

Smart Lender - Applicant Credibility Prediction for Loan Approval Literature Survey

1.Loan Prediction System Using Machine Learning - Anant Shinde, Yash Patil , Ishan Kotian , Abhinav Shinde and Reshma Gulwani.

Abstract:

As the needs of people are increasing, the demand for loans in banks is also frequently getting higher every day. Banks typically process an applicant's loan after screening and verifying the applicant's eligibility, which is a difficult and time-consuming process.

In some cases, some applicants default and banks lose capital. The machine learning approach is ideal for reducing human effort and effective decision making in the loan approval process by implementing machine learning tools that use classification algorithms to predict eligible loan applicants

Inference:

According to the authors, the forecasting process begins with data clean-up and processing, missing value substitution, data set experimental analysis, and modelling, and continues to model evaluation and test data testing. A logistic regression model has been executed. The highest accuracy obtained with the original dataset is 0.811. Models are compared based on performance measurements such as sensitivity and specificity. As a result of analysing, the following conclusions were drawn. However, other characteristics of customers that play a very important role in lending decisions and forecasting defaulters should also be evaluated. Some other traits, such as gender and marriage history, do not seem to be considered by the company. A credit credibility soothsaying

system that helps companies make the right opinions to authorize or reject the credit claims of guests. This helps the banking assiduity to open effective distribution channels. This means that if the customer has a minimum repayment capacity, their system can avoid future risks. Including other techniques (using the Weka tool) that are better than the general data mining model has been implemented and tested for domains. The author suggests that, a credit status model for predicting loan applicants as valid or standard customers. The proposed model shows a score of 75.08 when classifying loan aspirants using R- Package. Lenders can use this interpretation to make mortgage choices for mortgage operations. In addition, comparative studies were conducted at different iterative levels. The replication position is a 30- grounded ANN model that offers a more advanced delicacy than other situations. This model can be used to avoid large losses in marketable banks. Six machine learning classification models were used to predict Android applications. The model is available in open-source software R. This application works well and meets the requirements of all banks. The downside of this model is that it gives each element a different weight, but in reality, it may be possible to approve a loan only based on a single powerful element, which is not possible with this system. This component can be easily connected to many other systems. There are cases of computer failure, and the most important weights of content errors and features are fixed by the automatic prediction system, and soon, so-called software may be safer, more reliable and more . Risk assessment and forecasting is an important task in the banking industry in determining whether a good and lazy loan applicant is applicable. To improve the accuracy of risk, risk assessments are conducted in primary and secondary education. Customer data is extracted and related attributes are selected using information gain theory. Rule forecasting is performed for each credit type based on predefined criteria. Approved and rejected applicants are considered "Applicable" and evaluated as "Not Applicable". Corresponding experimental results have shown that the method proposed predicts better accuracy and takes less time than existing methods. The main purpose of this design is to prognosticate which customers will be repaid with a loan because the lender needs to anticipate the problem that the borrower won't be suitable to repay the threat. Studies of three models show that logistic regression with a rating is superior to other models, random forests, and decision trees. Poor credit seekers aren't accepted, presumably because they have the option of not paying. In utmost cases, high-value appliers may be eligible for a reduction that may repay the loan. Certain sexual orientations and marriage status appear to be out of the reach of the company .

2. Bank Loan Prediction System using Machine Learning - Anshika Gupta, Vinay Pant, Sudhanshu Kumar, Pravesh Kumar Bansal

Abstract:

With the advancement in technology, there are so many enhancements in the banking sector also. The number of applications is increasing every day for loan approval. There are some bank policies that they have to consider while selecting an applicant for loan approval. Based on some parameters, the bank has to decide which one is best for approval. It is tough and risky to check out manually every person and then recommended for loan approval. In this work, we use a machine learning technique that will predict the person who is reliable for a loan, based on the previous record of the person whom the loan amount is accredited before. This work's primary objective is to predict whether the loan approval to a specific individual is safe or not.

Inference:

A prediction is a statement about what someone thinks will happen in the future. People make predictions all the time. Some are very serious and are based on scientific calculations, but many are just guesses. Prediction helps us in many things to guess what will happen after some time or after a year or after ten years.

Predictive analytics is a branch of advanced analytics that uses many techniques from data mining, statistics, modeling, machine learning, and artificial intelligence to analyze current data to make predictions. “Adyan Nur Alfiyatin, Hilman Taufiq and their friends work on the house price prediction. They use regression analysis and Particle Swarm Optimization (PSO) to predict house price”. One other similar work on the Mohamed El Mohadab, Belaid Bouikhalene and Said Safi to predict the rank for scientific research paper using supervised learning. Kumar Arun, Garg Ishan and Kaur Sanmeet work on bank loan prediction on how to bank approve a loan. They proposed a model with the help of SVM and Neural networks like machine learning algorithms.

3. Loan Prediction Using Machine Learning and Its Deployment On Web Application - C N Sujatha; Abhishek Gudipalli; Bh Pushyami; N Karthik; B N Sanjana

Abstract:

Loan prediction is one of the most important and most prominent research areas in the field of banking and insurance sectors. In the modern environment identifying and analyzing the patterns of the obtained sample dataset plays a vital role in this era. The loan prediction involves the application of various machine learning algorithms. There are some prediction systems in the market using deep learning and so on. But those are limited with certain features and cannot assist the users beyond those limits. The loan prediction project is developed using machine learning algorithms such as logistic regression. The Python programming language is used for the implementation of the code which has been developed in Colab and the html pages are developed for deployment of website using Visual Studio code. The proposed system can deliver high accuracy results and moderate loss for training and validate data. Finally, the results show the model implemented with high accuracy. Further, this work can be extended in order to improve the focus where the high accuracy can be obtained.

Inference:

In this work, the loan prediction is performed by obtaining the dataset from various sources in. CSV file format. The python language is used to implement the code in Colab. Flask and Heroku app are used to deploy the project. In order to enhance the operating speed of the proposed system, machine learning algorithms are used for training and testing the data. Before training and validating the data, the data should be cleaned thoroughly o remove all the null values and replace them with zero. By using python, the interaction speed between the entities has improved in order to select the best options for prediction. Some of the highlights in the work are in order to understand the approaches followed by various authors and are also used for analyzing the various methods. It is also used to know the drawbacks and steps to be applied in order to overcome the drawbacks with the highest accuracy occurred by the models The K Nearest Neighbor, Random Forest, Decision tree and Logistic

regressions are applied for the dataset.

Here according to the accuracy of the model, the particular model is applied to the project. This helps to understand the algorithms of machine learning. The machine learning algorithms helps to establish the conditional checks of the dataset in order to recognize systematic approach. These interactions can help the managements to control the overall operations by modifying dynamically with the real-time scenarios. The analysis of the result is also done which explains the prediction of the loan. This work clearly explains the present-day scenarios concerning accuracy and clarity in terms of procedures.

The future scope of this work can be implemented for predicting the loans according to the dataset taken. Different countries have different attributes as their priority, those attributes can be included in the dataset while training according to their bank's choice. In Future, by taking the real time data with a greater number of sample datasets are considered by having high accuracy rate and less loss. Also the percentage up to which the loan can be sanctioned will be predicted. By studying the relation between the individual attributes and its dependency on the predicted output, a detailed report can be provided either for loan approval or rejection

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