

## Lab-6

Implement the Linear Regression algorithm in order to fit data points.  
Select appropriate data set for your experiment and draw graphs.

```
In [17]: import numpy as np
import matplotlib.pyplot as plt
import pandas as pd
from sklearn.metrics import r2_score

In [9]: dataset = pd.read_csv('salary_dataset.csv')
X = dataset.iloc[:, :-1].values
y = dataset.iloc[:, 1].values

In [10]: from sklearn.model_selection import train_test_split
X_train, X_test, y_train, y_test = train_test_split(X, y, test_size=1/3, random_state=0)

In [11]: # Fitting Simple Linear Regression to the Training set
from sklearn.linear_model import LinearRegression
regressor = LinearRegression()
regressor.fit(X_train, y_train)

Out[11]: LinearRegression()

In [15]: # Predicting the Test set results
y_pred = regressor.predict(X_test)
y_pred

Out[15]: array([ 40835.10590871, 123079.39940819,  65134.55626083,  63265.36777221,
        115602.64545369, 108125.8914992 , 116537.23969801,  64199.96201652,
        76349.68719258, 100649.1375447 ])
```

```
In [18]: r2_score(y_test,y_pred)

Out[18]: 0.9749154407708353

In [19]: # Visualizing the Training set results
viz_train = plt
viz_train.scatter(X_train, y_train, color='red')
viz_train.plot(X_train, regressor.predict(X_train), color='blue')
viz_train.title('Salary VS Experience (Training set)')
viz_train.xlabel('Year of Experience')
viz_train.ylabel('Salary')
viz_train.show()
```



```
In [14]: # Visualizing the Test set results
viz_test = plt
viz_test.scatter(X_test, y_test, color='red')
viz_test.plot(X_train, regressor.predict(X_train), color='blue')
viz_test.title('Salary VS Experience (Test set)')
viz_test.xlabel('Year of Experience')
viz_test.ylabel('Salary')
viz_test.show()
```

