

SMART LENDER - APPLICANT CREDITIBILITY PREDICTION FOR LOAN APPROVAL

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LITERATURE SURVEY

INTRODUCTION:

Modernized loan prediction system is based on Machine Learning approach where we can find out whether the loan will pass or not. This system requires data from the users like loan duration, monthly income, loan amount, monthly income etc. According to the parameters provided, the bank decides whether the customer gets the loan or not.

Thus a classification system exist. In this system, a training set is used to create the model and the classifier will be able to categorise the data items into respective classes. In order to train the data and provide the correct outcome, which is the client's potential and ability to repay the loan, a test dataset is constructed.

For banks and customers alike, the prediction of a modernised loan approval system is quite helpful. This method evaluates each candidate based on their priority. The customer can submit their application directly to the bank, in which case the bank will handle the entire procedure without interference from a third party or stockholder. Finally, based on its priority system, the bank will determine if the candidate is deserving or not.

The sole goal of this is to ensure that the deserving candidate receives simple and rapid results.

DOMAIN:

A type of artificial intelligence called MACHINE LEARNING enables a software programme to learn from the data and improve the accuracy of its outcome predictions without the need for human involvement. Such a machine that automatically learns and predicts your data and scenario can be designed and developed with the aid of machine learning and deep learning.

The data concerning upcoming events is predicted using predictive analytics. In accordance with the kinds of challenges that are encountered, machine learning is frequently classified into numerous subcategories. Some ML type is as follows:

1) Supervised Learning:

Building an artificial system that can learn the relationship between the input and the output and anticipate the system's output given new inputs is the aim of supervised learning.

When a model is being trained on a labelled dataset, this process is known as supervised learning. Both the training and testing datasets in this type of learning are labelled. Prediction results usually come up as either 1 (yes) or 0 (No).

2) Unsupervised Learning:

Unsupervised learning uses input data that are neither labelled nor have any prior knowledge of the data. Here, the machine's job is to use cluster analysis to extract the hidden pattern from the data.

We adopted a supervised learning strategy in our work because the dataset is labelled

ALGORITHMS USED FOR PREDICTION:

We had used four Machine Learning algorithms which are used to find out the correct prediction of Data set.

(a) XGBoost:

A decision tree-based open source software library is XGBoost. It employs gradient boosting framework to implement machine learning algorithms. It runs on Windows, macOS, and Linux.

(b) Random Forest:

A classification system known as random forests creates a large number of decision trees, each of which has a higher predictive accuracy than the others. It combines the predictions of the estimators to produce a more accurate prediction.

(c) Decision Tree:

Decision tree split the dataset into smaller parts and then predict every possibility. The model is trained and tested on a set of data that contains the desired categorization.

(d) Logistic Regression:

To allocate observations to a certain set of instructions, a categorization set of criteria is utilised. Like other methods of regression analysis, logistic regression is a type of predictive analysis. Fundamentally, the purpose of logistic regression is to establish the link between a dependent binary variable and a nominal or other independent variable.

MERITS:

- The benefit of this system is that by establishing specific conditions and defining the algorithms, we can determine whether a client meets the eligibility requirements simply by evaluating the details.
- This system is created to forecast if a user's loan application will be granted by the bank based on inputs from the user such as salary, address, loan amount, and loan term.
- This helps the banks to minimize the possible losses and can increase the volume of credits.

DEMERITS:

- Instead of using machine learning techniques, they provided a mathematical model.
- Class inequality was not addressed, nor were the required actions taken.

CONCLUSION:

In order to eliminate human interference and boost productivity, the rapidly expanding IT sector of today needs to develop new technology and upgrade existing technology. It is abundantly obvious from the data analysis that it lessens all fraud committed at the time of loan acceptance. This application is operationally sound and complies with all banker specifications. This component is simple to plug into numerous other systems. It operates properly, satisfies all bankers' needs, and is interconnected with numerous other systems.

This prediction module can be enhanced and integrated more in the future. The system is trained using prior training data, but it is feasible to alter the software in the future so that it may accept new testing data as well as training data and predict as necessary.

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