

Decision Support System

Team 23

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FICO

one Project Background



Machine Learning

Assessment of Credit Risk

In recent year, data analytics has been applied in financial services. Using machine learning models have recently achieved great predictive successes for many applications.

Today, in FICO Case, we are here trying to use Machine Learning to create the Risk Performance Model for Credit risk:

FICO Project's

Model Building



*Data
Preparation*



*Model
Testing*



Interface

Platform for FICO
people to perform



FICO Project's

= Data Preparation

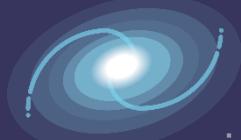
- ☑ Find the special Value -9,-8,-7.
eliminating rows with value of -9 which
represents no record
- ☑ Get Dummies at Output variables
- ☑ Prepare input variables – X and
Output variables – Y





two

Model Testing



Types of Models

01



02

03

04

KNN(K-nearest
neighbors
Increase K – avoid
overfitting

Decision Tree
Boosting
Bagging

SVM - RBF
C – penalty
Gamma – affecting parameter

Logistic Regression
Linear Classification

three Interface



KNN VS Logistic Regression VS SVM

KNN

Accuracy: 0.69620

Confusion Matrix

	0	1
0	708	317
1	283	667

Logistic Regression

Accuracy: 0.72911

Confusion Matrix

	0	1
0	764	261
1	274	676

SVM (RBF)

Accuracy: 0.72253

Confusion Matrix

	0	1
0	769	256
1	292	658



Random Forest VS Decision Tree

Accuracy: 0.73266

Confusion Matrix:

	0	1
0	801	224
1	304	646

Random
Forest

Bagging

boosting

Accuracy: 0.73924

Confusion Matrix:

	0	1
0	774	251
1	264	686

Accuracy: 0.74278

Confusion Matrix:

	0	1
0	772	253
1	255	695

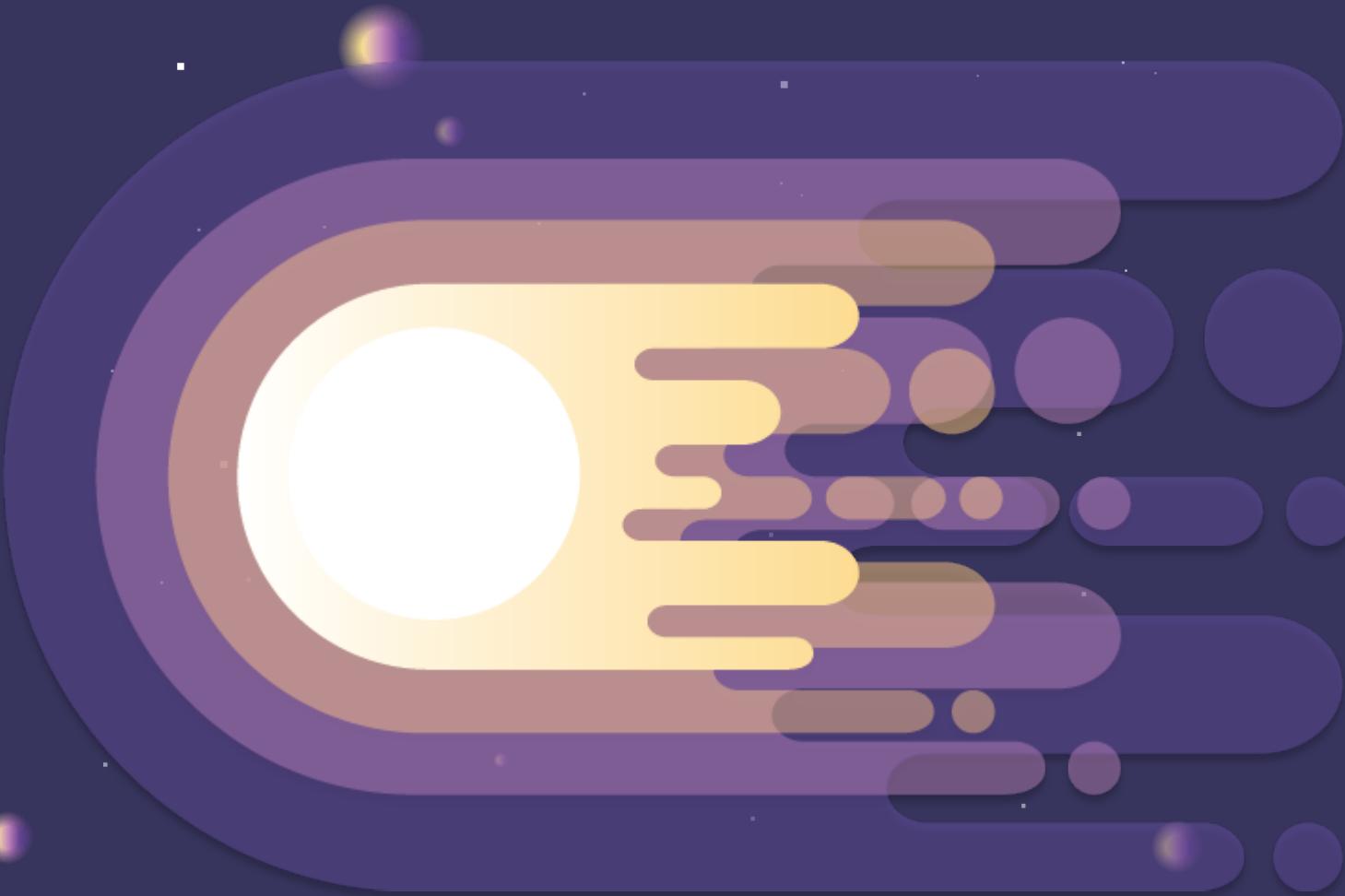
four

Conclusion



Accuracy 0.74278

Best Model: Boosting



Thanks

