load_breast_cancer

sklearn.datasets.load_breast_cancer(*, *return_X_y*=*False*, *as_frame*=*False*) [source]

Load and return the breast cancer Wisconsin dataset (classification).

The breast cancer dataset is a classic and very easy binary classification dataset.

Classes	2
Samples per class	212(M),357(B)
Samples total	569
Dimensionality	30
Features	real, positive

The copy of UCI ML Breast Cancer Wisconsin (Diagnostic) dataset is downloaded from: https://archive.ics.uci.edu/dataset/17/breast+cancer+wisconsin+diagnostic

Read more in the User Guide.

Parameters:

return_X_y : *bool, default=False*

If True, returns `(data, target)` instead of a Bunch object. See below for more information about the `data` and `target` object.

> ***Added in version 0.18.***

as_frame : *bool, default=False*

If True, the data is a pandas DataFrame including columns with appropriate dtypes (numeric). The target is a pandas DataFrame or Series depending on the number of target columns. If `return_X_y` is True, then (`data`, `target`) will be pandas DataFrames or Series as described below.

> ***Added in version 0.23.***

Returns:

data : *Bunch*

Dictionary-like object, with the following attributes.

data : *{ndarray, dataframe} of shape (569, 30)*

The data matrix. If `as_frame=True`, `data` will be a pandas DataFrame.

target : *{ndarray, Series} of shape (569,)*

The classification target. If `as_frame=True`, `target` will be a pandas Series.

feature_names : *ndarray of shape (30,)*

The names of the dataset columns.

target_names : *ndarray of shape (2,)*

The names of target classes.

frame : *DataFrame of shape (569, 31)*

Only present when `as_frame=True`. DataFrame with `data` and `target`.

> ***Added in version 0.23.***

DESCR : *str*

The full description of the dataset.

filename : *str*

The path to the location of the data.

> ***Added in version 0.20.***

(data, target) : *tuple if `return_X_y` is True*

A tuple of two ndarrays by default. The first contains a 2D ndarray of shape (569, 30) with each row representing one sample and each column representing the features. The second ndarray of shape (569,) contains the target samples. If `as_frame=True`, both arrays are pandas objects, i.e. `X` a dataframe and `y` a series.

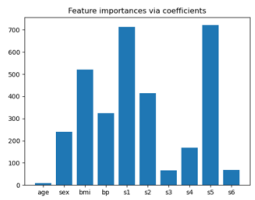
> ***Added in version 0.18.***

Examples

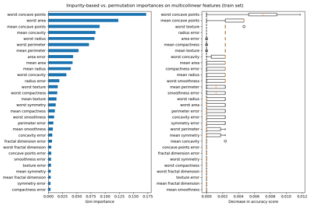
Let's say you are interested in the samples 10, 50, and 85, and want to know their class name.

```
>>> from sklearn.datasets import load_breast_cancer
>>> data = load_breast_cancer()
>>> data.target[[10, 50, 85]]
array([0, 1, 0])
>>> list(data.target_names)
[np.str_('malignant'), np.str_('benign')]
```

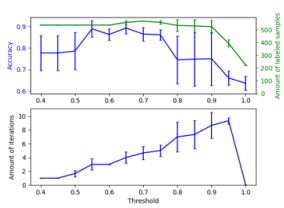
Gallery examples



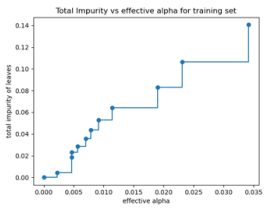
Model-based and sequential feature selection



Permutation Importance with Multicollinear or Correlated Features



Effect of varying threshold for self-training



Post pruning decision trees with cost complexity pruning

Previous
get_data_home

Next
load_diabetes