sklearn.datasets.load_digits

`sklearn.datasets.load_digits`(*, *n_class=10*, *return_X_y=False*, *as_frame=False*) [source]

Load and return the digits dataset (classification).

Each datapoint is a 8x8 image of a digit.

Classes	10
Samples per class	~180
Samples total	1797
Dimensionality	64
Features	integers 0-16

Read more in the User Guide.

Parameters:

n_class : *integer, between 0 and 10, optional (default=10)*
The number of classes to return.

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.

New 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.

New in version 0.23.

Returns:

data : *Bunch*
Dictionary-like object, with the following attributes.

data : *{ndarray, dataframe} of shape (1797, 64)*
The flattened data matrix. If `as_frame=True`, `data` will be a pandas DataFrame.

target: {ndarray, Series} of shape (1797,)
The classification target. If `as_frame=True`, `target` will be a pandas Series.

feature_names: list
The names of the dataset columns.

target_names: list
The names of target classes.

New in version 0.20.

frame: DataFrame of shape (1797, 65)
Only present when `as_frame=True`. DataFrame with `data` and `target`.

New in version 0.23.

images: {ndarray} of shape (1797, 8, 8)
The raw image data.

DESCR: str
The full description of the dataset.

(data, target) : *tuple if `return_X_y` is True*
New in version 0.18.

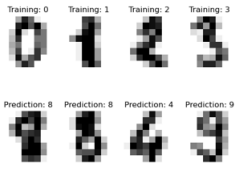
This is a copy of the test set of the UCI ML hand-written digits datasets

https://archive.ics.uci.edu/ml/datasets/Optical+Recognition+of+Handwritten+Digits

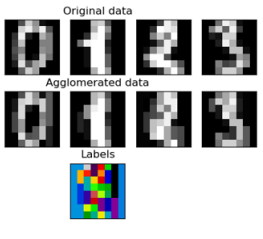
To load the data and visualize the images:

```
>>> from sklearn.datasets import load_digits
>>> digits = load_digits()
>>> print(digits.data.shape)
(1797, 64)
>>> import matplotlib.pyplot as plt
>>> plt.gray()
>>> plt.matshow(digits.images[0])
>>> plt.show()
```

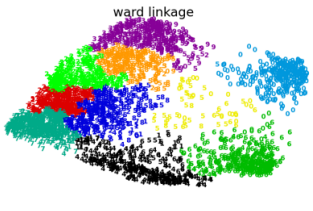
Examples using `sklearn.datasets.load_digits`



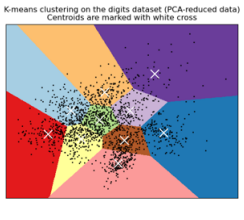
Recognizing hand-written digits



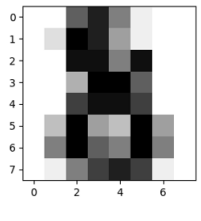
Feature agglomeration



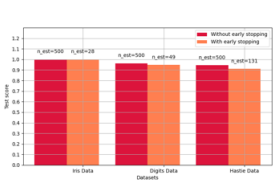
Various Agglomerative Clustering on a 2D embedding of digits



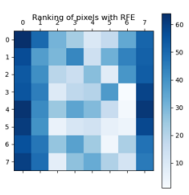
A demo of K-Means clustering on the handwritten digits data



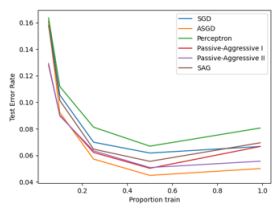
The Digit Dataset



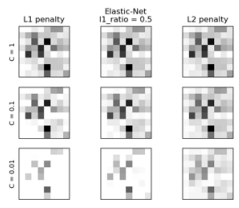
Early stopping of Gradient Boosting



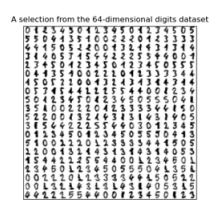
Recursive feature elimination



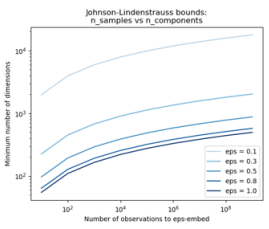
Comparing various online solvers



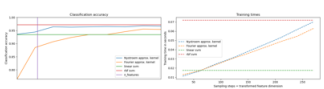
L1 Penalty and Sparsity in Logistic Regression



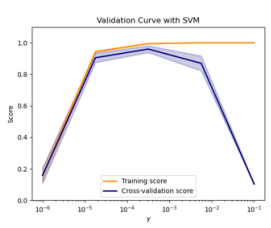
Manifold learning on handwritten digits: Locally Linear Embedding, Isomap...



The Johnson-Lindenstrauss bound for embedding with random projections



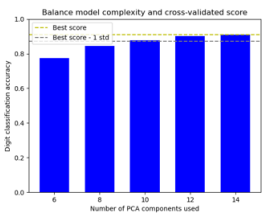
Explicit feature map approximation for RBF kernels



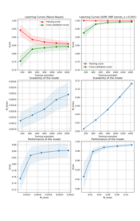
Plotting Validation Curves

Parameter estimation using grid search with cross-validation

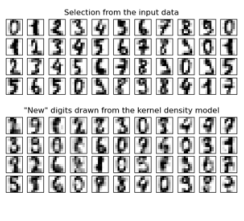
Comparing randomized search and grid search for hyperparameter estimation



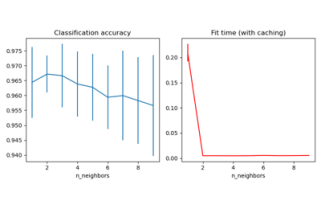
Balance model complexity and cross-validated score



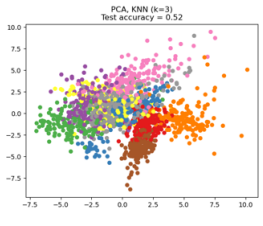
Plotting Learning Curves



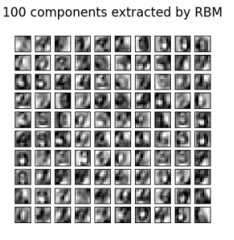
Kernel Density Estimation



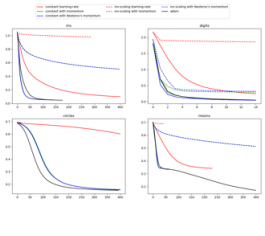
Caching nearest neighbors



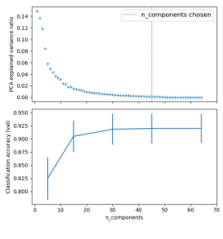
Dimensionality Reduction with Neighborhood Components Analysis



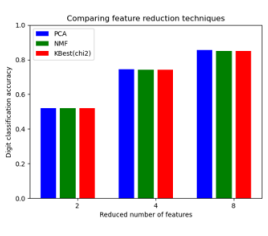
Restricted Boltzmann Machine features for [illegible]tion



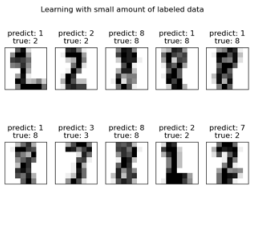
Compare Stochastic learning strategies for MLPClassifier



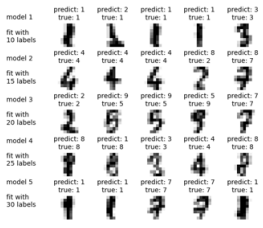
Pipelining: chaining a PCA and a logistic regression



Selecting dimensionality reduction with Pipeline and GridSearchCV

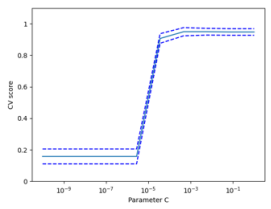


Label Propagation digits: Demonstrating performance



[Label Propagation digits active learning]

[Digits Classification Exercise]



[Cross-validation on Digits Dataset Exercise]