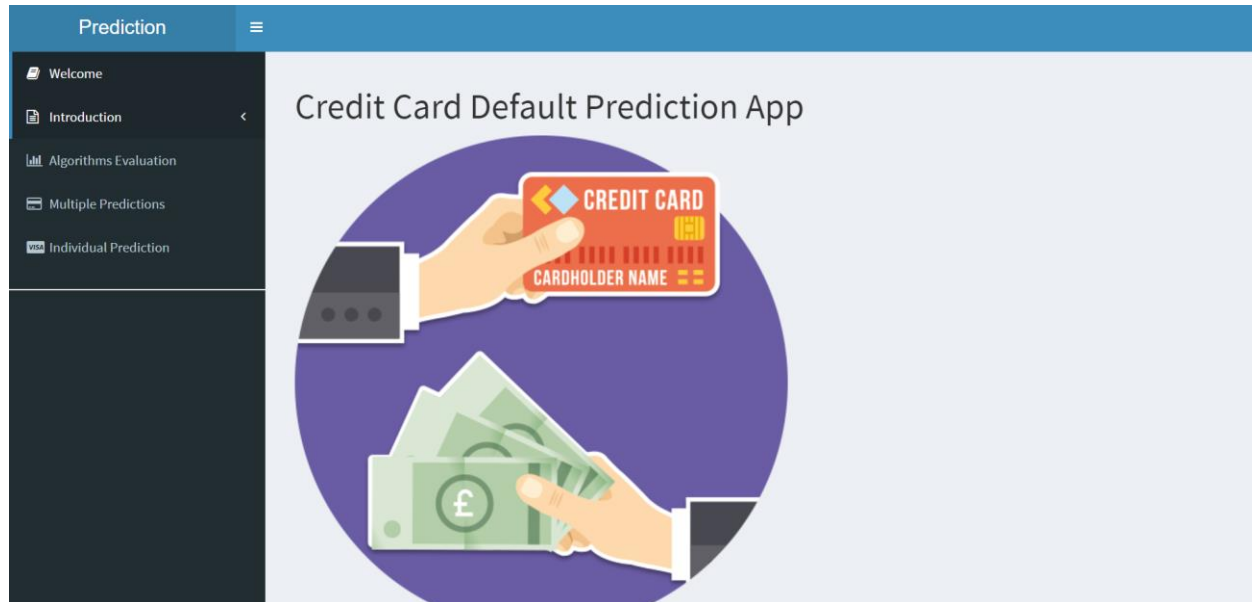
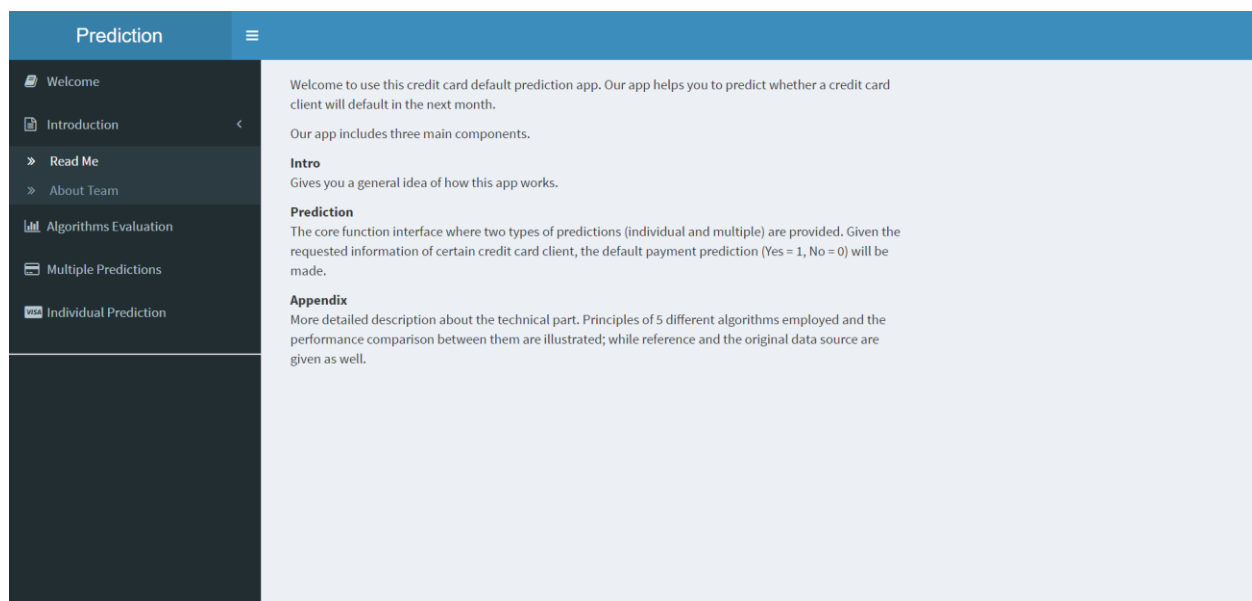


Shiny App

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Logistics Regression (LR)
A special case of linear regression model where the dependent variable (DV) is categorical.

Support Vector Machine (SVM)
Supervised learning models which constructs a hyperplane or set of hyperplanes in a high- or infinite-dimensional space.

Random Forest (RF)
An ensemble learning method for classification, regression and other tasks that operate by constructing a multitude of decision trees at training time and outputting the class that is the mode of the classes (classification) or mean prediction (regression) of the individual trees.

XGBoost
An advanced implementation of gradient boosting algorithm by adding new models sequentially until no further improvement is achieved.

Artificial Neural Network (ANN)
A nonlinear statistical model based on the structure and functions of biological neural networks when relationships between inputs and outputs is complex.

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Algorithm	Test Accuracy	Prediction Time (6000 observations)
SVM	0.779	28.75s
Random Forest	0.815	3.07s
Xgboost	0.878	0.05s
Logistic Regression	0.808	0.10s
Neural Network	0.779	4.41s

Multiple Predictions

Note: User can upload a csv data with a certain format (based on the tutorial given in the Shiny App), we can provide the prediction results.

Data uploading page and tutorial

Prediction

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Choose Your Testing Data Table (CSV file)

Browse... testforshow.csv

Upload complete

Submit

Tutorial

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Prediction

To make multiple prediction, a data frame consisting the relevant information of credit card clients you want to predict is required. The data frame should include 16 explanatory variables as follows.
X1: Amount of the given credit (NT dollar); it includes both the individual consumer credit and his/her family (supplementary) credit.
X2: Gender (1 = male; 2 = female).
X3: Education (1 = graduate school; 2 = university; 3 = high school; 4 = others).
X4: Marital status (1 = married; 2 = single).
X5: Age (year).
X6-X11: History of past 6 months payment. (-1 = pay duly; 1-8 = payment delay for 1-8 months; 9 = payment delay for 9 months or above).
X12-X17: Amount of bill statement (NT dollar) of the past six months.
X18-X23: Amount of payment (NT dollar) of the past six months.
Example:

X1	X2	X3	X4	X5	X6	X7	X8	X9	X10	X11	X12	X13	X14	X15	X16	X17	X18	X19	X20	X21	X22	X23	
1	230000	1	1	1	35	2	2	2	2	2	117277	119823	120986	121864	123749	120937	582	0	4500	3900	5000	0	4500
2	130000	1	3	1	56	-1	-1	-1	0	-1	-1	582	0	582	291	441	441	0	582	0	441	441	291
3	50000	2	2	1	31	2	0	0	2	0	0	43979	44970	46015	46993	47940	50000	1744	3955	0	3954	3713	2900
4	30000	2	2	2	25	0	0	0	0	-2	15493	16427	17379	18100	0	0	1500	1379	10000	0	0	0	0
5	220000	2	1	2	35	-1	-1	-1	-1	-1	1564	1643	1670	1670	1670	1670	5774	7479	5000	5000	5000	5000	3379

Show the table uploaded by user

Prediction

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Browse... testforshow.csv

Upload complete

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Show 5 entries

Search:

X	LIMIT_BAL	SEX	EDUCATION	MARRIAGE	AGE	PAY_0	PAY_2	PAY_3	PAY_4	PAY_5	PAY_6	BILL_AMT1	BILL_AMT2
1	230000	1	1	2	35	2	2	2	2	2	2	117277	119823
2	130000	1	3	1	56	-1	-1	-1	0	-1	-1	582	0
3	50000	2	2	1	31	2	0	0	2	0	0	43979	44970
4	30000	2	2	2	25	0	0	0	0	0	-2	15493	16427
5	220000	2	1	2	35	-1	-1	-1	-1	-1	-1	5564	7443

X LIMIT_BAL SEX EDUCATION MARRIAGE AGE PAY_0 PAY_2 PAY_3 PAY_4 PAY_5 PAY_6 BILL_AMT1 BILL_AMT2

Showing 1 to 5 of 6,000 entries

Previous 1 2 3 4 5 ... 1200 Next

Show the prediction results

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Choose Your Testing Data Table (CSV file)

Browse...

testforshow.csv

Upload complete

Submit

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Note: Xgboost prediction result is recommended, use random forest result as a reference.

Show 25 entries

Search:

ID	Xgboost	Random_Forest
1	Yes	No
2	Yes	Yes
3	Yes	No
4	No	No
5	No	No
6	No	No
7	No	No
8	No	No

Individual prediction

Note: User can fulfill the information of a customer, we will give out the prediction result for this customer based on the information given.

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Gender

☒ Male ☐ Female

Marriage

☐ Married ☒ Unmarried

Education

☒ Graduate or above ☐ University ☐ High School ☐ Others

Amount of given credit

0

Age

30

History of past 6 months payment

Pay Duly

Pay Duly

Pay Duly

Pay Duly

Pay Duly

Pay Duly

Amount of bill statement last 6 months

0

0

0

0

0

0

Amount of payment last 6 months

0

0

0

0

0

0

Predict

Tutorial

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Will this customer make default payment next month?

No