ABSTRACT

MACHINE LEARNING TECHNIQUE FOR RECOGNISING THE LOAN ELIGIBILITY

In today's fast-moving lifestyle, where everyone wants to complete their work hassle-free and quickly get a loan, it becomes a complicated task as every person has to wait in a long queue to have their loan sanctioned by financial institutions. The loan must be provided to an eligible person and verified through all the required criteria to be satisfied to get a loan. This research aims to find a way in which a person will be sanctioned a credit. This study was conducted to determine the best technique that can provide a way to reduce the manual analysis of prediction, which takes a lot of time and is also expensive. Due to such a long queue, a lot of time and resource wastage occurs during the loan sanctioning process. To help the Banking institution and the client obtain the eligibility analysis immediately.

The study aims to help a bank or financial institution that wishes to fast-track the lending qualifying procedure using data gathered from online applicants submitted by the customer. Furthermore, this research aimed to ease the eligibility analysis process. Several machine learning algorithms were used and compared to produce a result that will help develop a proper solution for loan eligibility analysis. The raw data, using data pre-processing, has been distributed into two different categories, using one as a training set and the other as a testing set. The algorithms used in this research are Decision Tree, KNN Classifier, Logistic Regression, and Random Forest. After the Dataset implementation on the above-listed algorithms, the comparison of all the accuracy produced by the algorithms is made, after which it was concluded that the Random Forest algorithm has the highest accuracy, which can be used for the eligibility analysis process. Further, to improve the accuracy produced by Random Forest, the Grid Search CV algorithm is used that makes use of the Hyper Parameter Tuning method, which will choose only the essential parameter from the dataset and will remove the non-essential content, which will lead toward the increment of the accuracy produced by the Random Forest algorithm.

Through this research, it was concluded that implementing a method that will help both banking institutions and clients in fast-tracking the loan eligibility analysis process will help reduce the waste of time and resources for both clients and banking institutions. At the same time, it still preserves the accuracy of the eligibility process.

Keywords: Loan-Eligibility, Machine Learning, Random Forest Classifier, Logistic Regression, KNN Classifier, Decision Tree Classifier.

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