

Teams and Channels | General | xMachine Learning - Colab xML practice - Colab x +

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Machine Learning ☆

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```
import pandas as pd
a=pd.read_csv('Real estate.csv')
a
```

	No	X1 transaction date	X2 house age	X3 distance to the nearest MRT station	X4 number of convenience stores	X5 latitude	X6 longitude	Y house price of unit area
0	1	2012.917	32.0	84.87882	10	24.98298	121.54024	37.9
1	2	2012.917	19.5	306.59470	9	24.98034	121.53951	42.2
2	3	2013.583	13.3	561.98450	5	24.98746	121.54391	47.3
3	4	2013.500	13.3	561.98450	5	24.98746	121.54391	54.8
4	5	2012.833	5.0	390.56840	5	24.97937	121.54245	43.1
...
409	410	2013.000	13.7	4082.01500	0	24.94155	121.50381	15.4
410	411	2012.667	5.6	90.45606	9	24.97433	121.54310	50.0
411	412	2013.250	18.8	390.96960	7	24.97923	121.53986	40.6
412	413	2013.000	8.1	104.81010	5	24.96674	121.54067	52.5
...

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```
b=a.drop(['No','Y house price of unit area'],axis=1)
b
```

	X1 transaction date	X2 house age	X3 distance to the nearest MRT station	X4 number of convenience stores	X5 latitude	X6 longitude
0	2012.917	32.0	84.87882	10	24.98298	121.54024
1	2012.917	19.5	308.59470	9	24.98034	121.53951
2	2013.583	13.3	561.98450	5	24.98746	121.54391
3	2013.500	13.3	561.98450	5	24.98746	121.54391
4	2012.833	6.0	390.66840	5	24.97937	121.54245
...
409	2013.000	13.7	4082.01500	0	24.94155	121.50381
410	2012.667	5.6	90.45606	9	24.97433	121.54310
411	2013.250	18.8	390.96960	7	24.97923	121.53988
412	2013.000	8.1	104.81010	5	24.96674	121.54067
413	2013.500	6.5	90.45606	9	24.97433	121.54310

414 rows x 6 columns

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414 rows x 6 columns

```
c=a['Y house price of unit area']  
c
```

	Y house price of unit area
0	37.9
1	42.2
2	47.3
3	54.8
4	43.1
...	...
409	15.4
410	50.0
411	40.6
412	52.5
413	63.9

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```
from sklearn.preprocessing import PolynomialFeatures
from sklearn.model_selection import train_test_split
from sklearn.linear_model import LinearRegression
import numpy as np
from sklearn.metrics import mean_squared_error, mean_absolute_error
z=[]
x=[]
for i in range(1,10):
    p=PolynomialFeatures(degree=i)
    q=p.fit_transform(b)
    x_train,x_test,y_train,y_test=train_test_split(q,c,test_size=0.3)
    r=LinearRegression()
    s=r.fit(x_train,y_train)
    t=s.predict(x_train)
    u=s.predict(x_test)
    v=np.sqrt(mean_squared_error(y_train,t))
    w=np.sqrt(mean_squared_error(y_test,u))
    z.append(v)
    x.append(w)

import matplotlib.pyplot as plt
plt.plot(range(1,6),z[:5],label='name')
plt.plot(range(1,6),x[:5],label='christ')
```

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```
w=np.sqrt(mean_squared_error(y_test,u))
z.append(v)
x.append(w)
```

```
import matplotlib.pyplot as plt
plt.plot(range(1,6),z[:5],label='name')
plt.plot(range(1,6),x[:5],label='christ')
plt.xlabel='x'
plt.ylabel='y'
plt.legend()
plt.show()
```

800
600
400

name
christ

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x	name	christ
1.0	0	0
1.5	0	0
2.0	0	0
2.5	0	0
3.0	0	0
3.5	0	0
4.0	0	0
4.5	0	400
5.0	0	850

[] poly=PolynomialFeatures(degree=3)

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```
poly=PolynomialFeatures(degree=3)
line=LinearRegression()
line.fit(poly.fit_transform(b),c)
```

LinearRegression

```
LinearRegression()
```

```
[ ] from joblib import dump,load
    dump(poly,'poly.joblib')
```

```
[ ] 'poly.joblib'
```

```
[ ] dump(line,'line.joblib')
```

```
[ ] 'line.joblib'
```

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