

Part I

Python

Part II

Scikit-Learn

Chapter 1

feature_extraction

1.1 DictVectorizer

1.2 text

1.2.1 CounterVector

1.2.2 TfidfVectorizer

Table 1.1: feature_extraction

CounterVector	DictVectorizer	TfidfVectorizer
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Chapter 2

preprocessing

2.1 PolynomialFeatures

Table 2.1: preprocessing

PolynomialFeatures

Chapter 3

impute

3.1 SimpleImputer

Table 3.1: impute

[SimpleImputer](#)

Chapter 4

pipeline

4.1 make_pipeline

Table 4.1: pipeline

[make_pipeline](#)

Chapter 5

datasets

5.1 make_blobs

5.2 make_friedman1

```
make_friedman1(n_samples=100, n_features=10, *, noise=0.0, random_state=None)
```

Inputs X are independent features uniformly distributed on the interval $[0, 1]$. The output y is created according to the formula:

$$y = 10 \sin(\pi x_1 x_2) + 20(x_3 - \frac{1}{2})^2 + 10x_4 + 5x_5 + \text{Gaussian Noise}(0, \sigma) \quad (5.1)$$

A synthetic data set called *Friedman-1*, originally created by Jerome Friedman in 1991 to explore how well his new multivariate adaptive regression splines (MARS) algorithm was fitting high-dimensional data.

This data set was carefully generated to evaluate a regression method's ability to only pick up true feature dependencies in the data set and ignore others.

Table 5.2: make_friedman1 主要参数

Properties	Names	Descriptions
Parameters	<code>n_samples: int, default=100</code>	The number of samples.
Parameters	<code>n_features: int, default=10</code>	The number of features. Should be at least 5.
Parameters	<code>noise: float, default=0.0</code>	The standard deviation of the gaussian noise applied to the output.
Returns	<code>X: ndarray of shape (n_samples, n_features)</code>	The input samples.
Returns	<code>y: ndarray of shape (n_samples,)</code>	The output values.

Table 5.1: datasets

make_blobs	fetch_20newsgroups	make_friedman1	make_friedman2	make_friedman3
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5.3 `make_friedman2`

5.4 `make_friedman3`

5.5 `fetch_20newsgroups`

Chapter 6

naive_bayes

6.1 GaussianNB

6.2 MultinomialNB

Table 6.1: naive_bayes

GaussianNB	MultinomialNB
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Chapter 7

metrics

7.1 confusion_matrix

Table 7.1: metrics

[confusion_matrix](#)

Chapter 8

linear_model

8.1 LinearRegression

Table 8.1: linear_model

LinearRegression

Part III

NumPy

Chapter 9

routines

9.1 Mathematical functions

9.1.1 prod

Table 9.1: routines: Mathematical functions

prod
