

Multiple Linear Regression. In-class Exercise 4

EL-GY 6143 Intro Machine Learning. Prof. Sundeep Rangan

Question

Complete the following cells in demo1_glucose.ipynb

You are given target values `y` and features `x1` and `x2` below. Fit the model on the first 4 data points and test the model on the fifth data point. You may want to use the following steps

- Construct the training data `X_tr, y_tr`
- Create a regression object `regr = linear_model.LinearRegression()`
- Fit the model with the `regr.fit()` method
- Predict the value on the test value with the `regr.predict()`

```
1 x1 = np.array([0,1,3,5,4])
2 x2 = np.array([0,0.7, 4.3, 15.1, 13.2])
3 y = np.array([-2, -0.9, 1.5, 18, 13])
4
```

Solution

```
1 x1 = np.array([0,1,3,5,4])
2 x2 = np.array([0,0.7, 4.3, 15.1, 13.2])
3 y = np.array([-2, -0.9, 1.5, 18, 13])
4
5 # TODO
6 X = np.column_stack((x1,x2))
7 Xtr = X[:4,:]
8 ytr = y[:4]
9
10 # Regression object
11 regr = linear_model.LinearRegression()
12 regr.fit(Xtr,ytr)
13
14 # Test. Note that you will need to make sure Xts is a (1,2) array
15 Xts = X[4:,:]
16 yts = y[4:]
17 yhat = regr.predict(Xts)
18 print('Predicted: %f' % yhat)
19 print('Actual:    %f' % yts)
20
```

Predicted: 15.981708

Actual: 13.000000