

Car insurance Claim Classification



Introduction

- ▶ The use of car insurance is to provide financial protection against physical damage or bodily injury resulting from traffic accident.
- ▶ Car insurance may additionally offer financial Protection against theft of the vehicle .. etc.



Downloaded from kaggle
10K observations

- Filling null values with mean
- Renaming columns

- Select high 6 score features
(more impact on data)
- Drop unnecessary columns

Dataset

Exploratory
Data Analysis

Data
Cleaning

Feature
Engineering

Apply 9 Models
on the Dataset

Chose the
Best model



About Data

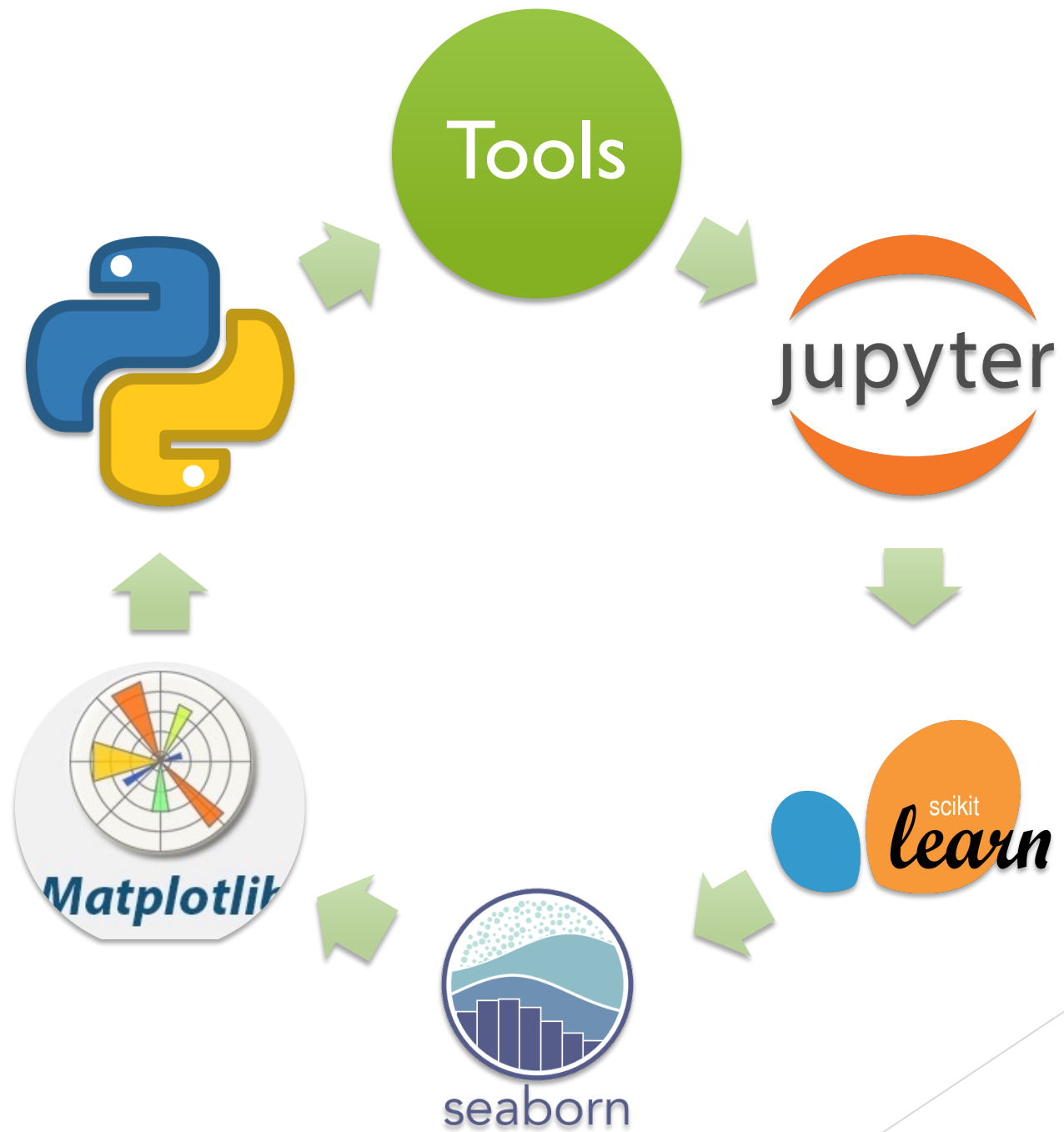
- ❑ **Features (Customer data):**

- ▶ Age
- ▶ Driving Experience
- ▶ Speed Violations
- ▶ Vehicle ownership
- ▶ Driving under the influence
- ▶ Past Accidents

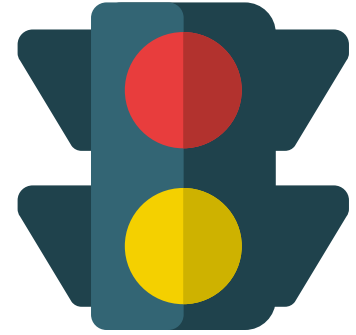
- ❑ **Target:**

- ▶ Did the customer has claimed his/her loan or not.

The dataset has 21 columns and we select 6 high score features that impact on our data



Modelling



Training set 60%

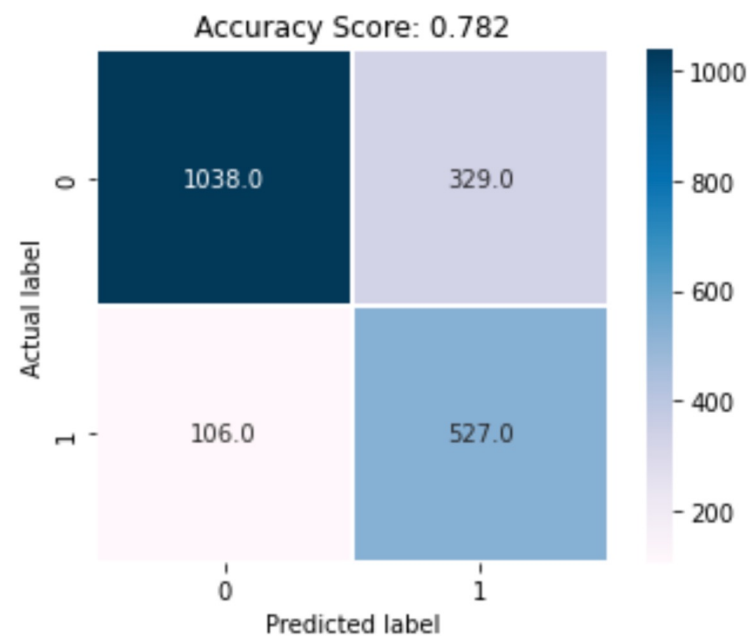
Validation set 20%

Test set 20%

Classification evaluation metric: F1 Score

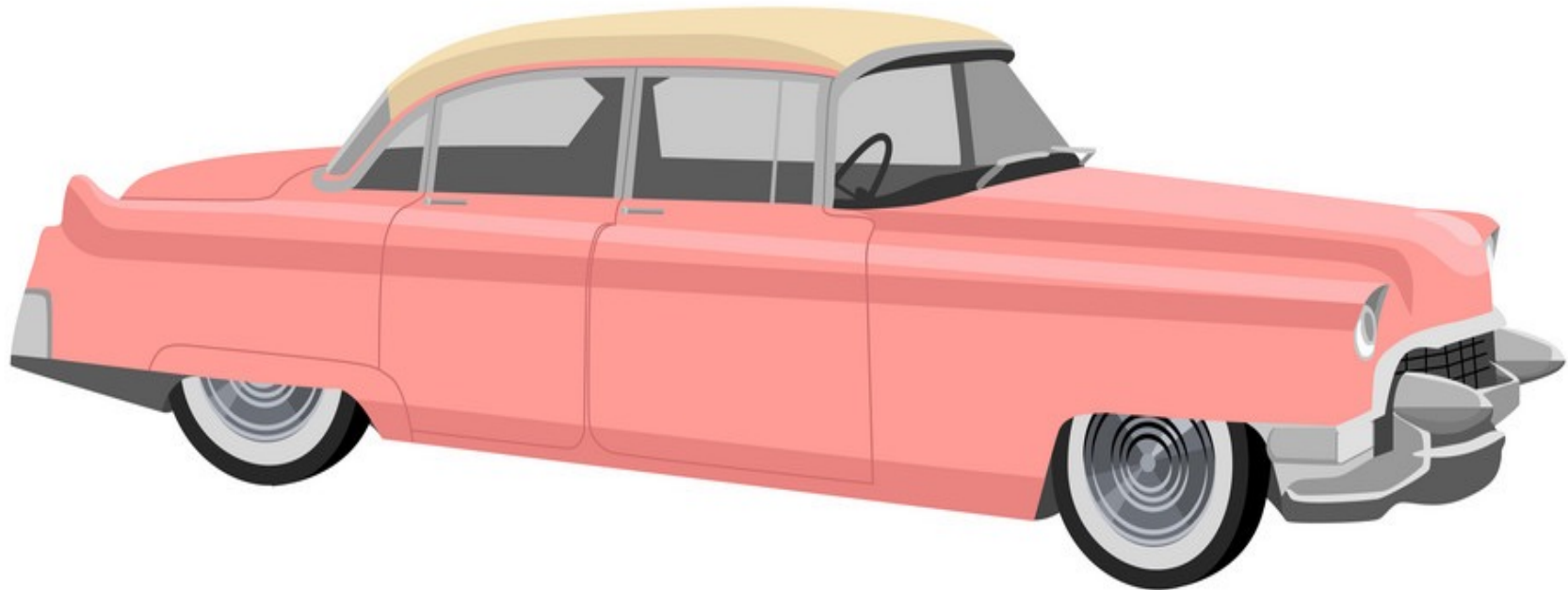
Model	Training Accuracy	Test Accuracy	F1 Score
Logistic Regression ★★ ★	80%	78.2%	70.79%
Random Forest	82%	77.2%	69.5%
Decision Tree	82%	77.4%	69.7%
SVC	77%	77%	69.98%
K-nearest neighbors	73%	75.4%	56.9%
AdaBoost Classifier ★★ ★	80%	78.2%	70.7%
Gradient Boosting Classifier	81%	77.5%	69.8%
XGB Classifier	81%	77.6%	69.97%
CatBoost Regressor	81%	78%	70.3%

Confusion Matrix for Logistic Regression Classifier



conclusion

- The model works good performance to classify that if a customer has claimed his/her loan or not.
- Future work:
Explore more features such as gender and credit score.



A long-exposure photograph of a city highway at dusk. The foreground shows blurred light trails from cars in motion. In the background, several tall apartment buildings are lit up against a twilight sky. A large billboard stands prominently in the middle ground, displaying the words "Thank you" in a green, sans-serif font. The billboard is supported by a dark metal structure. The overall scene is a blend of urban architecture and dynamic movement.

Thank you