

# Ideation Phase

## LITERATURE SURVEY

Date	19 September 2022
Team ID	PNT2022TMID35767
Project Name	Project – Smart Lender – Applicant Credibility Prediction For Loan Approval
Maximum Marks	4 Marks

## Smart Lender – Applicant Credibility Prediction for Loan Approval

### ❖ PAPER NAME:

Loan Approval Prediction using Machine Learning Models

#### ▪ AUTHORS:

Ritika Purswani, Sakshi Verma, Yash Jaiswal, Prof. Surekha

#### ▪ DESCRIPTION:

Outlier detection and removal, as well as imputation removal processing, were done during the pre-processing stage. To predict the chances of current status regarding the loan approval process, SVM, DT, KNN, and gradient boosting models were used in this method. To divide the dataset into training and testing processes, the 80:20 rule was used. Experimentation concluded that the Decision Tree has significantly higher loan prediction accuracy than the other models.

#### ▪ MODULES:

Data collection and pre-processing, applying machine learning models, training, and testing the data.

### ❖ PAPER NAME:

Accurate loan approval prediction based on machine learning approach.

#### ▪ AUTHORS:

J. Tejaswini<sup>1</sup>, T. Mohana Kavya, R. Devi Naga Ramya, P. Sai Triveni Venkata Rao Maddumala.

#### ▪ DESCRIPTION:

The framework acknowledges or won't have any significant bearing for a loan. Obligation reimbursement is a critical mark of bank funds. It is extremely challenging to foresee the capacity of clients to reimburse a loan. AI methods are extremely valuable in uncovering the aftereffects of many sources. This paper utilizes three AI calculations: Logistic Regression (LR), Decision Tree (DT) and Random Forest (RF) to distinguish client advances. Studies have shown that the respectability of AI calculations is more noteworthy than the backwardness and technique of learning AI.

- MODULES:

Logistic Regression , Decision Tree and Random Forest.

- ❖ PAPER NAME:

Bank Loan Prediction System using Machine Learning.

- AUTHORS:

Anshika Gupta , Vinay Pant , Sudhanshu Kumar and Pravesh Kumar Bansal.

- DESCRIPTION:

In this paper, they 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. . Fraud detection and credit risk applications are particularly well suited to classification technique. This approach frequently employs Decision tree based classification Algorithm. In classification, a training set is used to build the model as the classifier which can classify the data items into its appropriate classes. A testset is used to validate the model.

- MODULES:

Loan Dataset, Logistic Regression, Random Forest, Django.

- ❖ PAPER NAME:

Loan Sanctioning Prediction Procedure based on NB approach.

- AUTHORS:

Kacheria, Shivakumar, Sawkar and Gupta.

- DESCRIPTION:

The seven parameters considered were income, age, profession, existing loan with its tenure, amount and approval status. The sub-processes include, Pre-processing (handling the missing values with KNN and data refinement using binning algorithm), Classification using NB approach and updating the dataset frequently results in appropriate improvement in the loan prediction process. Experimentation put-forth the conclusion that, integration of KNN and binning algorithm with NB resulted in improved prediction of loan sanctioning process.

- MODULES:

NB approach integrated with K-Nearest Neighbour (KNN) and binning algorithms.

- ❖ PAPER NAME:

Prediction of Modernized Loan Approval System Based on Machine Learning Approach.

- AUTHORS: Vaidya, Ashlesha

- DESCRIPTION: This model uses logistic regression as a machine learning tool. This paper uses a statistical model (Logistic Regression) to predict whether the loan should be approved or not for a set of records of an applicant. Logistic regression can even

work with power terms and nonlinear effect. The historical data of candidates was used to build a machine learning model using different classification algorithms. The main objective of this paper is to predict whether a new applicant granted the loan or not using machine learning models trained on the historical data set.

- MODULES: Logistic regression, XGBoost.

## EXISTING MODEL DRAWBACKS:

Existing frameworks are frequently broken. Computations can be undeniably challenging, particularly if a significant number of the qualities are muddled and/or a considerable lot of the outcomes are connected. In the future, this prediction module can be more improved and integrated. The system is prepared on the previous training data but in the future, it is possible to make changes to software, which can accept new testing data and should also take part in training data and predict accordingly.

## PROPOSED METHODOLOGY:

Since the problem of predicting the approval of a loan application is a classification problem, the model can be trained using classification algorithms like Logistic Regression, Decision Tree, Random Forest Classifier, Support Vector machine. This proposed model will characterize the behaviour of customers on the Basis of their record. These records is taken from the customers, and create a data set. With the help of These data sets and training machine learning model, we predict that the customer's loan will passed or not.