Student Marks Prediction Using Linear Regresion

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Abstract – This study examines how machine learning applications affect teaching and learning in higher education, as well as how to improve the learning environment. Students' interest in online and digital courses grew significantly, and websites like Course Era, Udemy, and others became increasingly important. We use innovative machine learning applications in teaching and learning while taking into account the students' background, previous academic performance, and other factors. Because of the enormous class numbers, it would be impossible to support each individual student in each open learning course, which could raise the dropout rate at the conclusion. In this study, we use linear regression, a machine learning algorithm, to predict outcomes.

Keywords – Classification Prediction, Machine Learning, Data Cleaning, Data Processing, Linear Regression

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1. INTRODUCTION

This research looks at how machine learning applications effect higher education teaching and learning, as well as how to improve the learning environment. Data can be anything related to population, academic data of students, and interests of people. New data appears from time to time, as we can see.. Analysing the data is the difficult task for humans. So here comes the computer, which can analyse data faster than people because it is stored digitally and in a well-formatted manner. This is where the machine learning emerged. Machine learning is the branch of Artificial Intelligence that provides ability to automatically learn from past experiences. Here the machines do get programmed explicitly. It gives the computer the power to make humans and machines look alike in terms of learning, as the name implies. Machine learning is divided into two categories based on the nature of the learning signal: supervised learning and unsupervised learning. This study focuses on supervised learning, more specifically on predictive analysis. When it comes to making predictions about future outcomes, predictive analysis is crucial. Predictive analysis has a wide range of applications. Predicting a student's academic success is critical since it can alert professors to students who may drop out of the course, and it can provide valuable information. Additional help to the scholars who want to enhance their educational performance. This have a look at is

on implementation of system mastering in education. The outcome of this study is to predict student's academic performance. Students' data is utilised to create a model that can predict a student's academic achievement based on some background information. The dataset created by the students should be used as the study's input data.

2. LITERATURE REVIEW

I have alluded to several research articles that are related to the thesis in order to specify the thesis as a well-structured thought. Conclusion information of few of the papers are as follows. This research study describes how the linear regression approach issued in predicting student's academic performance**.**

1. In this studies paper creator carried out the thesis the usage of SVM technique in java, selection tree, C4.5, Naive Bayes, Lib. SVM, Logistic Regression and Hybrid technique LMT and as compared the accuracy of overall performance prediction most of the hybrid approaches. I have alluded to several research articles that are related to the thesis in order to specify the thesis as a well-structured thought.

2. In this studies paper it's far discovered that the writer used a number of the maximum

famous algorithms and regression algorithms. The experiment was conducted with administrative data from the University of Polo, which included 700 courses. The article concludes that decision Trees and SVM produce the best results. The main contribution of this work is to compare the levels of accuracy of several algorithms.

3. The studies is targeted on predicting student's overall performance the usage of personalised analytics. This paper presents two different approaches to work on the thesis. The author's initial technique is the Regression Algorithm, which is a data mining function. The root mean square method is also used to calculate the regression algorithm's error rate. In this paper the author worked on how to improve the prediction algorithms which are used to analyze and predict the student's performance. The decision trees algorithm is used in this paper's work.

4. This paper proposed the student Academic performance prediction using Support Vector Machine. The author compared SVM to various machine learning approaches such as linear regression, Decision Trees, and KNN and determined that SVM outperformed them.

3. METHODOLOGY

The principal step within side the implementation is to gather the statistics set required for the studies work. The technique is carried out to the dataset containing the statistics of the students. To simplify our analysis, we can identify the data set's unique attributes and delete them because they can't be used for analysis. The data is collected and then translated into the desired format.

This process is called as pre-processing of data. It is the most crucial stage in obtaining the specific necessary info from the raw data. The higher the accuracy rate, the better. The more raw data is preprocessed, the higher the rate accuracy of acceptable data. After pre-processing the data, the following step is to detect and eliminate any incomplete or irrelevant data from the dataset in order to achieve correct findings. Data cleaning is the process of removing unnecessary data. For improved classification, we can use any of the techniques available, such as linear regression, support vector machine, Naive Bayes Standard Classification, and decision tree algorithms. In this research, the linear regression algorithm is used to implement the solution. We must also select a training set from the dataset, determine the Result attributes that determine the output, and begin classification.
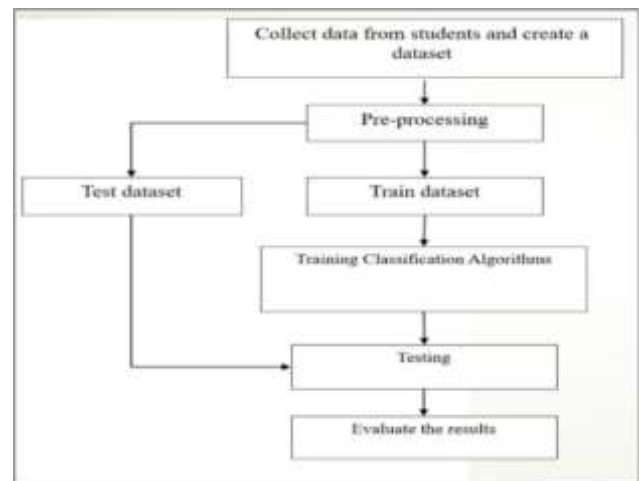
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