
RISULTATI CLASSIFICATORI

Casistiche e metriche a confronto

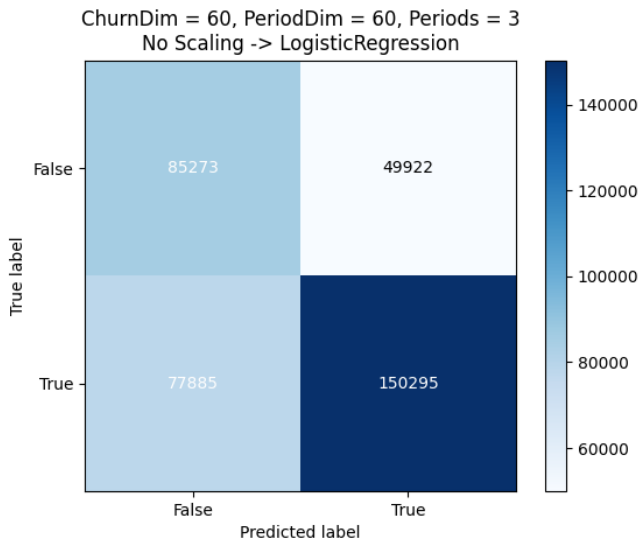
17 NOVEMBRE 2022

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LOGISTIC REGRESSION

Logistic Regression – No Scaling: 70% Training, 30% test – ‘churn_retail_db’.

Non è stato applicato nessuno scaler. A sinistra la matrice di confusione e a destra il report.



```

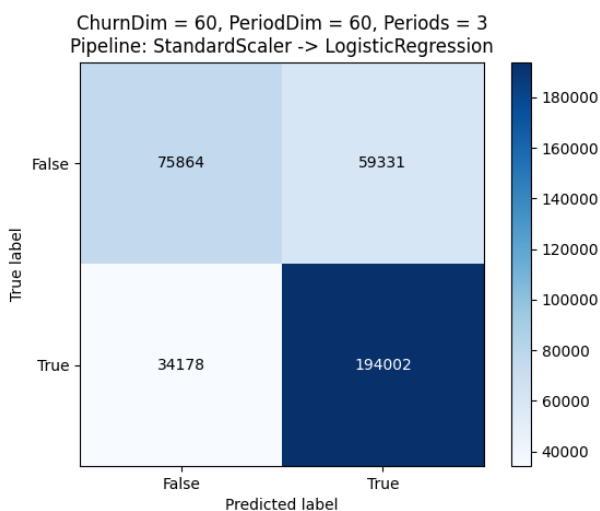
Accuracy: 0.6482779497764017
Missclassification: 0.35172205022359826

```

	precision	recall	f1-score	support
False	0.52	0.63	0.57	135195
True	0.75	0.66	0.70	228180
accuracy			0.65	363375
macro avg	0.64	0.64	0.64	363375
weighted avg	0.67	0.65	0.65	363375

Logistic Regression – StandardScaler: 70% Training, 30% test – ‘churn_retail_db’.

È stato applicato StandardScaler di river.preprocessing con meccansimo Pipeline. A sinistra la matrice di confusione e a destra il report.



```

Accuracy: 0.7426652906776746
Missclassification: 0.2573347093223254

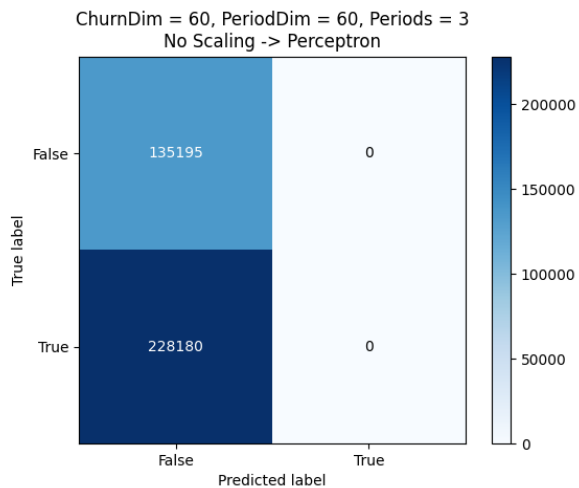
```

	precision	recall	f1-score	support
False	0.69	0.56	0.62	135195
True	0.77	0.85	0.81	228180
accuracy			0.74	363375
macro avg	0.73	0.71	0.71	363375
weighted avg	0.74	0.74	0.74	363375

PERCEPTRON

Perceptron – No Scaling: 70% Training, 30% test – ‘churn_retail_db’.

Non è stato applicato nessuno scaler. A sinistra la matrice di confusione e a destra il report.



```

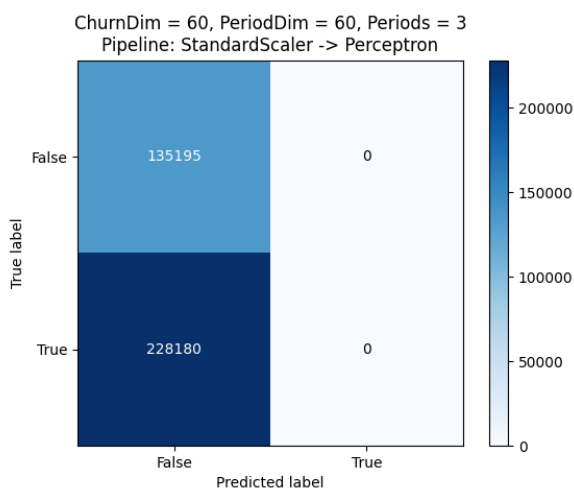
Accuracy: 0.3720536635706914
Missclassification: 0.6279463364293085

```

	precision	recall	f1-score	support
False	0.37	1.00	0.54	135195
True	0.00	0.00	0.00	228180
accuracy			0.37	363375
macro avg	0.19	0.50	0.27	363375
weighted avg	0.14	0.37	0.20	363375

Perceptron – StandardScaler: 70% Training, 30% test – ‘churn_retail_db’.

È stato applicato StandardScaler di river.preprocessing con meccansimo Pipeline. A sinistra la matrice di confusione e a destra il report.



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Accuracy: 0.3720536635706914
Missclassification: 0.6279463364293085

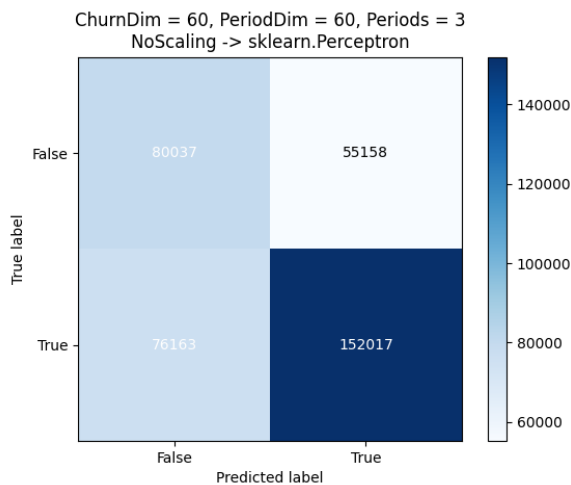
```

	precision	recall	f1-score	support
False	0.37	1.00	0.54	135195
True	0.00	0.00	0.00	228180
accuracy			0.37	363375
macro avg	0.19	0.50	0.27	363375
weighted avg	0.14	0.37	0.20	363375

sklearn.PERCEPTRON

sklearn.Perceptron – No Scaling: 70% Training, 30% test – ‘churn_retail_db’. Metodo offline.

Non è stato applicato nessuno scaler. A sinistra la matrice di confusione e a destra il report.

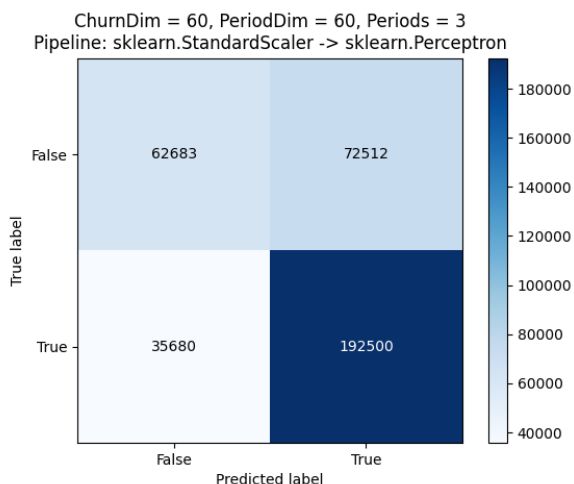


```
Accuracy: 0.6386074991400069
Missclassification: 0.3613925008599931
```

	precision	recall	f1-score	support
False	0.51	0.59	0.55	135195
True	0.73	0.67	0.70	228180
accuracy			0.64	363375
macro avg	0.62	0.63	0.62	363375
weighted avg	0.65	0.64	0.64	363375

sklear.Perceptron – StandardScaler: 70% Training, 30% test – ‘churn_retail_db’. Metodo offline.

È stato applicato StandardScaler di sklearn. A sinistra la matrice di confusione e a destra il report.

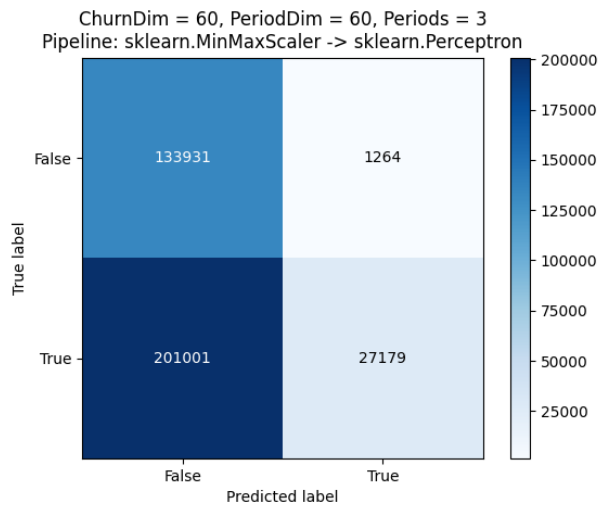


```
Accuracy: 0.7022579979360165
Missclassification: 0.2977420020639835
```

	precision	recall	f1-score	support
False	0.64	0.46	0.54	135195
True	0.73	0.84	0.78	228180
accuracy			0.70	363375
macro avg	0.68	0.65	0.66	363375
weighted avg	0.69	0.70	0.69	363375

sklear.Perceptron – MinMaxScaler: 70% Training, 30% test – ‘churn_retail_db’. Metodo offline.

È stato applicato MinMaxScaler di sklearn. A sinistra la matrice di confusione e a destra il report.



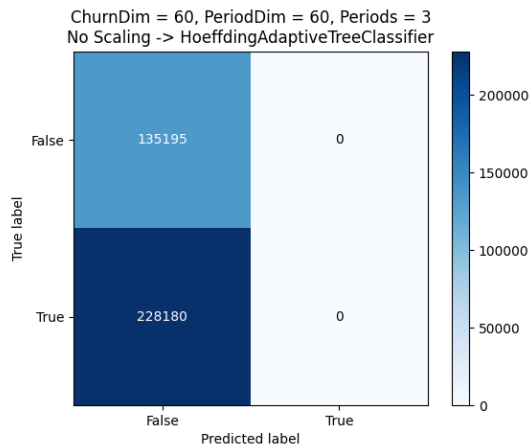
```
Accuracy: 0.44337117303061574
Missclassification: 0.5566288269693842
```

	precision	recall	f1-score	support
False	0.40	0.99	0.57	135195
True	0.96	0.12	0.21	228180
accuracy			0.44	363375
macro avg	0.68	0.55	0.39	363375
weighted avg	0.75	0.44	0.34	363375

HOEFFDINGADAPTIVETREECLASSIFIER

HoeffdingAdaptiveTreeClassifier– No Scaling: 70% Training, 30% test – ‘churn_retail_db’.

Non è stato applicato nessuno scaler. A sinistra la matrice di confusione e a destra il report.

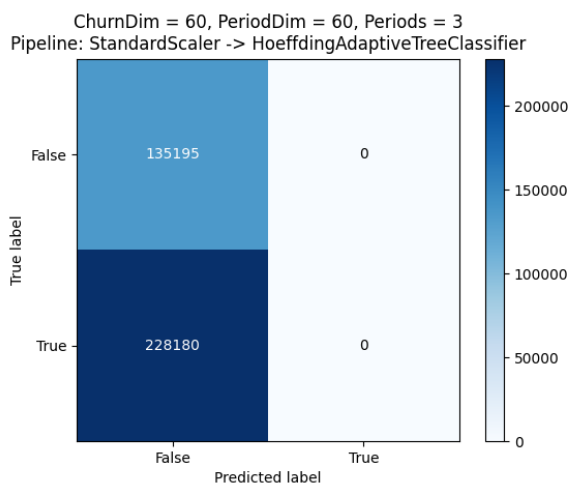


```
Accuracy: 0.3720536635706914
Missclassification: 0.6279463364293085
```

	precision	recall	f1-score	support
False	0.37	1.00	0.54	135195
True	0.00	0.00	0.00	228180
accuracy			0.37	363375
macro avg	0.19	0.50	0.27	363375
weighted avg	0.14	0.37	0.20	363375

HoeffdingAdaptiveTreeClassifier – StandardScaler: 70% Training, 30% test – ‘churn_retail_db’.

È stato applicato StandardScaler di river.preprocessing con meccansimo Pipeline. A sinistra la matrice di confusione e a destra il report.

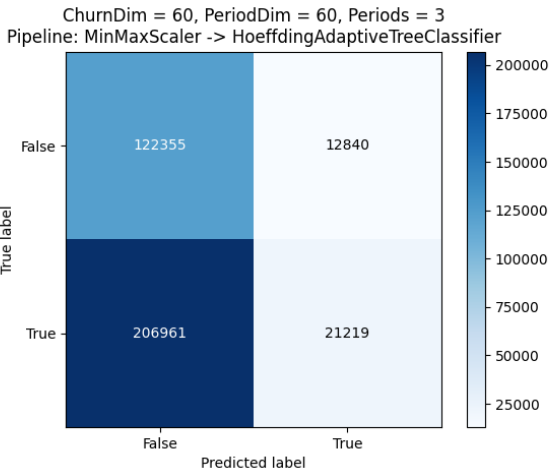


```
Accuracy: 0.3720536635706914
Missclassification: 0.6279463364293085
```

	precision	recall	f1-score	support
False	0.37	1.00	0.54	135195
True	0.00	0.00	0.00	228180
accuracy			0.37	363375
macro avg	0.19	0.50	0.27	363375
weighted avg	0.14	0.37	0.20	363375

HoeffdingAdaptiveTreeClassifier – MinMaxScaler: 70% Training, 30% test – ‘churn_retail_db’.

È stato applicato MinMaxScaler di river.preprocessing con meccansimo Pipeline. A sinistra la matrice di confusione e a destra il report.



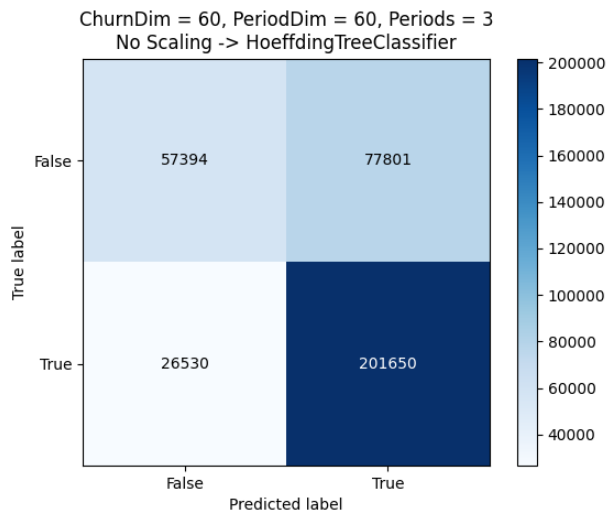
```
Accuracy: 0.3951124871001032
Missclassification: 0.6048875128998967
```

	precision	recall	f1-score	support
False	0.37	0.91	0.53	135195
True	0.62	0.09	0.16	228180
accuracy			0.40	363375
macro avg	0.50	0.50	0.34	363375
weighted avg	0.53	0.40	0.30	363375

HOEFFDINGTREECLASSIFIER

HoeffdingTreeClassifier– No Scaling: 70% Training, 30% test – ‘churn_retail_db’.

Non è stato applicato nessuno scaler. A sinistra la matrice di confusione e a destra il report.

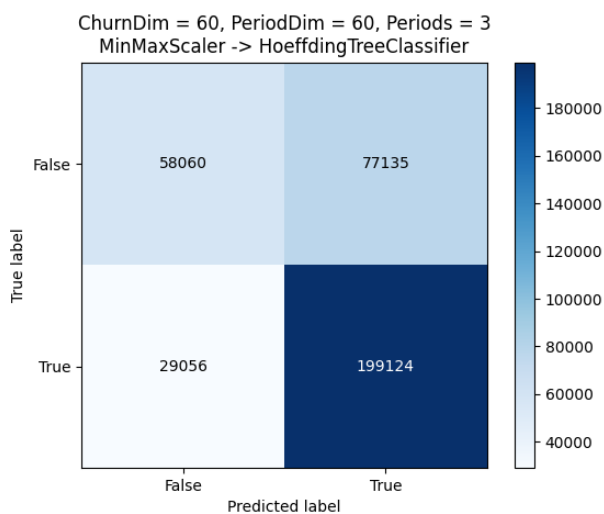


```
Accuracy: 0.7128833849329206
Missclassification: 0.2871166150670794
```

	precision	recall	f1-score	support
False	0.68	0.42	0.52	135195
True	0.72	0.88	0.79	228180
accuracy			0.71	363375
macro avg	0.70	0.65	0.66	363375
weighted avg	0.71	0.71	0.69	363375

HoeffdingTreeClassifier– MinMaxScaler: 70% Training, 30% test – ‘churn_retail_db’.

È stato applicato MinMaxScaler di river.preprocessing con meccansimo Pipeline. A sinistra la matrice di confusione e a destra il report.



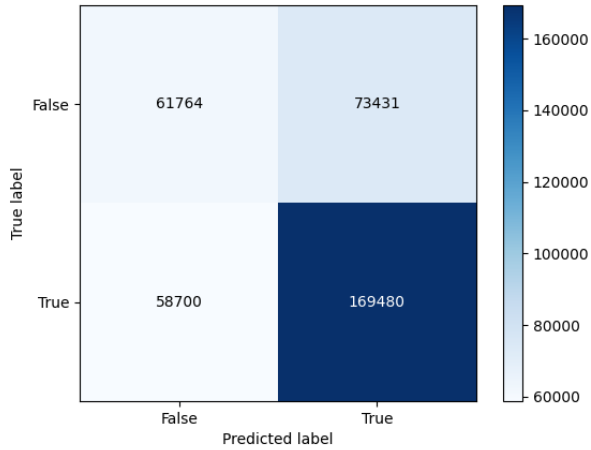
```
Accuracy: 0.707764705882353
Missclassification: 0.29223529411764704
```

	precision	recall	f1-score	support
False	0.67	0.43	0.52	135195
True	0.72	0.87	0.79	228180
accuracy			0.71	363375
macro avg	0.69	0.65	0.66	363375
weighted avg	0.70	0.71	0.69	363375

HoeffdingTreeClassifier– StandardScaler: 70% Training, 30% test – ‘churn_retail_db’.

È stato applicato StandardScaler di river.preprocessing con meccansimo Pipeline. A sinistra la matrice di confusione e a destra il report.

ChurnDim = 60, PeriodDim = 60, Periods = 3
StandardScaler -> HoeffdingTreeClassifier



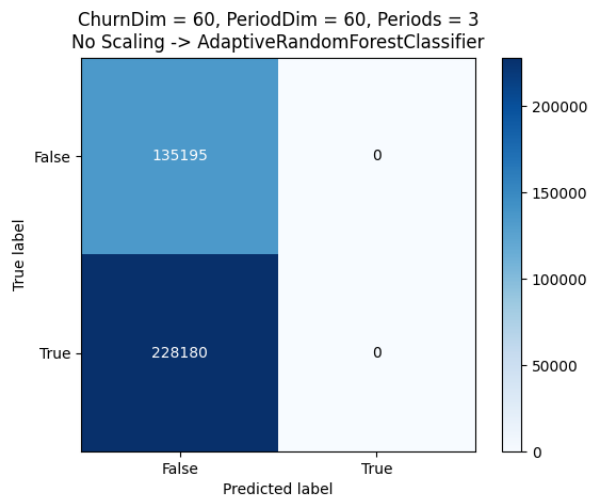
```
Accuracy: 0.6363783969728242
Missclassification: 0.36362160302717583
```

	precision	recall	f1-score	support
False	0.51	0.46	0.48	135195
True	0.70	0.74	0.72	228180
accuracy			0.64	363375
macro avg	0.61	0.60	0.60	363375
weighted avg	0.63	0.64	0.63	363375

ADAPTIVERANDOMFORESTCLASSIFIER

AdaptiveRandomForestClassifier– No Scaling: 70% Training, 30% test – ‘churn_retail_db’.

Non è stato applicato nessuno scaler. A sinistra la matrice di confusione e a destra il report.



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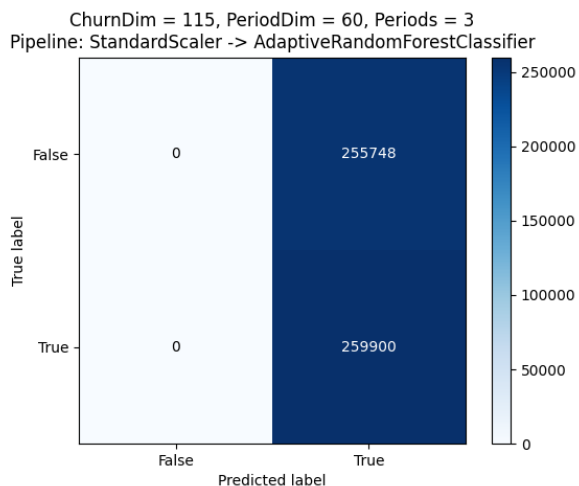
Accuracy: 0.3720536635706914
Missclassification: 0.6279463364293085

```

	precision	recall	f1-score	support
False	0.37	1.00	0.54	135195
True	0.00	0.00	0.00	228180
accuracy			0.37	363375
macro avg	0.19	0.50	0.27	363375
weighted avg	0.14	0.37	0.20	363375

AdaptiveRandomForestClassifier– StandardScaler: 70% Training, 30% test – ‘churn_retail_db’.

Non è stato applicato nessuno scaler. A sinistra la matrice di confusione e a destra il report.



```

Accuracy: 0.5040260022340821
Missclassification: 0.4959739977659179

```

	precision	recall	f1-score	support
False	0.00	0.00	0.00	255748
True	0.50	1.00	0.67	259900
accuracy			0.50	515648
macro avg	0.25	0.50	0.34	515648
weighted avg	0.25	0.50	0.34	515648