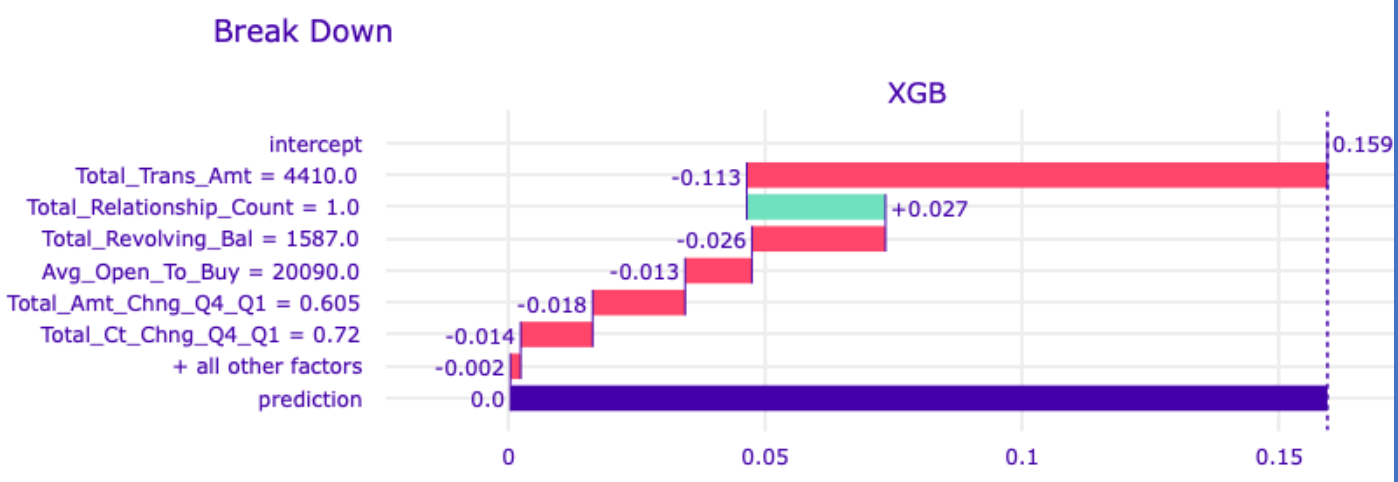
Ciekawe wyjaśnienia

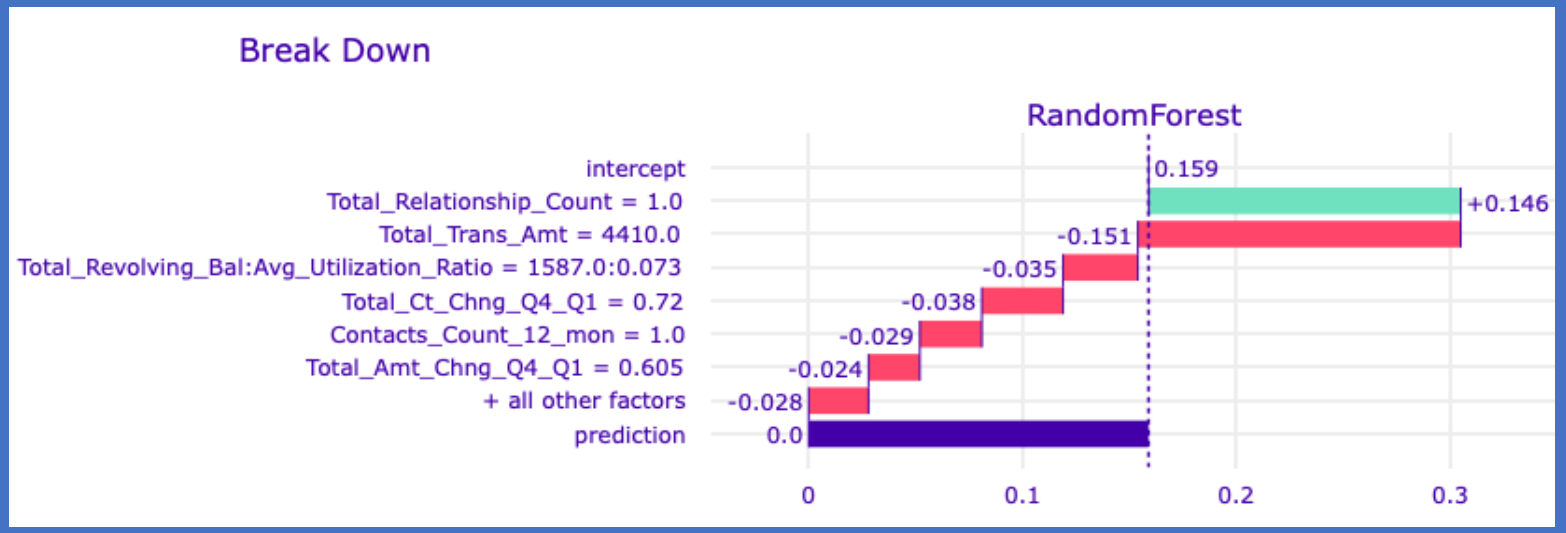
Credit Card Churns

BarteKasiAdam

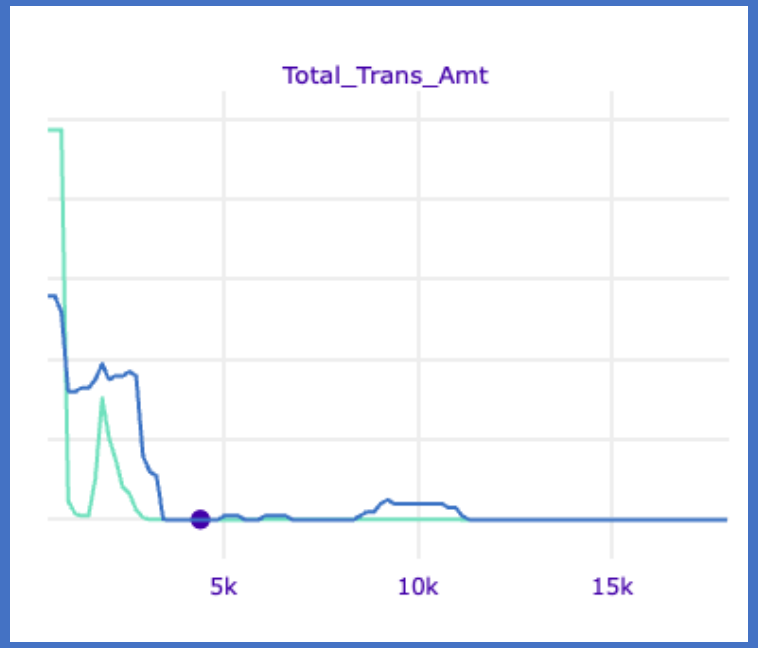
```
Label: 0
XGB prediction : 0.000030
RF prediction : 0.0
```

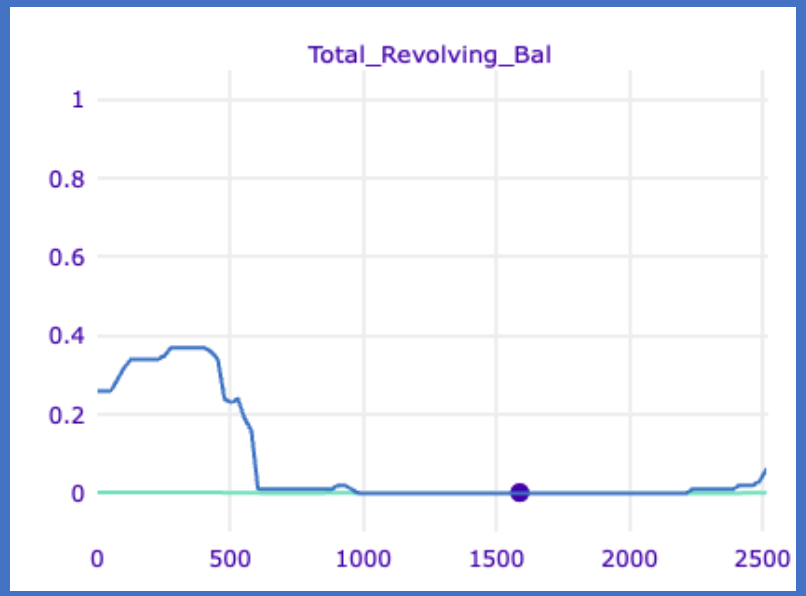
Poprawna predykcja

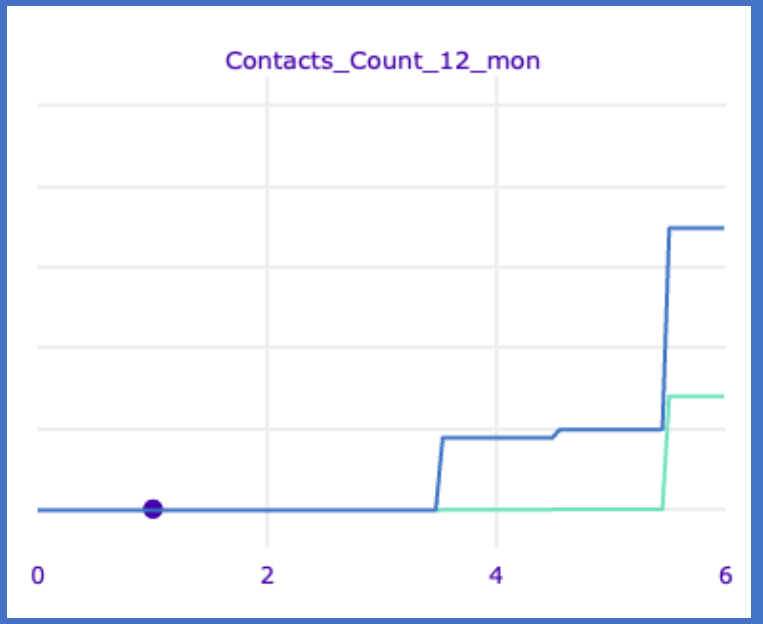


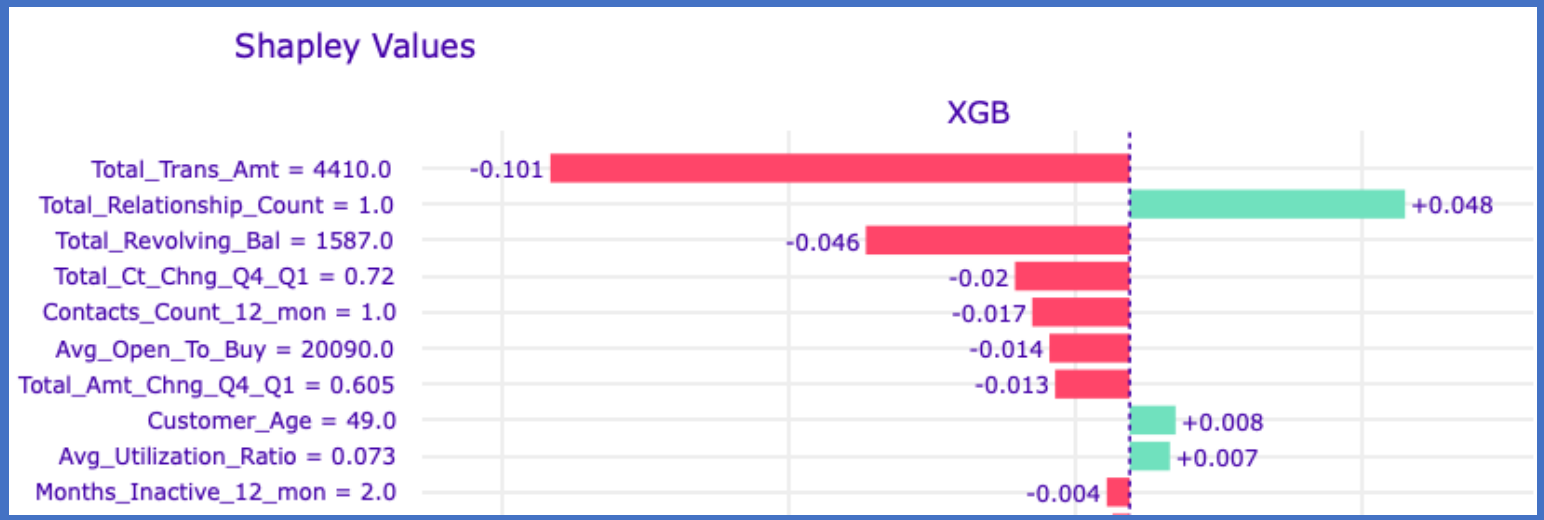


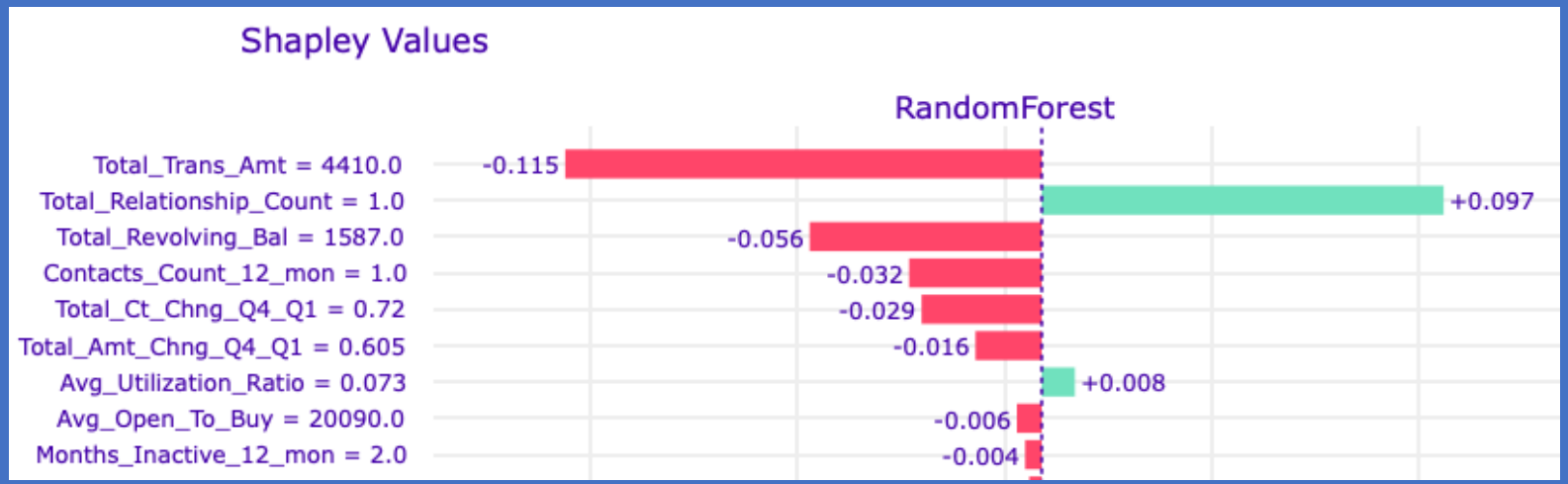
Ceteris Paribus Profiles







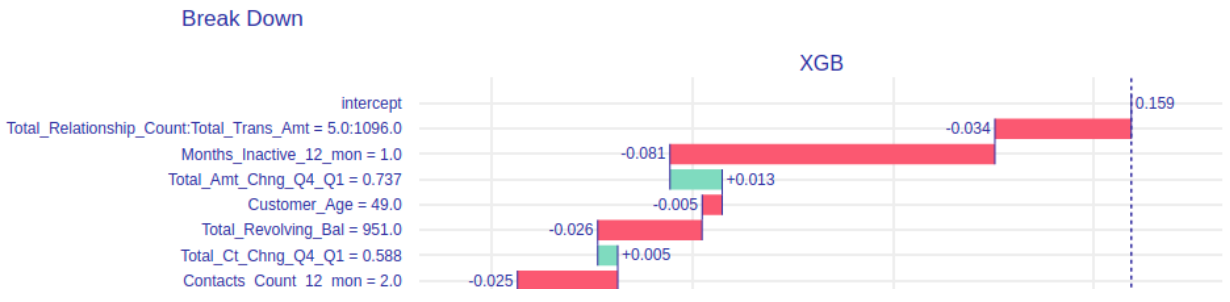

Shapley Values
XGB
Total_Trans_Amt = 4410.0
Total_Relationship_Count = 1.0
Total_Revolving_Bal = 1587.0
Total_Ct_Chng_Q4_Q1 = 0.72
Contacts_Count_12_mon = 1.0
Avg_Open_To_Buy = 20090.0
Total_Amt_Chng_Q4_Q1 = 0.605
Customer_Age = 49.0
Avg_Utilization_Ratio = 0.073
Months_Inactive_12_mon = 2.0
-0.101
+0.048
-0.046
-0.02
-0.017
-0.014
-0.013
+0.008
+0.007
-0.004

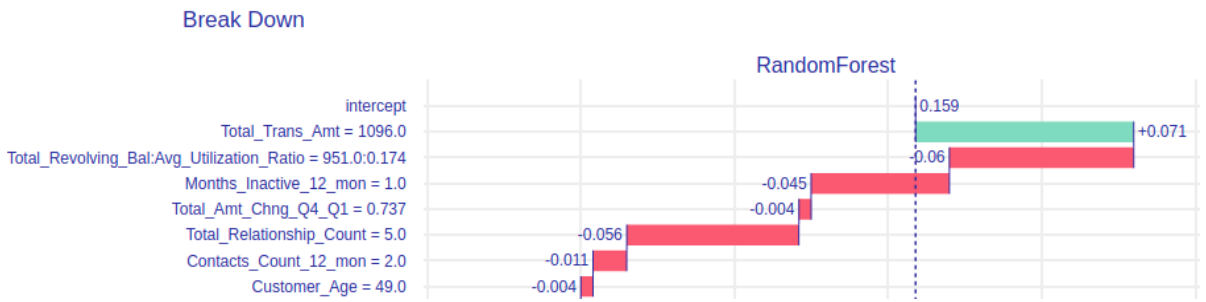

Shapley Values
RandomForest
Total_Trans_Amt = 4410.0
Total_Relationship_Count = 1.0
Total_Revolving_Bal = 1587.0
Contacts_Count_12_mon = 1.0
Total_Ct_Chng_Q4_Q1 = 0.72
Total_Amt_Chng_Q4_Q1 = 0.605
Avg_Utilization_Ratio = 0.073
Avg_Open_To_Buy = 20090.0
Months_Inactive_12_mon = 2.0
-0.115
+0.097
-0.056
-0.032
-0.029
-0.016
+0.008
-0.006
-0.004

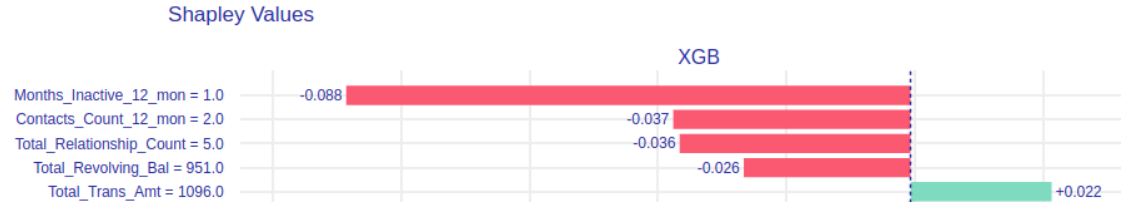
Błędna predykcja

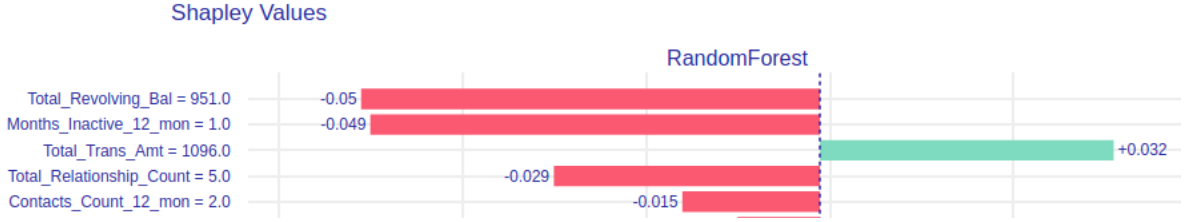
```
In [8]: print('Label: ' + str(y_test.loc[index]))
        observation = X_test.loc[index].to_frame().transpose()
        print('XGB prediction : ' + str(xgb_explainer.predict(observation)[0]))
        print('RF prediction : ' + str(rf_explainer.predict(observation)[0]))

        Label: 1
        XGB prediction : 0.0051854015
        RF prediction : 0.04
```

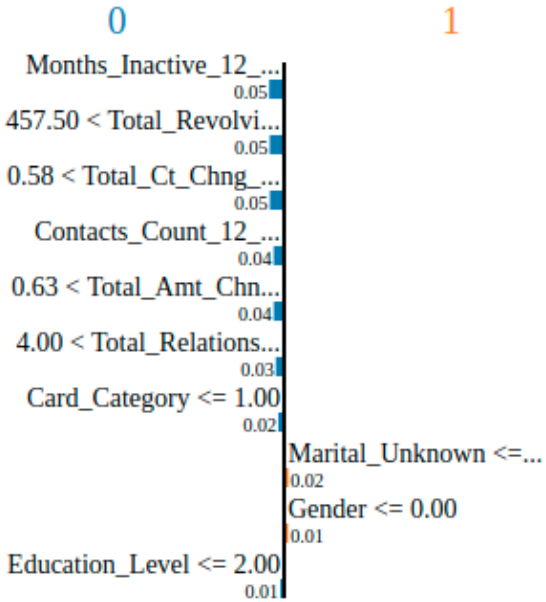






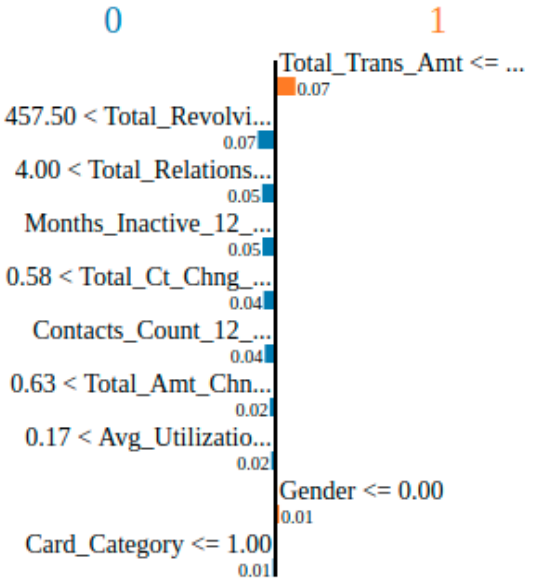


XGBoost

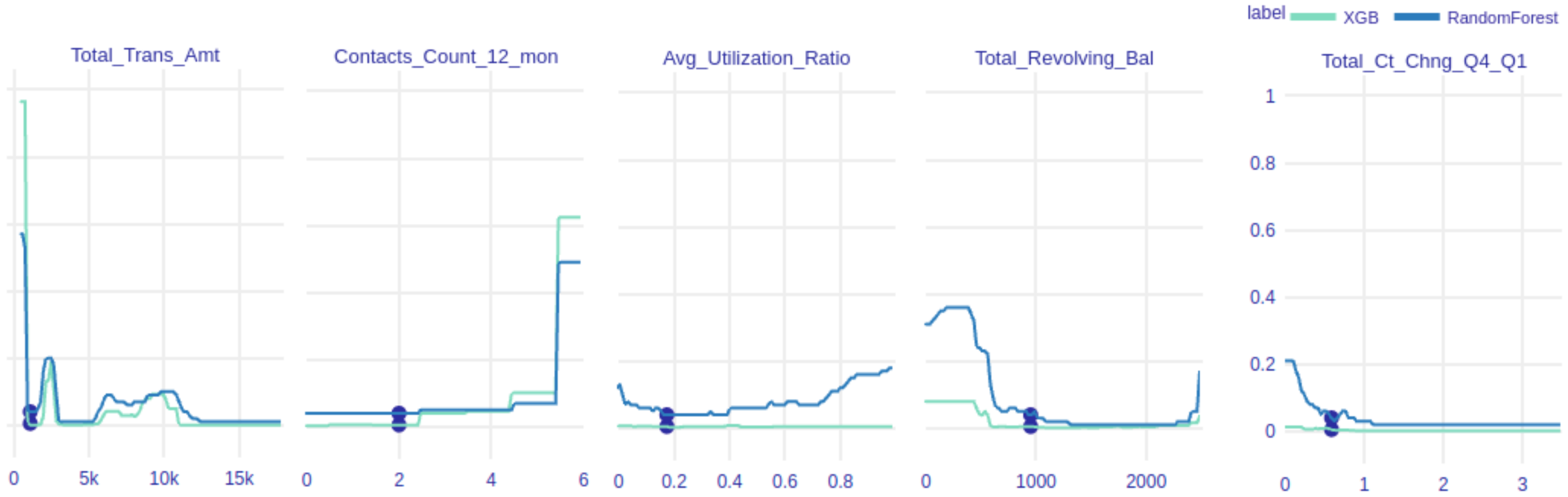


Months_Inactive_12_mon	1.00
Total_Revolving_Bal	951.00
Total_Ct_Chng_Q4_Q1	0.59
Contacts_Count_12_mon	2.00
Total_Amt_Chng_Q4_Q1	0.74
Total_Relationship_Count	5.00
Card_Category	1.00
Marital_Unknown	0.00
Gender	0.00
Education_Level	2.00

Random Forest



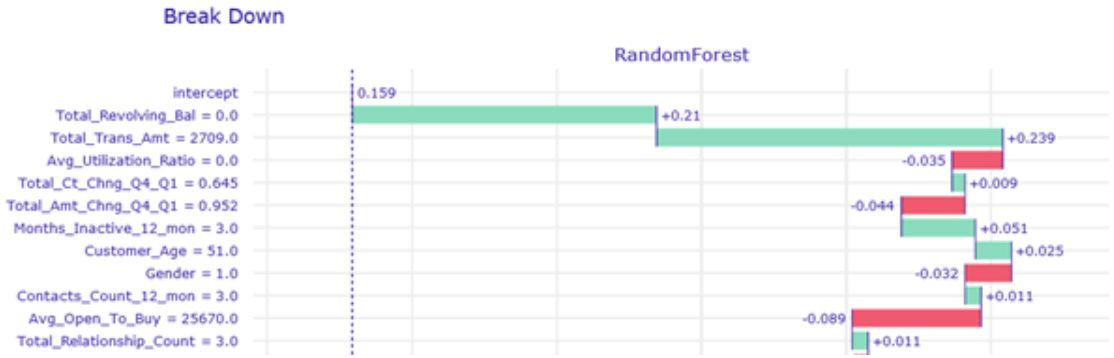
Total_Trans_Amt	1096.00
Total_Revolving_Bal	951.00
Total_Relationship_Count	5.00
Months_Inactive_12_mon	1.00
Total_Ct_Chng_Q4_Q1	0.59
Contacts_Count_12_mon	2.00
Total_Amt_Chng_Q4_Q1	0.74
Avg_Utilization_Ratio	0.17
Gender	0.00
Card_Category	1.00

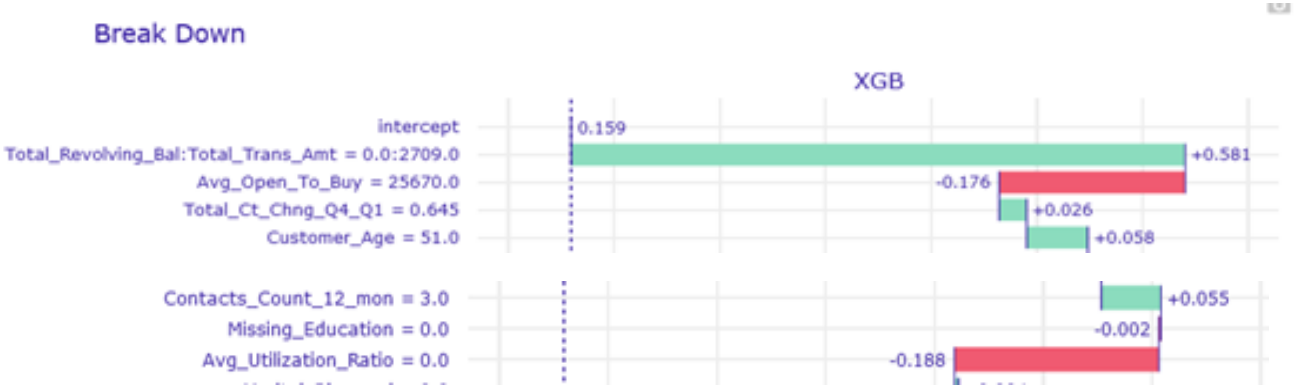


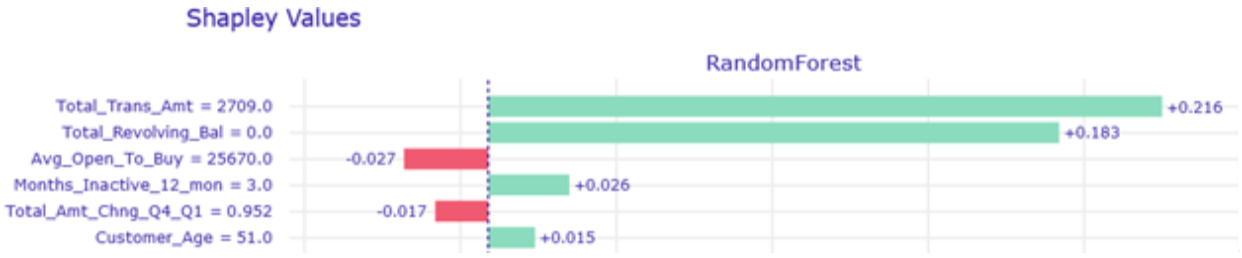
Niepewna predykcja

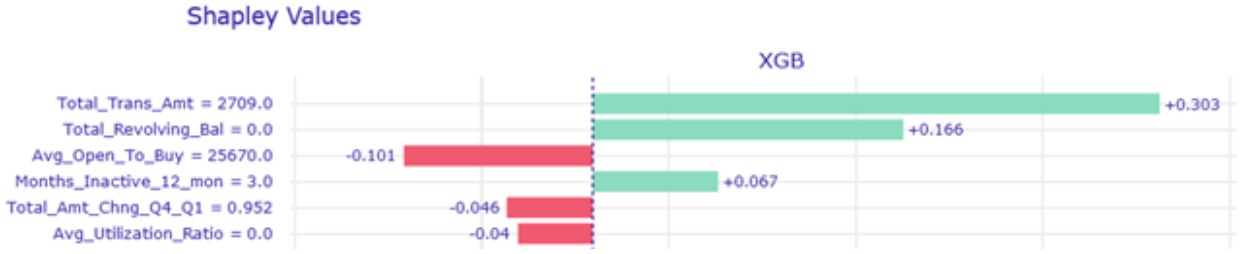
```
print('Label: ' + str(y_test.loc[index]))
observation = X_test.loc[index].to_frame().transpose()
print('XGB prediction : ' + str(xgb_explainer.predict(observation)[0]))
print('RF prediction : ' + str(rf_explainer.predict(observation)[0]))
```

```
Label: 1
XGB prediction : 0.5230666
RF prediction : 0.53
```

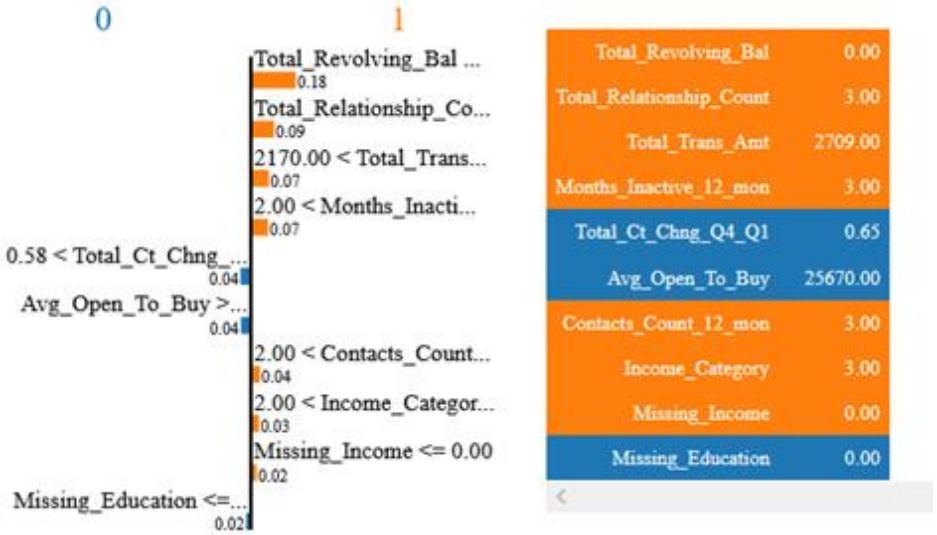




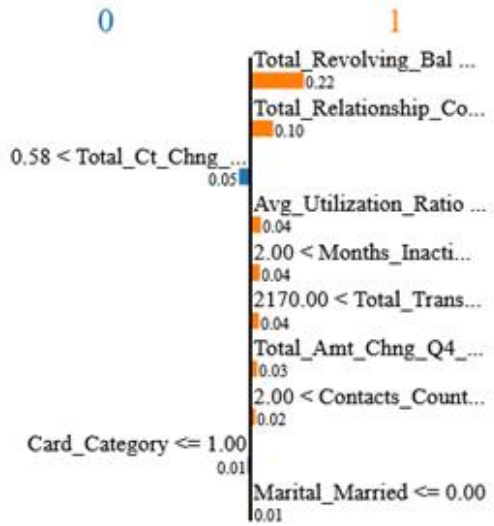


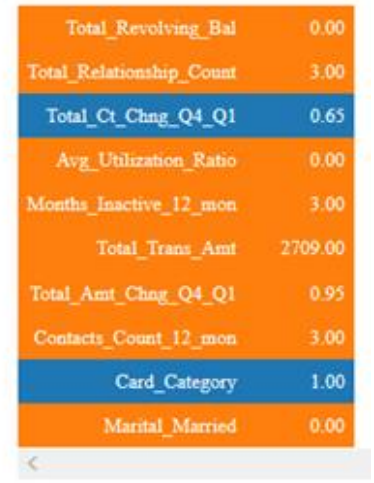


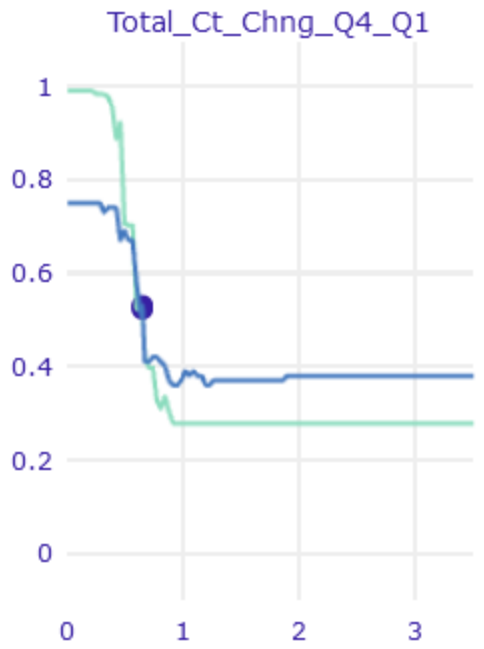
XGBoost

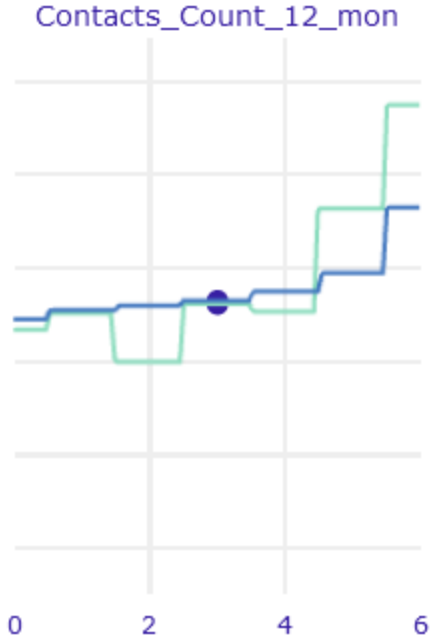


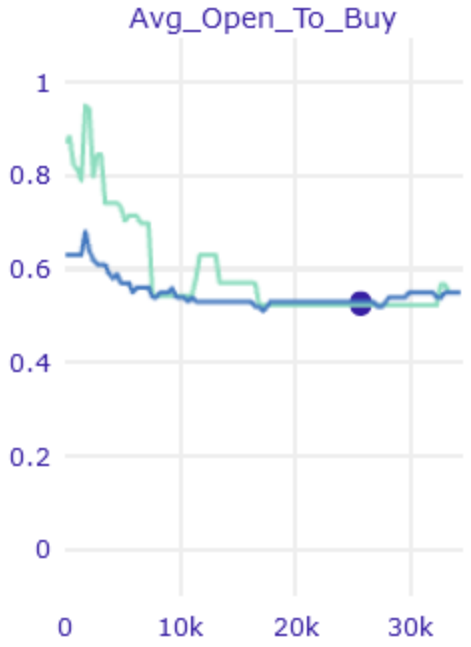
Random Forest











Podsumowanie

- Total_Trans_Amt, Total_Revolving_Bal są kolumnami wskazywanymi za jedne z najważniejszych przez prawie wszystkie metody.
- Małe Total_Trans_Amt, Total_Revolving_Bal albo Total_Relationship_Count może być niewystarczającą wskazówką dla modeli do rozpoznania klienta rezygnującego.
- Jest kilka kolumn, które wydają się nie mieć dużego wpływu na predykcje różnych obserwacji. Może warto rozważyć usunięcie ich z modelu.