



UNIVERSIDADE  
CATÓLICA  
PORTUGUESA

BRAGA

# Machine Learning

Session 20 - PL

## Neural Networks

Ciência de Dados Aplicada

2023/2024

# Perceptron in Scikit-Learn

- [https://scikit-learn.org/stable/modules/generated/sklearn.linear\\_model.Perceptron.html](https://scikit-learn.org/stable/modules/generated/sklearn.linear_model.Perceptron.html)

## `sklearn.linear_model.Perceptron`

```
class sklearn.linear_model.Perceptron(*, penalty=None, alpha=0.0001, l1_ratio=0.15, fit_intercept=True,
max_iter=1000, tol=0.001, shuffle=True, verbose=0, eta0=1.0, n_jobs=None, random_state=0, early_stopping=False,
validation_fraction=0.1, n_iter_no_change=5, class_weight=None, warm_start=False)
```

[\[source\]](#)

- [https://scikit-learn.org/stable/modules/generated/sklearn.neural\\_network.MLPClassifier.html](https://scikit-learn.org/stable/modules/generated/sklearn.neural_network.MLPClassifier.html)

## `sklearn.neural_network.MLPClassifier`

```
class sklearn.neural_network.MLPClassifier(hidden_layer_sizes=(100,), activation='relu', *, solver='adam',
alpha=0.0001, batch_size='auto', learning_rate='constant', learning_rate_init=0.001, power_t=0.5, max_iter=200, shuffle=True,
random_state=None, tol=0.0001, verbose=False, warm_start=False, momentum=0.9, nesterovs_momentum=True,
early_stopping=False, validation_fraction=0.1, beta_1=0.9, beta_2=0.999, epsilon=1e-08, n_iter_no_change=10,
max_fun=15000)
```

[\[source\]](#)

# Perceptron in Scikit-Learn

- [https://scikit-learn.org/stable/modules/generated/sklearn.neural\\_network.MLPRegressor.html](https://scikit-learn.org/stable/modules/generated/sklearn.neural_network.MLPRegressor.html)

## `sklearn.neural_network.MLPRegressor`

```
class sklearn.neural_network.MLPRegressor(hidden_layer_sizes=(100,), activation='relu', *, solver='adam',  
alpha=0.0001, batch_size='auto', learning_rate='constant', learning_rate_init=0.001, power_t=0.5, max_iter=200, shuffle=True,  
random_state=None, tol=0.0001, verbose=False, warm_start=False, momentum=0.9, nesterovs_momentum=True,  
early_stopping=False, validation_fraction=0.1, beta_1=0.9, beta_2=0.999, epsilon=1e-08, n_iter_no_change=10,  
max_fun=15000)
```

[\[source\]](#)

# Exercises:

- Notebooks on the github repository:
  - Notebook with examples:
    - `Notebooks/session_20/examples.ipynb`
  - Notebook with exercises:
    - `Notebooks/session_20/exercises.ipynb`