

EARLY PREDICTION OF ACADEMIC PERFORMANCE USING MACHINE LEARNING APPROACH

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Abstract

Predicting Students performance heretofore can be extremely helpful for educational institutions to improve their instructing quality. This paper proposes to predict students performance by thinking about their scholarly subtleties. Educational associations are extraordinary and assume utmost significant job for the improvement of any country. As Education changes the lives of people, families, networks, social orders, nations and at last the world! This is the reason we live agreeable lives today. Presently a day's training isn't restricted to just the homeroom instructing however it goes past that like Online Education System, Web-based Education System, Seminars, Workshops, MOOC course turns into It's all the more testing to Predict understudy's performance in view of the colossal main part of information put away in the conditions of Educational databases, Learning Management databases. Students' performance can be assessed with the assistance of different accessible techniques. It is advancing territory of concentrate that accentuation on different strategies like characterization, prediction, include determination. It is utilized on learning records or information identified with training to predict the students' performance and learning conduct by extricating the hidden knowledge.

Keywords: —College Education, Machine Learning, Result Prediction, supervised learning.

1. Introduction

Today every educational institution handles and deals with large amount of student data which can be beneficial for a number of reasons. One of the important application of such data is predicting student performance. Such a prediction can be useful not only for the students but also for teachers/mentors. Mentors can provide special assistance to the students who are on the verge of failing. In order to determine which category a student lies, such data can be quite helpful. This application can be used by any prominent school or colleges. It can be used to predict the pointer ranges

or percentage range for future semester exams. These ranges can be predicted using a number of data mining algorithms such as classification algorithms, rule-based algorithms, ensemble methods, and neural networks. The main aim of this project is the selection of features that show a strong relationship with a target attribute that is to be predicted from a high dimensional data-set. We have evaluated and compared the number of algorithms such as decision tree, random forest, support vector

machine, naive Bayes and neural networks by applying them on the data-set. The rest of the paper provides an explanation on nature of neural networks along with the results of our evaluation. Machine learning is used for analyzing data based on past experience and predicting future performance. Reinforcement machine learning algorithms is a branch of artificial intelligence. It automatically determines the behaviour of environment and maximizes its performance.

1.1 Motivation

We will be focusing on the improvement of Prediction classification techniques which are used to analyze the skill expertise based on their academic performance by the scope of knowledge. Measuring student performance using classification technique such as decision tree. The task can be processed based on the several attributes to predict the performance of the student activity respectively.

1.2 Problem Statement

In any form of higher education it is necessary to predict a student's academic performance. There are two reasons for this: it is essential to identify which set of students would do well in semester end examination so that they can be awarded scholarships and more importantly to identify the students who may fail in semester end examinations viewed by user. The current system is maintaining academics records manually. Manual maintenance of records involves burden and it is quite tedious task. In general existing system there is no security.

2. Related Work

In the [1] work, author has used DT and BN classes of MLAs for predicting the undergraduate and post graduate results of two universities in Thailand. The total number of student records used for this prediction is 20492 and 932 respectively. Algorithms used for this prediction are C4.5, MSP and Naive Bayes. They concluded that for all classes of predictions DT yields better results than BN by 3 to 12 percent. Re sampling was used to improve the prediction accuracy.

In the [2] work, Kotsiantis et al [4] described a model to predict student results for a distance learning course in Hellenic Open University. Predictions were done on the basis of marks

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