

# Student Higher Study Willingness and his Score Prediction using Machine Learning

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**Abstract** - This paper explains concept of predicting the performance score of student in an institute which help institute to be top on performance levels. The aim of this study was to evaluate Student Higher Study Willingness and his Score Prediction using Machine Learning. This study shows that there are significant different ways to benefit from machine learning application in education area

**Key Words:** Higher Studies, Machine Learning, Prediction, Willingness, Performance

## 1. INTRODUCTION

To solve this management, machine learning overcome this problem and provides a systematic approach. The supreme benefit of machine learning is that it can learn from experience automatically. The algorithm or function of machine learning remains similar to its different applications. Computer understands the data and make an innovative algorithm which makes algorithm more effective i.e, make accurate decision according to the data. These data is numeric in nature and can be processed by computer. These algorithm makes innovate and effective information which is called learning data. The algorithm or rules can modify by itself automatically through learning data. So, it is an automatic process.

Machine Learning is used to make exact decisions based on observations and predictions. Machine Learning examines the areas of algorithms that can make high-end predictions on data. The learning process in Machine Learning is classified into Training and Testing. If the model is to be built, the training data has to be utilized and this model will also be validated using testing data.

### 1.1 Process

Now a days, the major issue in the higher education institution is that management of bulk data and use that data to increase the performance of the students. These institutions have interest in the success of the students. In lifetime teaching, higher education institutions have a large data amount of student data which is already stored in their databases. Storage is not the problem but make it in a systematic manner and use it in an efficient results is the biggest problem. For higher education institutions, there are many tasks which has to in use in a effective manner. These student tasks are grading process, retention power, testing, prediction tasks as well as administrative tasks. So, main aim of higher institution is to monitor and improve the student's performance.

## 2. LITERATURE REVIEW

**C'edric Beaulac, Jeffrey S. Rosenthal (2019) [1]** concluded that ideally, the algorithm would consider splitting on the grade variables for a certain department only to classify students who took courses in that department. Developing a new decision tree algorithm where new variables are added to the pool of potential split variables depending on previous partitioning should be a great way to improve the actual model in certain scenarios. Overall, implementing a new tree-building procedure where variable are added or discarded based upon previous partitioning and considering a multi-label classifier like suggested by Chen & al. (2003) could be great improvements for future work on that data set.

**Sandra W. Pyke\* & Peter M. Sheridan\* [2]** concluded that the results of this investigation suggest that curriculum choices (most importantly, decisions regarding the implementation of optional program formats), selection procedures (especially of students applying for admission to part-time studies) and rigorous attempts at securing adequate financial resources for students be given careful consideration by individual programs as well as by the university 62 Sandra W. Pyke & Peter M. Sheridan administration. Supervisors and university guidance personnel would be well advised to consider some of the present findings when dealing directly with the graduate student population.

**PhD. Miftar Ramosacaj, Prof. Dr. Vjollca Hasani & Prof. Dr. Alba Dumi [3]** We conclude from the study that the level of student performance is affected from high school results and outperform those who have a higher valuation. So we should pay

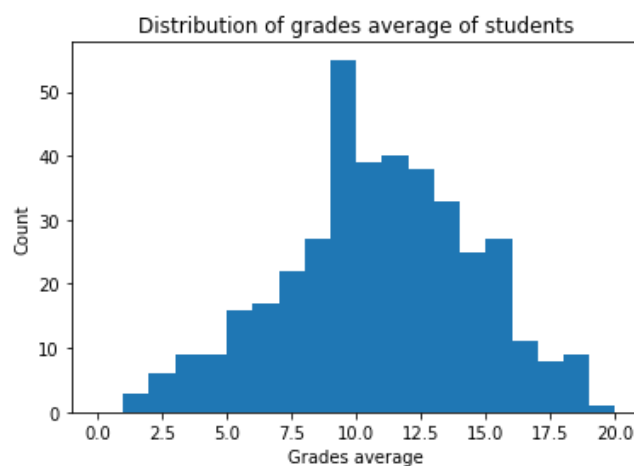
specific attention to increasing the level of performance since in high school. Continuous improvement of socio-economic conditions of students, and the creation of non-stressful conditions are important contributing factors in increasing student performance.

Deepti Aggarwal, Sonu Mittal & Vikram Bali (2019) [4] conclude that the two classifiers, Multi-layer perceptron and Random Forest prove to be the most appropriate classifiers for predicting student’s performance.

### METHODOLOGY USED IN PRESENT WORK

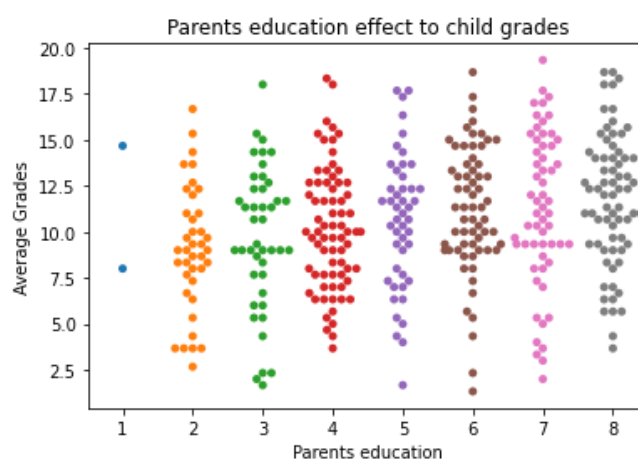
I am going to take the training data set as student dataset from kaggle website. There will be two different data sets, containing different types of information. These data sets will be in tabular format, where each row represents a student and each column, or variable, contains certain information about a student, such as age, gender, family background or medical information.

### Distribution of grades average of students



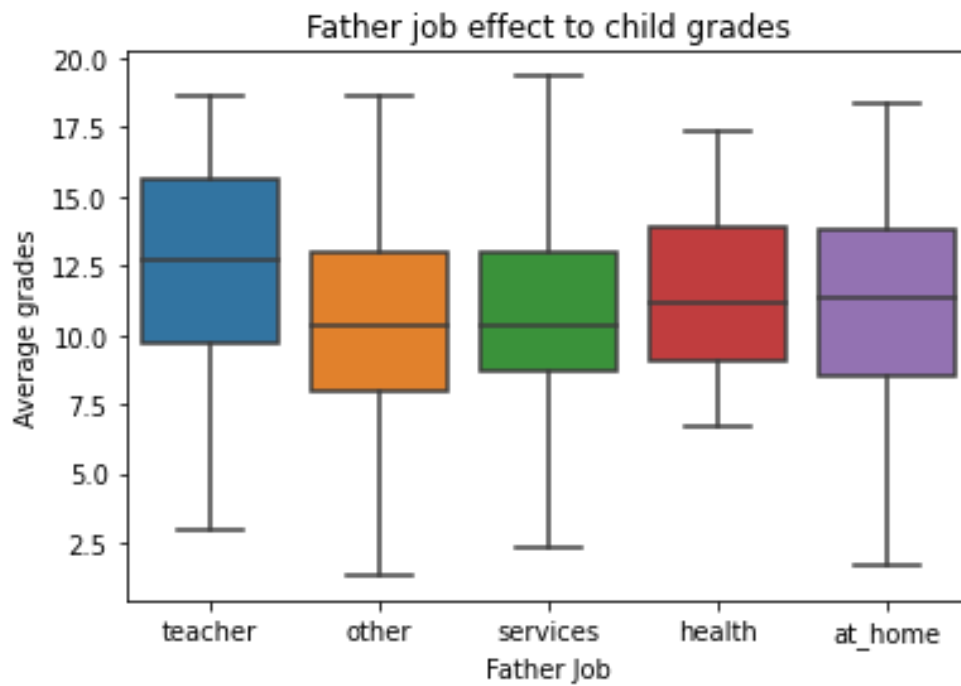
This graph describes that there is increase in the number of students as increase in the average grades till 10.0 and decrease in the number of students as increase in the average grades till 20.0

### Parents education effect to child grades



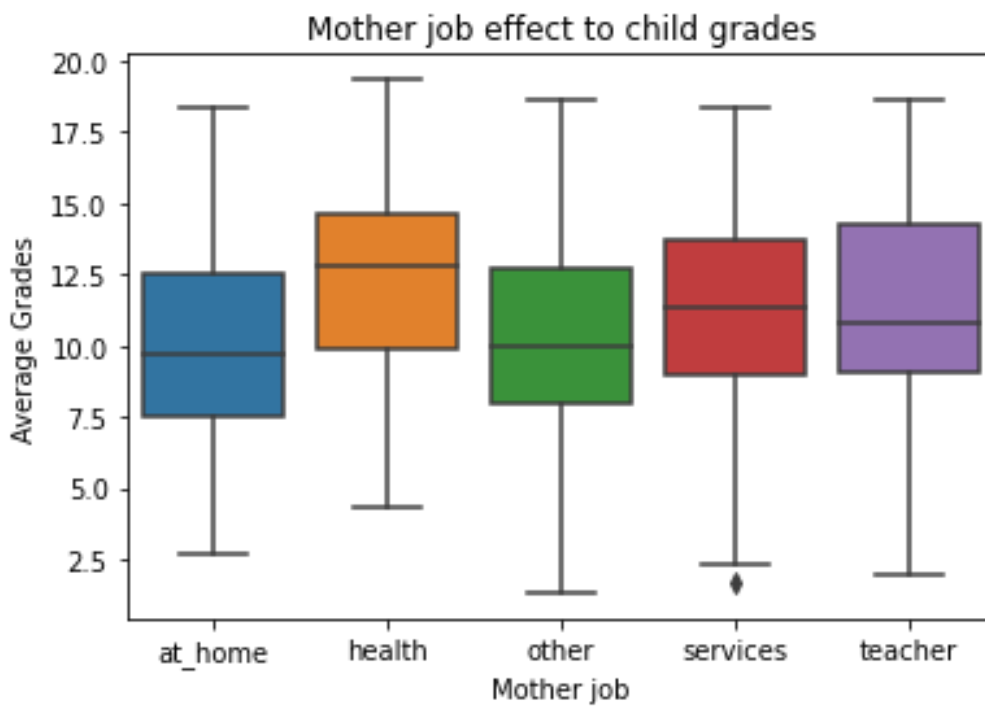
This graph describes that there is increase in qualification of parents as increase in the average grades.

### Father job effect to child grades



This graph describes that there is variation in average grades regarding father's occupation.

### Mother job effect to child grades



This graph describes that there is variation in average grades regarding mother's occupation.

### 3. CONCLUSIONS

The aim of this study was to evaluate Student Higher Study Willingness and his Score Prediction using Machine Learning. This study shows that there are significant different ways to benefit from machine learning application in education area. As we stated in introduction section, one of our goals was try to classify studies in the field of machine learning application in education area. Based on our survey, the paper describes that how machine learning can predict the student score or performance by student traits.

Our findings are:

The student whose parent is more qualified has more average grades. The student whose father is teacher is more average grades than others. The student whose mother is doctor is more average grades than others.

Future scope:

In the future, we plan to implement own machine learning model for suggesting potential student to enrol or not to enrol on higher education based on different parameters. As we have rich database with lot of information of students on previous years, we believe that study would be of help to support our admission office as help in student enrolment process

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