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sklearn.metrics.r2_score

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`sklearn.metrics.r2_score`(*y_true*, *y_pred*, *sample_weight=None*, *multioutput='uniform_average'*) [source]

R^2 (coefficient of determination) regression score function.

Best possible score is 1.0 and it can be negative (because the model can be arbitrarily worse). A constant model that always predicts the expected value of y, disregarding the input features, would get a R^2 score of 0.0.

Read more in the User Guide.

Parameters: **y_true** : array-like of shape = (n_samples) or (n_samples, n_outputs)

Ground truth (correct) target values.

y_pred : array-like of shape = (n_samples) or (n_samples, n_outputs)

Estimated target values.

sample_weight : array-like of shape = (n_samples), optional

Sample weights.

multioutput : string in ['raw_values', 'uniform_average', 'variance_weighted'] or None or array-like of shape (n_outputs)

Defines aggregating of multiple output scores. Array-like value defines weights used to average scores. Default is "uniform_average".

'raw_values' :

Returns a full set of scores in case of multioutput input.

'uniform_average' :

Scores of all outputs are averaged with uniform weight.

'variance_weighted' :

Scores of all outputs are averaged, weighted by the variances of each individual output.

Changed in version 0.19: Default value of multioutput is 'uniform_average'.

Returns: **z** : float or ndarray of floats

The R^2 score or ndarray of scores if 'multioutput' is 'raw_values'.

Notes

This is not a symmetric function.

Unlike most other scores, R^2 score may be negative (it need not actually be the square of a quantity R).

References

[R228] Wikipedia entry on the Coefficient of determination

Examples

```
>>> from sklearn.metrics import r2_score
>>> y_true = [3, -0.5, 2, 7]
>>> y_pred = [2.5, 0.0, 2, 8]
>>> r2_score(y_true, y_pred)
0.948...
>>> y_true = [[0.5, 1], [-1, 1], [7, -6]]
>>> y_pred = [[0, 2], [-1, 2], [8, -5]]
>>> r2_score(y_true, y_pred, multioutput='variance_weighted')
...
0.938...
>>> y_true = [1,2,3]
>>> y_pred = [1,2,3]
>>> r2_score(y_true, y_pred)
1.0
>>> y_true = [1,2,3]
>>> y_pred = [2,2,2]
>>> r2_score(y_true, y_pred)
0.0
>>> y_true = [1,2,3]
>>> y_pred = [3,2,1]
>>> r2_score(y_true, y_pred)
-3.0
```

Examples using `sklearn.metrics.r2_score`

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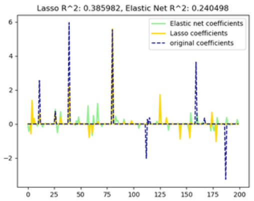
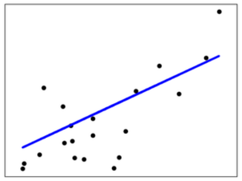


Lasso and Elastic Net for Sparse Signals



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