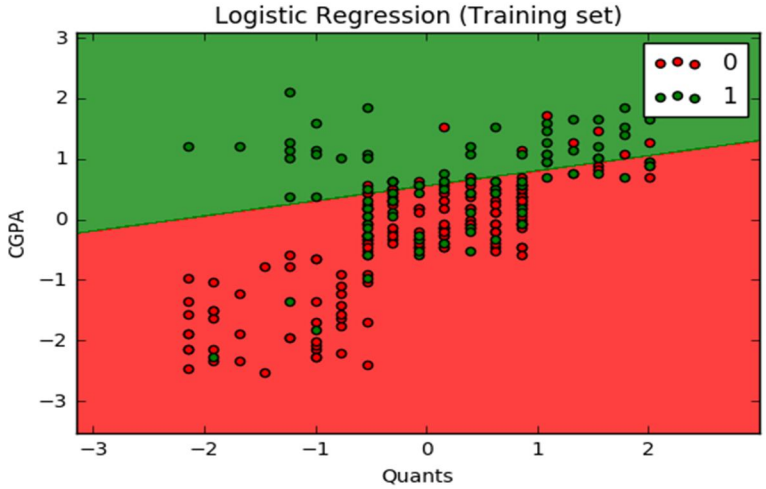


Fig 1 Graph for Training set

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The above graph shows the plot for the two of the parameters we have considered for the prediction .It gives the clear view about the number of should students getting placed or not by indicating 0 and 1. The decision boundary in the above graph specify the criteria for the students placement such as specifying the condition for the training model when the quants and cgpa of the students match then it places the data in that respective position as shown in the above graph .The graph is plotted by taking quants score and the average cgpa of the students when the model is given with this training set the graph plot as show above.

VI. PROPOSED SYSTEM

We have designed a models for checking prediction of student getting placed or not in a campus drive this model will help both student and institutions for preparing well in advance for campus recruitment. The main objective of this model is to know the capability of the student and where he stands by predicting the probability of getting placed. This also help the students and institutions to improve performance of the potential students. This model will consider the academic history of the student such as percentage as well as their skills like coding ability, verbal skills, technical skills and aptitude which are tested by companies.

We used logistic regression algorithm on the students data gathered from the institution of previous year. This model take scores of student in secondary education, average scores of all the semesters in the technical education till date and also some parameters which adds weightage to kick start the career.

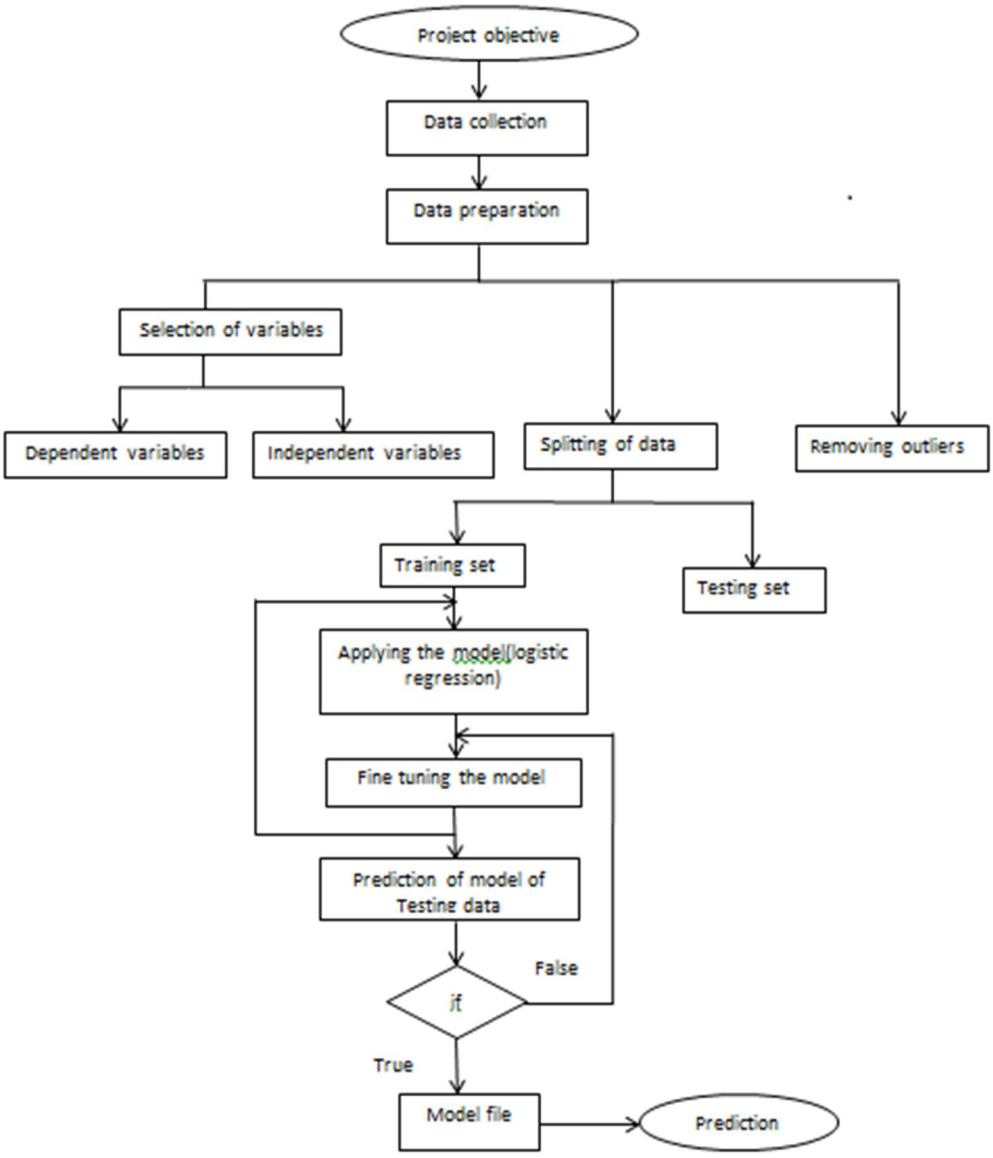


Fig 2 Flowchart of Proposed system

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Firstly the project object is designed and the data is collected by the college, after collecting the data we prepare the data into training and testing datasets. The data so formed is separated into dependent variables and independent variables then the outliers are removed.

1) The training data is provided to the model design for the training results
2) The model is fine tuned and the training data is further classified according to the parameters specified to the model
3) After the training data is ready the testing dataset which was stored earlier is further processed to the model for the prediction.
4) If the testing values comes out to be true the values are finally set as the prediction
5) If the testing values comes out to be false than the values are again sent back for the fine tuning of the model.

VII. RESULTS

The proposed system results in the probability of the students getting placed in the campus drives. The 'STUDENTS PLACEMENT PREDICTION USING MACHINE LEARNING' provides the help for both students and the institution .The institution can focus on the potential students by knowing the prediction of this model. The technique we used is the logistic regression which gives the accuracy of students getting placed . The project mainly gives the information about the students probability of getting placed in the campus drives which benefits both the students and the institution.

VIII. CONCLUSION

We propose a model to predict the percentage of student getting placed. We have design this model by analyzing the data collected from the institution of previous years students. We used Logistic Regression Algorithm. Logistic Regression algorithm is applied on previous year data & current students data to predict the student getting placed in various companies. here we check the eligibility of candidate on basis of percentage & other technical knowledge .This will help students and institution to improve performance of the potential students.

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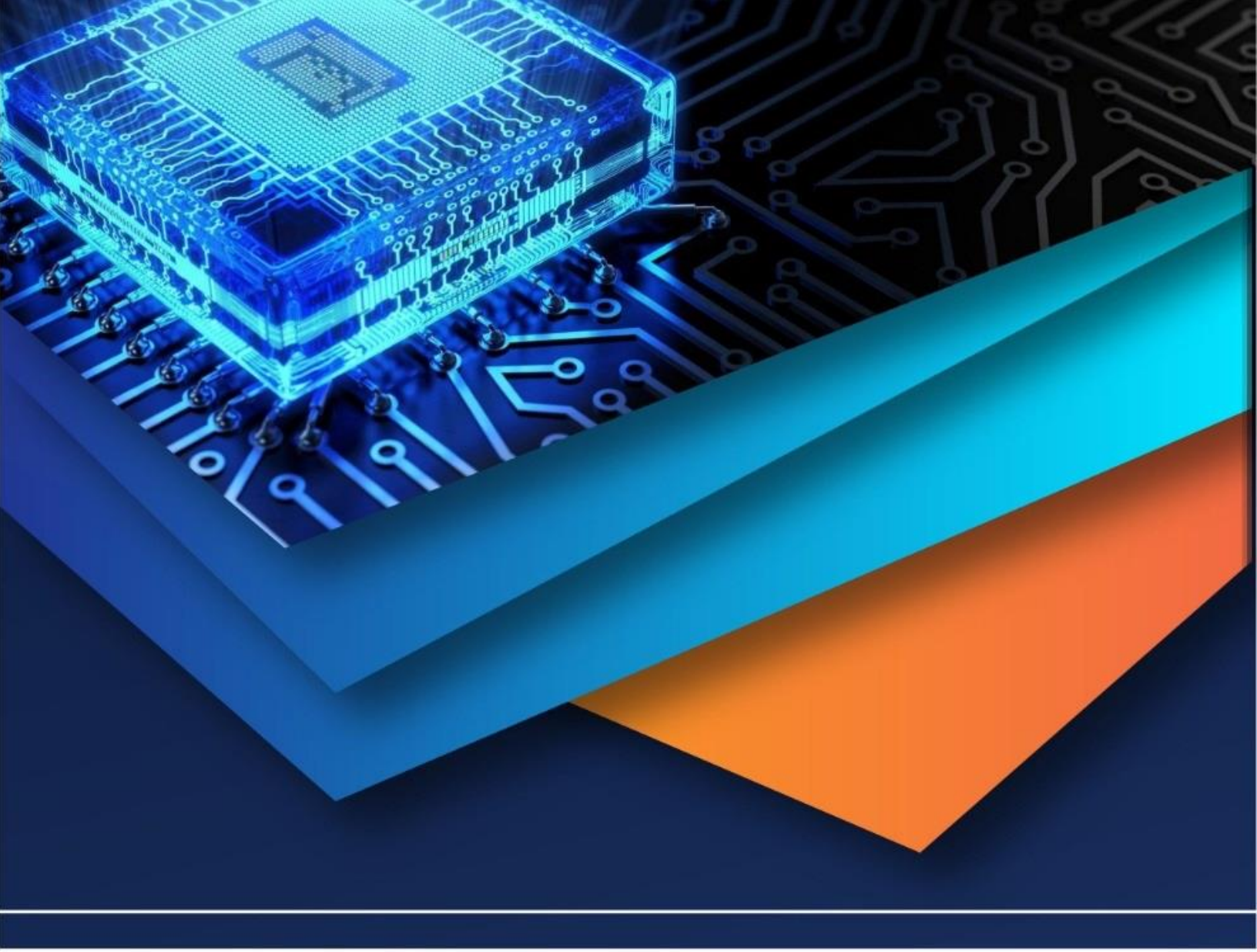
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