Smart lender - Applicant credibility prediction for loan approval

LITERATURE SURVEY

PAPER 1:
Towards An Efficient Real-time Approach To Loan Credit Approval Using Deep Learning (2018)

SUMMARY:

- The proposed model is based on a deep neural network, and it permits to classify loan applicants as good or bad risk.
- To test the effectiveness of the model, three different binary classification methods are used for benchmark, totaling 4 typical algorithm models.
- The proposed Framework was used by loan providers, to select the best candidates for a loan credit in Real-Time.

ADVANTAGE:

- Experimental results prove that our proposed RealTime model, based on deep neural networks, outperforms typical binary classifiers, in terms of precision recall and accuracy.
- Deep NN with auto encoders gave the highest accuracy compared to other simpler models.

DISADVANTAGE:

- More tuning of the hyper-parameter, deep learning will show even better results since this paper uses simple models.

ACCURACY:
Deep NN with auto encoders : 0.904 F1 score

AUTHORS:
Youness Abakarim; Mohamed Lahby; Abdelbaki Attioui.

PAPER 2:
Machine Learning Models for Predicting Bank Loan Eligibility (2022)

SUMMARY:

- This paper presents six machine learning algorithms (Random Forest, Gradient Boost, Decision Tree, Support Vector Machine, K-Nearest Neighbour 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.

ADVANTAGE:

- Our research result showed high-performance accuracy, with the Random forest algorithm having the highest score of 95.55% and Logistic regression with the lowest score of 80%.
- Higher accuracy was able to be achieved with a simple machine learning model.

ACCURACY:
Random forest algorithm having the highest score of 95.55%

AUTHORS:
U. E. Orji, C. H. Ugwuishiwu, J. C. N. Nguemaleu and P. N. Ugwuanyi

PAPER 3:
Swindle: Predicting the Probability of Loan Defaults using CatBoost Algorithm (2021)

SUMMARY:

- In this paper, they have explored the use of the CatBoost algorithm for loan default prediction.
- This paper has compared our algorithm with two different algorithms namely random forest and gradient boosting.
- CatBoost has achieved the highest accuracy amongst all other algorithms.

ADVANTAGE:

- Using the CatBoost algorithm, the loan default probability has been achieved after which the personalised loan scheme was recommended to the applicants.

DISADVANTAGE:

- Attributes of the applicants such as age, medical history and the nature of their jobs can be considered in evaluating the uncertainty parameter of repaying loans.
- Potential defaults in corporate loans can be predicted for companies and startups.

AUTHORS:
S. Barua, D. Gavandi, P. Sangle, L. Shinde and J. Ramteke

PAPER 4:

Prediction of modernised loan approval system based on machine learning approach (2021)

SUMMARY:

- In this paper, they predict whether a new applicant granted the loan or not using machine learning models trained on the historical data set.
- This paper present three machine learning technique(XGBoost,Random Forest and Decision Tree)

ADVANTAGE:

- This system provides some conditions by setting the algorithm and just by evaluating the details, we get to know eligibility criteria that client is eligible or not

DISADVANTAGE:

- This algorithm cannot predict the appropriate result when client going through some disaster

AUTHORS:

Vishal Singh, Ayushman Yadav, Rajat Awasthi, Guide N. Partheeban

PAPER 5:

IJERT-Predict Loan Approval in Banking System Machine Learning Approach for Cooperative Banks Loan Approval (2020)

SUMMARY:

- In this paper, they examine real bank credit data and conduct several machine learning algorithms on the data that determine credit worthiness of customers in order to formulate a bank risk automated system.

ADVANTAGE:

- These algorithm achieved an accuracy rate between 76% to over 80%

AUTHORS:

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