BEHAVIOUR ANALYSIS OF STUDENTS IN ONLINE EXAMINATION USING MACHINE LEARING

S.Deepika,

Assistant professor, Department of B.Com Business Analytics,

PSGR Krishnammal College for Women,Coimbatore,India

deepika@psgrkcw.ac.in

S. Divya Bharathi,

UG scholar, Department of B.Com (Business Analytics)

PSGR Krishnammal College for Women,Coimbatore,India

divyalathass03@gmail.com

ABSTRACT:

Logistic Regression is commonly applied to all sort of tasks and any property of the input can be a feature. It involves a more probabilistic view of classification. This paper aims at analysing the student behaviour to check whether there is a malpractice or not on online examination by the environment of the student to ensure that they gain knowledge only through their hard work and not by cheating on examination. The testing environment of the student must be silent but due to pandemic, student education has come to become a question mark. Technologies have made sure that the education of students must continue even though there is pandemic going on. As a result of solving the situation, online examination is the solution. When the student attend exams on online sitting in their home. There are sounds that they can't control like traffic, children playing. This analysis will help to check the student's background noises that should be and should not be in the testing environment.

KEYWORDS: Logistic Regression, Analysis, Background Noises.

INTRODUCTION:

Analysing the data is the process of inspecting, transforming, analysing data sets to get insights from the data to make a prediction or decision making using the machine learning algorithm. For that we used a tool "Jupyter Notebook".Jupyter supports over 40 programming languages, including Python, R, Julia, and Scale.Here, Python is used to analyse the background noise of the student using online dataset and is used to predict whether the student is malpractice or not.Comparing with the traditional way of learning, online way is not as good as traditional way. The learning behaviour is a series of actions that learners produce during the learning process, including reading books, answering questions, watching videos, viewing courseware, discussing and communicating with others, and so on.The ability to predict a student's performance could be useful in a great number of different ways associated with university-level distance learning. Students' key demographic characteristics and their marks on a few written assignments can constitute the training set for a supervised machine learning algorithm.Compared with the traditional offline learning analysis, because online learning behaviour analysis can obtain various recorded data of learners' online learning, instead of obtaining subjectively strong data through questionnaires, it is more objective. The learning behaviour is a series of actions that learners produce during the learning process, including reading books, answering questions, watching videos, viewing courseware, discussing and communicating with others, and so on [2].To keep track of the actions/behaviours of students, two potential approaches can be taken: surveys and quizzes. However, these two approaches are inconvenient, and lack objectiveness, since the people might not remember what they did exactly. Il-Hyun Jo et al. believe that a systematic understanding of each learner's educational needs is required, and they prepared customized instructional strategies and customized content by collecting, analyzing, and systematizing learners' data [7].

II. LITERATURE REVIEW

AI is everywhere can be designed as the ability of computer systems to behave in ways that we would think of as essentially human. AI systems are designed to interact with the planet through capabilities, like speech recognition, and intelligent behaviours, like assessing a situation and taking sensible actions towards a goal [3].

Furthermore, they cause performances: sitting and concentrating in classroom, sitting but not concentrating in classroom, and standing and prepared to go away the classroom. [1]

Machine learning is a computer based learning that imitate human learning by using a learning algorithm of machine learning to predict the result. The computer can read the actual situation in order to decide effectively. Prediction of the result will be decided by the new data. [4]

The idea of creating intelligent machines and artificial intelligence (AI) has been around for centuries. During the last 25 years AI has made a progress which also made an impact on education. Critical voices have been raised against the over-optimism in contemporary AI research. [6]

Artificial Intelligence can imitate human for performing various tasks that are thinking and learning, solve problems and make decisions. [5].

III. METHODOLOGY:

The most used machine learning algorithms are

- Logistic regression
- Naïve bays
- Linear regression
- Polynomial regression

Among those algorithms, logistic regression is the simple method for analysing. It provides a great means modeling binary as well as multiple class response variable dependence on one or more independent variable.

Logistic regression shows the probability. It is one of the simplest algorithm that can be used for various classification problems.It involves

- Testing and training the data
- Assign the variables for train test split
- Apply the coding to perform logistic regression
- Calculate the accuracy score

LOGISTIC REGRESSION

Logistic regression is a multivariate analysis when the variable is dichotomous. Like all regression analyses, the logistic regression may be a predictive analysis. The nature of the task may be dichotomous, which leads to only two possible classes.

- Uploading data
- Create a data set
- Create a logistic regression
- Analyze the result

IV. RESULT

Figure 1:-Plotting of Background Noise
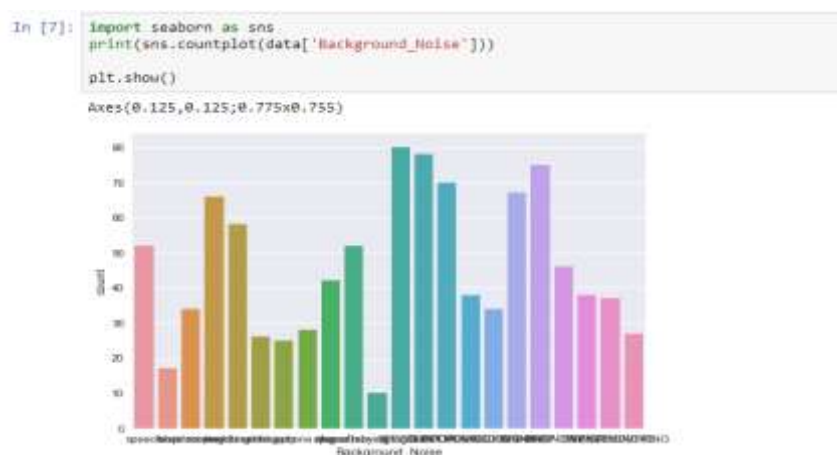
Represent the plotting made for the Background Noise by imported seaborn package. The graph helps to the count or times that the candidate has Background Noise. The X axis in the graph shows us the Background Noise. The Y axis in the graph shows the count. It shows that the number of times noises came upto range of 80 on different background noises.

Figure 2:-Predicted Accuracy Score

It is understood that the subject students attended and the count of background noise while they were writing is analysed through this algorithm. The accuracy score (0.4766) which is calculated to 47% show the percentage of malpractice. This accurate score shows that out of 100% , majority of the students tried to attempt malpractice.

Figure 3:-Displaying the result of chair moving

Report shows the students attempt for the malpractice in an online proctored examination. The different sections report the student's id, the no of attempts of malpractice and the reason for the attempt. Mostly the number of attempts counts is either 1 or 2.

V. CONCLUSION

In this paper, Jupyter notebook is used to analyse the online examination data using logistic regression algorithm. The main intention of this paper is to help the teachers to make sure that their students does not cheat even though they are in home. Malpractices done by students is analysed using the machine learning algorithm called logistic regression. The analysis has resulted that the malpractices done by students can be find out using technical development but compared to traditional system of examination, online examination is way easier to cheat than the traditional way, it also affects the student knowledge and it reduces the interest towards learning.

VI.FURTHER WORK

This work can be further extended by using artificial intelligence on online examination which helps the educational institutions and the teachers to save their energy and time which gives more importance to the technological world.

REFERENCES:

[1] Zaletelj, J.; Košir, A. Predicting students' attention in the classroom from Kinect facial and body features. EURASIP J. Image Video Process. 2017, 2017, 80. [CrossRef].

[2] Ning Yan (Shanghai Open University, Shanghai, China) Oliver Tat-Sheung Au (Open University of Hong Kong, Kowloon, Hong Kong) Asian Association of Open Universities Journal ISSN: 2414-6994 Publication date: 2 December 2019.

[3] Luckin, R., Holmes, W., Griffiths, M. & Forcier, L. B. "Intelligence Unleashed: An Argument for AI in Education" (Pearson, 2016); http://go.nature.com/2jwF0zx.

[4] Yu, T.; Jo, I.; Lee, H.; Kim, Y. Relations between Student Online Learning Behavior and Academic Achievement in Higher Education: A Learning Analytics Approach; Springer: Berlin, Germany, 2014.

[5] S. Janpla and P. Wanapiron., "System Framework for an Intelligent Question Bank and Examination System" . International Journal of Machine Learning and Computing, Vol. 8, No. 5, October 2018.

[6] Niklas Humble, Peter Mozelius "Artificial Intelligence in Education -a Promise, a Threat or a Hype?" October 2019 DOI: 10.34190/ECIAIR.19.005 Conference: European Conference on the Impact of Artificial Intelligence and Robotics At: Oxford, UK Mid SwedenUniversity.

[7] Y. Zhang, D. K. Robinson, A. L. Porter, D. Zhu, G. Zhang, and J. Lu, "Technology roadmapping for competitive technical intelligence," Technological Forecasting and Social Change, vol. 110, pp. 175–186, 2016.