

SMART LENDER - APPLICANT CREDIBILITY PREDICTION FOR LOAN APPROVAL

Literature Survey

Abstract:

Taking out loans from banks has become very common in today's world. Banks' main business is lending money. The primary source of benefit is the interest on the loan. However, because the bank has limited funds to distribute to a limited number of people, determining who the loan can be given to and who would be a better choice for the bank is standard procedure. Credit firms issue a loan after a lengthy period of authentication and confirmation. They are also concerned about whether the borrower will be able to repay the loan without difficulty. Many researchers have been exploring systems for determining loan acceptance in recent years. Machine learning can bring an additional reliable predictive modeling method to the banking business, which is still needed. The primary aim of this paper is to determine if a loan granted to some organization or a specific person would be accepted.

Keywords: Classification, Exploratory Data Analysis, Loan, Loan Approval, Machine Learning, Prediction, Python.

AUTHOR : RAJIV KUMAR & VINOD JAIN

Abstract:

Banks are vital to financial management and controlling the economy of a country. Banks and financial institution distribute loans and these loans act as the core business part of almost every banks. The profits are earned from the loans distributed by the banks. The prime goal is to invest their assets in safe hands. The success of bank depends on the decisionmaking capability to evaluate risk of lending loan to the customer. Checking manually individual consumer's credibility for the loan approval is difficult, time consuming and risky. Thus, the banks aim to minimize the credit risks of defaulting. In this study we have applied logistic regression as a tool to predict whether an applicant is eligible for the loan or not. The data is collected from the Kaggle for studying and prediction.

AUTHOR : BHANU PRAKASH LOHANI

Abstract

Data mining techniques are becoming very popular in today's world because of the wide availability of huge amount of data and the need for transforming such data into knowledge for processing it. Techniques of data mining are implemented in various other domains such as telecommunication industry, retail industry, biological data analysis, intrusion detection and many other scientific applications. Data mining techniques can also be used in the banking industry which will help them to compete in the market with other competitors. In this paper we have introduced an effective prediction model for the bankers that will help them to predict the credibility of customers who have applied for loan. Decision Tree Algorithm is applied to predict the attributes relevant for credibility. A prototype of the model is described in this paper which can be used by various organizations in making the right decision to approve or reject the loan request of the customers in an efficient way.

Keywords— Loan Prediction; Loan; Prediction; Decision Tree; Classification.

AUTHOR : OM PRAKASH

Abstract

Machine learning algorithms are revolutionizing processes in all fields including; real-estate, security, bioinformatics, and the financial industry. The loan approval process is one of the most tedious task in the banking industry. Modern technology such as machine learning models can improve the speed, efficacy, and accuracy of loan approval processes. This paper presents six (6) machine learning algorithms (Random Forest, Gradient Boost, Decision Tree, Support Vector Machine, KNearest Neighbor, and Logistic Regression) for predicting loan eligibility. The models were trained on the historical dataset 'Loan Eligible Dataset,' available on Kaggle and licensed under Database Contents License (DbCL) v1.0. The dataset was processed and analyzed using Python programming libraries on Kaggle's Jupyter Notebook cloud environment. Our research result showed highperformance accuracy, with the Random forest algorithm having the highest score of 95.55% and Logistic regression with the lowest score of 80%. Our Models outperformed two of the three loan prediction models found in the literature in terms of precision-recall and accuracy.

Keywords— KNN, SVM, Bagging and Boosting techniques, Efficient ML Algorithms, Loan approval prediction.

AUTHOR : ORGI UGOCHUKWU

Abstract:

In the banking system, banks have a variety of products to provide, but credit lines are their primary source of revenue. As a result, they will profit from the interest earned on the loans they make. Loans, or whether customers repay or default on their loans, affect a bank's profit or loss. The bank's Non-Performing Assets will be reduced by forecasting loan defaulters. As a result, further investigation into this occurrence is essential. Because precise forecasts are essential for benefit maximisation, it's crucial to analyse and compare the various methodologies. The logistic regression model is an important predictive analytics tool for detecting loan defaulters. In order to assess and forecast, data from Kaggle is acquired. Logistic Regression models were used to calculate the various performance indicators. The models are compared using performance metrics like sensitivity and specificity. In addition to checking account details (which indicate a customer's wealth), the model is significantly better because it includes variables (customer personal attributes such as age, objective, credit score, credit amount, credit period, and so on) that should be considered when correctly calculating the probability of loan default. As a result, using a logistic regression approach, the appropriate clients to target for loan issuance can be easily identified by evaluating their plausibility of loan default. The model implies that a bank should assess a creditor's other attributes, which play a critical role in credit decisions and forecasting loan defaulters, in addition to giving loans to wealthy borrowers. Keywords: Logistic regression, Loan prediction, Data analysis, Machine learning models

AUTHOR : SHARAYU DOSALWAR