

# CRYPTO TREE DECISION MODEL

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## WITHOUT FEATURE SELECTION

### PARTE 1:

INDICATORI SELEZIONATI:

RSI	MFI	CMF	Rapporto
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### GINI

ACCURACY: 72.12175301799051

	Precision	Recall	F1-Score
<b>Hold</b>	0,73	0,71	0,72
<b>Not Hold</b>	0,72	0,73	0,72

### ENTROPY

ACCURACY: 68.44849452769036

	Precision	Recall	F1-Score
<b>Hold</b>	0,71	0,62	0,66
<b>Not Hold</b>	0,66	0,75	0,70

### MSE

coefficient of determination  $R^2$  of the prediction: 0.7116600477338282

Mean squared error: 0.14

Test Variance score: 0.44

### PARTE 2:

### GINI

ACCURACY: 98.37000814995925

	Precision	Recall	F1-Score
<b>Hold</b>	0,99	0,98	0,98
<b>Not Hold</b>	0,98	0,99	0,98

### ENTROPY

ACCURACY: 98.61450692746536

	Precision	Recall	F1-Score
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<b>Hold</b>	0,99	0,99	0,99
<b>Not Hold</b>	0,98	0,99	0,99

## MSE

coefficient of determination  $R^2$  of the prediction: 0.9865534360969379

Mean squared error: 0.03

Test Variance score: 0.89

## WITH FEATURE SELECTION

**START INDICTORS** → ['RSI', 'MFI', 'MACD\_diff', 'CMF', 'SMA', 'BB', 'Rapporto']

	<b>RSI</b>	<b>MFI</b>	<b>MACD</b>	<b>CMF</b>	<b>SMA</b>	<b>BB</b>	<b>Rapporto</b>
1	2.487e+00	1.735e+02	7.083e-02	4.476e+00	6.094e-02	6.525e-01	8.511e+02
2	False 5	False 4	False 3	False 2	True 1	True 1	True 1
3	0.415	0.27	0.066	0.167	0.018	0.047	0.017

## 1. UNIVARIATE SELECTION

INDICATORI SELEZIONATI:

RSI	MFI	CMF	Rapporto
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Nome dataset: 01-01-2019\_30-05-2019\_fs1

### Parte 1

Hold 2043

No\_Hold 2043

## GINI

ACCURACY: 72.38479966179717

	<b>Precision</b>	<b>Recall</b>	<b>F1-Score</b>
<b>Hold</b>	0,73	0,71	0,72
<b>Not Hold</b>	0,72	0,74	0,73

## ENTROPY

ACCURACY: 67.84254779463573

	<b>Precision</b>	<b>Recall</b>	<b>F1-Score</b>
<b>Hold</b>	0,67	0,69	0,68

<b>Not Hold</b>	0,69	0,66	0,67
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## MSE

coefficient of determination  $R^2$  of the prediction: 0.7501938936033343

Mean squared error: 0.14

Test Variance score: 0.45

## Parte 2

Hold 2043

No\_Hold 2043

## GINI

ACCURACY: 97.31051344743277

	<b>Precision</b>	<b>Recall</b>	<b>F1-Score</b>
<b>Hold</b>	0,97	0,97	0,97
<b>Not Hold</b>	0,97	0,97	0,97

## ENTROPY

ACCURACY: 97.88101059494703

	<b>Precision</b>	<b>Recall</b>	<b>F1-Score</b>
<b>Hold</b>	0,98	0,98	0,98
<b>Not Hold</b>	0,98	0,98	0,98

## MSE

coefficient of determination  $R^2$  of the prediction: 0.9946400178549318

Mean squared error: 0.04

Test Variance score: 0.84

## 2. RECURSIVE FEATURE ELIMINATION

INDICATORI SELEZIONATI:

SMA	BB	Rapporto
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Nome dataset: 01-01-2019\_30-05-2019\_fs2

## Parte 1

## GINI

ACCURACY: 59.08685236507117

	Precision	Recall	F1-Score
<b>Hold</b>	0,55	0,93	0,69
<b>Not Hold</b>	0,78	0,26	0,39

## ENTROPY

ACCURACY: 59.08685236507117

	Precision	Recall	F1-Score
<b>Hold</b>	0,55	0,93	0,69
<b>Not Hold</b>	0,78	0,26	0,39

## MSE

coefficient of determination  $R^2$  of the prediction: 0.06499859594005886

Mean squared error: 0.23

Test Variance score: 0.07

## Parte 2

## GINI

ACCURACY: 67.56316218418907

	Precision	Recall	F1-Score
<b>Hold</b>	0,64	0,82	0,72
<b>Not Hold</b>	0,73	0,53	0,61

## ENTROPY

ACCURACY: 67.56316218418907

	Precision	Recall	F1-Score
<b>Hold</b>	0,64	0,82	0,72
<b>Not Hold</b>	0,73	0,53	0,61

## MSE

coefficient of determination  $R^2$  of the prediction: 0.280123975749507

Mean squared error: 0.18

Test Variance score: 0.28

### 3. FEATURE IMPORTANCE

INDICATORI SELEZIONATI:

RSI	MFI	CMF
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Nome dataset: 01-01-2019\_30-05-2019\_fs3

#### Parte 1

GINI

ACCURACY: 71.93855981962516

	Precision	Recall	F1-Score
Hold	0,72	0,70	0,71
Not Hold	0,71	0,74	0,73

ENTROPY

ACCURACY: 67.7908779181737

	Precision	Recall	F1-Score
Hold	0,67	0,70	0,68
Not Hold	0,69	0,66	0,67

MSE

coefficient of determination  $R^2$  of the prediction: 0.6938782508656625

Mean squared error: 0.14

Test Variance score: 0.44

#### Parte 2

GINI

ACCURACY: 97.3920130399348

	Precision	Recall	F1-Score
Hold	0,97	0,97	0,97
Not Hold	0,97	0,97	0,97

ENTROPY

ACCURACY: 97.88101059494703

	Precision	Recall	F1-Score
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<b>Hold</b>	0,98	0,98	0,98
<b>Not Hold</b>	0,98	0,98	0,98

## MSE

coefficient of determination  $R^2$  of the prediction: 0.9935913256961144

Mean squared error: 0.04

Test Variance score: 0.83