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Oct 21, 2019



Machine Learning Algorithms- Fit and predict train and test data

Hi,

In this post, we will learn how machine learning algorithm work, here we go through basic concepts of all the machine learning algorithms and how to fit and predict train and test data in machine learning.

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Machine Learning Algorithms- Fit and predict train and test data

Types of ML Algorithms:

ML Algorithms divided into three categories -

1. [Supervised Learning](#)
2. [Unsupervised Learning](#)
3. [Reinforcement Learning](#)

Supervised Learning

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- [Regression,](#)
- [Decision Tree,](#)
- [Random Forest,](#)
- [KNN,](#)
- [Logistic Regression, etc.](#)

Unsupervised Learning

This algorithm work without having any target or outcome variable to predict. It is used for the clustering population in different groups, which is used for segmenting customers in different groups.

Types of Unsupervised Learning

- [Apriori algorithm,](#)
- [K-means](#)

Reinforcement Learning

This algorithm used from past experience and tries to capture the best possible knowledge to find accurate decisions.

Types of Reinforcement Learning

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```
# importing required libraries
```

```
import pandas as pd
from sklearn.linear_model import LinearRegression
from sklearn.metrics import mean_squared_error
```

```
1  ''' For more visit
2
3  https://www.codersarts.com
4
5  '''
6
7
8  import pandas as pd
9  from sklearn.linear_model import LinearRegression
10 from sklearn.metrics import mean_squared_error
11
12 # read the train and test dataset
13
14 train_data = pd.read_csv('train_data.csv')
15 test_data = pd.read_csv('test_data.csv')
16
17 print(train_data.head())
18
19 # shape of the dataset
20
21 print('\nShape of training data :',train_data.shape)
22 print('\nShape of testing data :',test_data.shape)
23
24 # Predict the missing target variable in the test data
25
```

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```
1  ''' For more visit
2  https://www.codersarts.com
3  '''
4
5
6  import pandas as pd
7  from sklearn.linear_model import LogisticRegression
8  from sklearn.metrics import accuracy_score
9
10
11 # read the train and test dataset
12
13 train_data = pd.read_csv('train_data.csv')
14 test_data = pd.read_csv('test_data.csv')
15
16 print(train_data.head())
17
18 # shape of the dataset
19
20 print('\nShape of training data :',train_data.shape)
21 print('\nShape of testing data :',test_data.shape)
22
23 # Predict the missing target variable in the test data
24
25
```

Decision Tree

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```
7 from sklearn.metrics import confusion_matrix
8 from sklearn.metrics import accuracy_score
9
10
11 # read the train and test dataset
12
13 train_data = pd.read_csv('train_data.csv')
14 test_data = pd.read_csv('test_data.csv')
15
16 print(train_data.head())
17
18 # shape of the dataset
19
20 print('\nShape of training data : ',train_data.shape)
21 print('\nShape of testing data : ',test_data.shape)
22
23 # Predict the missing target variable in the test data
24
25
```

SVM (Support Vector Machine)

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```
7 from sklearn.metrics import roc
8 from sklearn.metrics import accuracy_score
9
10 from sklearn.metrics import mean_squared_error
11
12 # read the train and test dataset
13
14 train_data = pd.read_csv('train_data.csv')
15 test_data = pd.read_csv('test_data.csv')
16
17 print(train_data.head())
18
19 # shape of the dataset
20
21 print('\nShape of training data :',train_data.shape)
22 print('\nShape of testing data :',test_data.shape)
23
24 # Predict the missing target variable in the test data
25
```

Naive Bayes

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```
7 from sklearn.metrics import confusion_matrix
8 from sklearn.metrics import accuracy_score
9
10 # read the train and test dataset
11
12 train_data = pd.read_csv('train_data.csv')
13 test_data = pd.read_csv('test_data.csv')
14
15 print(train_data.head())
16
17 # shape of the dataset
18
19 print('\nShape of training data :',train_data.shape)
20 print('\nShape of testing data :',test_data.shape)
21
22 # Predict the missing target variable in the test data
23
24
25 train_x = train_data.drop(columns=['Sales_item'],axis=1)
```

KNN (k- Nearest Neighbors)

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```
7 from sklearn.metrics import accuracy_score
8 from sklearn.metrics import accuracy_score
9
10 # read the train and test dataset
11
12 train_data = pd.read_csv('train_data.csv')
13 test_data = pd.read_csv('test_data.csv')
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20 print('\nShape of testing data :',test_data.shape)
21
22 # Predict the missing target variable in the test data
23
24
25 train_x = train_data.drop(columns=['Sales_item'],axis=1)
```

K-Means

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```
7 from sklearn.metrics import mean_squared_error
8 from sklearn.metrics import mean_squared_error
9
10 # read the train and test dataset
11
12 train_data = pd.read_csv('train_data.csv')
13 test_data = pd.read_csv('test_data.csv')
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20 print('\nShape of testing data :',test_data.shape)
21
22 # Predict the missing target variable in the test data
23
24
25 train_x = train_data.drop(columns=['Sales_item'],axis=1)
```

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Tel: (+91) 0120 4118730

Time : 10 : 00 AM - 08 : 00 PM IST

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