

CREDIT RISK ASSESSMENT

Created by



Untung Riyadi

VIRTUAL INTERNSHIP EXPERIENCE ID/X PARTNERS



Business Understanding

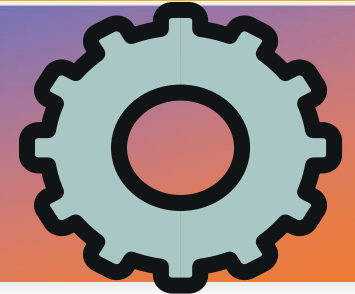
- Credit risk is known as the risk of borrower's failure to repay a loan
- Assessing borrower's risk to repay the loan is a crucial thing in credit risk assessment
- We can use machine learning to automate the process

Tools:



- Descriptive analysis
- Graph analysis
- Predictive modelling (classification)

Analytical Approach



Data Requirements & Collection

- I required a dataset of customer loan from financial company
- The dataset is collected by ID/X Partners from a company

- This dataset has 74 columns / features
- Consists of 52 numerical & 22 non-numerical features

- Many features have missing values
- There are 17 null features

Data Understanding



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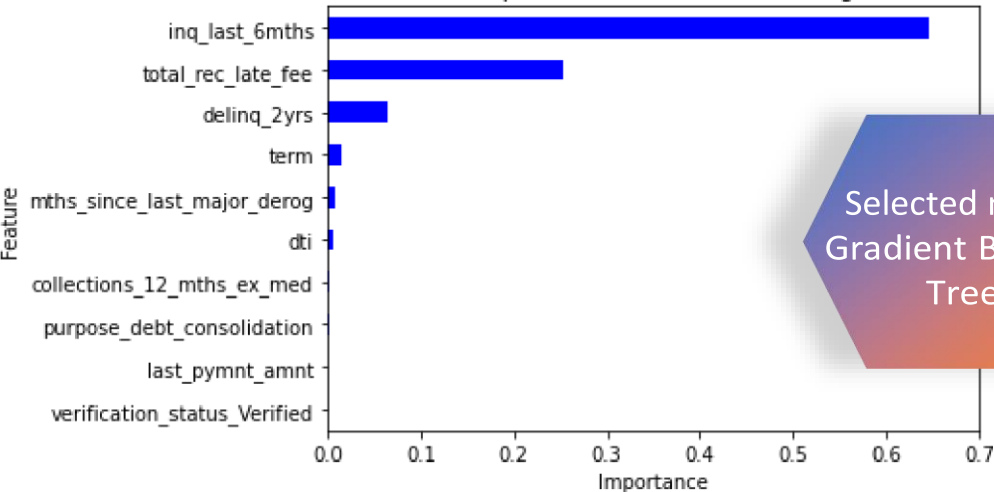
Modelling & Evaluation

- 70% Training & 30% Testing
- I used SMOTE for handling imbalanced class
- All steps are handled by Pipeline

Evaluation Metrics:

- Main: False Negative (FN) & Recall from "0" (I minimized wrong predicted bad loan)
- Additional: ROC-AUC & Kolmogorov-Smirnov (KS)

Feature Importance in Gradient Boosting Model



Selected model:
Gradient Boosting
Trees

Model	FN	Recall	ROC-AUC	KS
Random Forest	608	96%	99.41%	94.40%
Gradient Boosting Trees	386	97%	99.48%	94.28%
XGBoost	447	97%	99.43%	93.83%
Voting Classifier	420	97%	99.48%	94.34%