

SMART LENDER - APPLICANT CREDIBILITY PREDICTION FOR LOAN APPROVAL

PROBLEM STATEMENT :

One of the challenging responsibilities for every bank is the forecast of loan defaulters. However, by predicting the loan defaulters, the banks will undoubtedly be able to cut their loss by decreasing their non-profit assets, allowing for the loss-free recovery of approved loans, which can act as a contributing factor to the bank statement. This highlights the significance of studying this loan approval forecast. This may be greatly mitigated by using data mining techniques like categorization and prediction. This creative prediction technique can determine if a borrower will be able to pay back the loan firm.

LITERATURE SURVEY :

1. Machine Learning Based Model for Prediction of Loan Approval

Banks are essential for managing finances and managing an economy. Loans are distributed by banks and other financial institutions, and for virtually all banks, they represent their principal activity. The loans that the banks disperse are what generate the profits. The main objective is to place their valuables in trustworthy hands. The capacity to assess risk while making decisions about client loan lending is essential to a bank's performance. Manually evaluating each customer's creditworthiness for loan approval is challenging, time-consuming, and dangerous. The banks strive to reduce the credit risks of defaulting as a result. In this study, logistic regression was used as a technique to estimate a borrower's eligibility for a loan.

2. Algorithm For the Loan Credibility Prediction System

Nowadays people approach or select bank loans to fulfill their needs, which are very common. This practice has been increasing day by day especially

for business, education, marriage, agriculture as well. But several people take advantage and misuse the facilities given by the bank. With technology developing at such a peak stage these days, data mining plays a key role in computer science to solve such issues. Classification is the most suitable predictive modeling technique in data mining to predict the loan repayment capability of a customer in a banking industry. There are various methods to improve the accuracy of a classification algorithm. The accuracy of random forest classification algorithms can be improved using Ensemble methods, Optimization techniques and Feature selection. Various feature selection methods are available. In this research work a novel hybrid feature selection algorithm using wrapper model and fisher score is introduced. The main objective of this paper is to prove that the new hybrid model produces better accuracy than the traditional random forest algorithm. This paper also compares the results obtained from other classification methods and feature selection methods to prove that the proposed algorithm produces better classification accuracy. The experiments were being done using tools such as weka, R, and python programming. This research aims at introducing a new technique which can increase the progress of the banking sector. The accuracy level of this new algorithm in finding the potential of the customer is much higher than the data mining classification algorithm and thus it proves to be very helpful for bank officers.

3. ACCURATE LOAN APPROVAL PREDICTION BASED ON MACHINE LEARNING APPROACH

Loan approval is a very important process for banking organizations. The Banking Industry always needs a more accurate predictive modeling system for many issues. Predicting credit defaulters is a difficult task for the banking industry. The system approves or rejects the loan applications. Recovery of loans is a major contributing parameter in the financial statements of a bank. It is very difficult to predict the possibility of payment of loan by the customer. Machine Learning (ML) techniques are very useful in predicting outcomes for large

amounts of data. In this paper three machine learning algorithms, Logistic Regression (LR), Decision Tree (DT) and Random Forest (RF) are applied to predict the loan approval of customers. The experimental results conclude that the accuracy of the Decision Tree machine learning algorithm is better as compared to Logistic Regression and Random Forest machine learning approaches.

4. Loan Approval Prediction based on Machine Learning Approach

With the enhancement in the banking sector lots of people are applying for bank loans but the bank has its limited assets which it has to grant to limited people only, so finding out to whom the loan can be granted which will be a safer option for the bank is a typical process. So in this paper we try to reduce this risk factor behind selecting the safe person so as to save lots of bank efforts and assets. This is done by mining the Big Data of the previous records of the people to whom the loan was granted before and on the basis of these records the machine was trained using the machine learning model which gives the most accurate result. The main objective of this paper is to predict whether assigning the loan to a particular person will be safe or not. This paper is divided into four sections (i)Data Collection (ii) Comparison of machine learning models on collected data (iii) Training of system on most promising model (iv) Testing

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