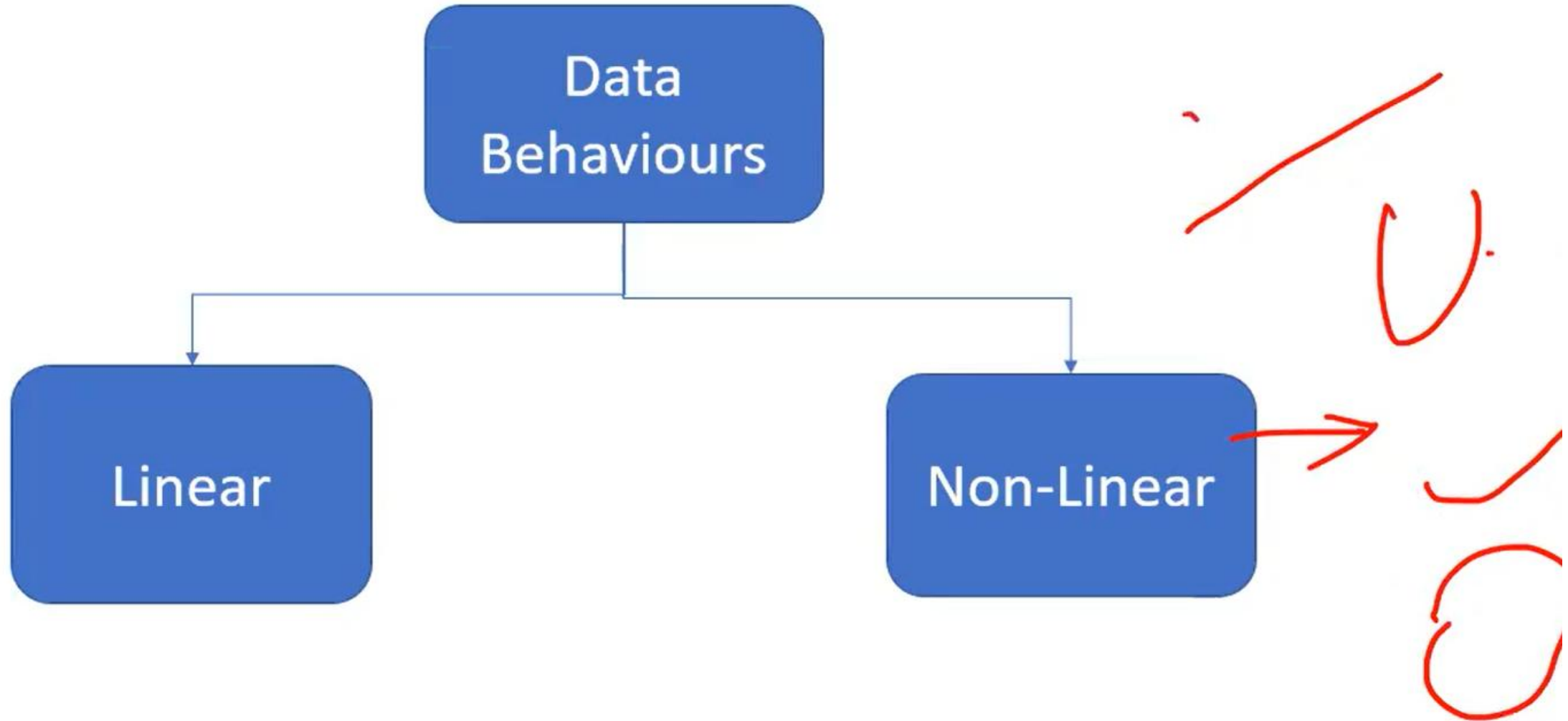
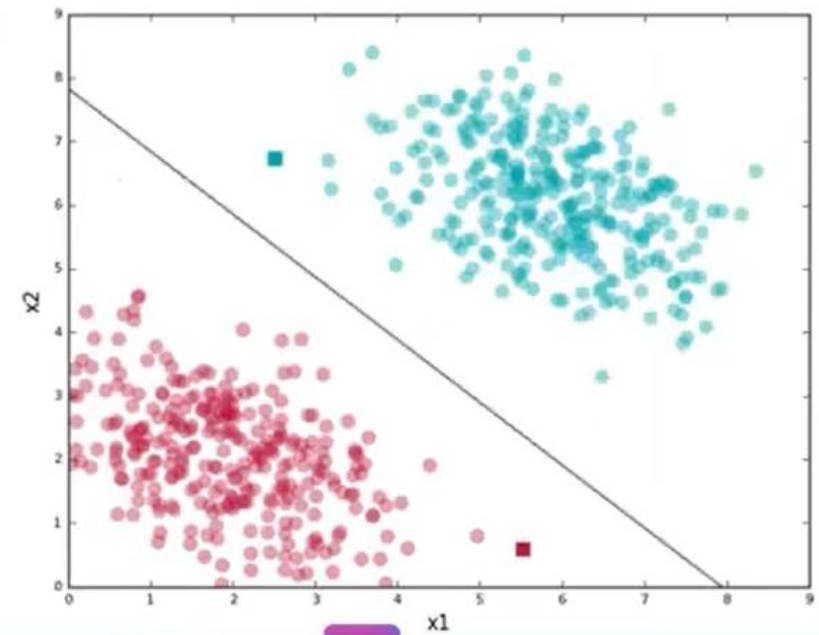
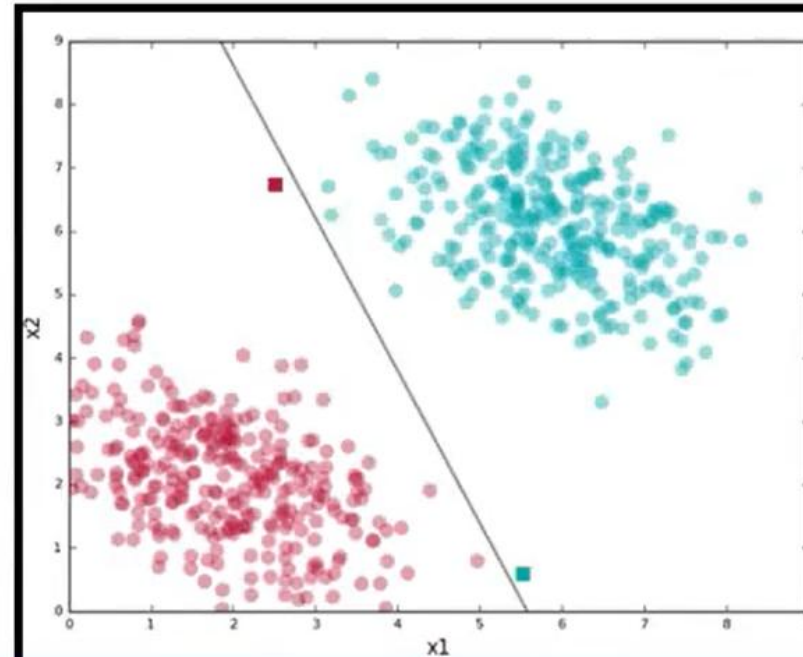
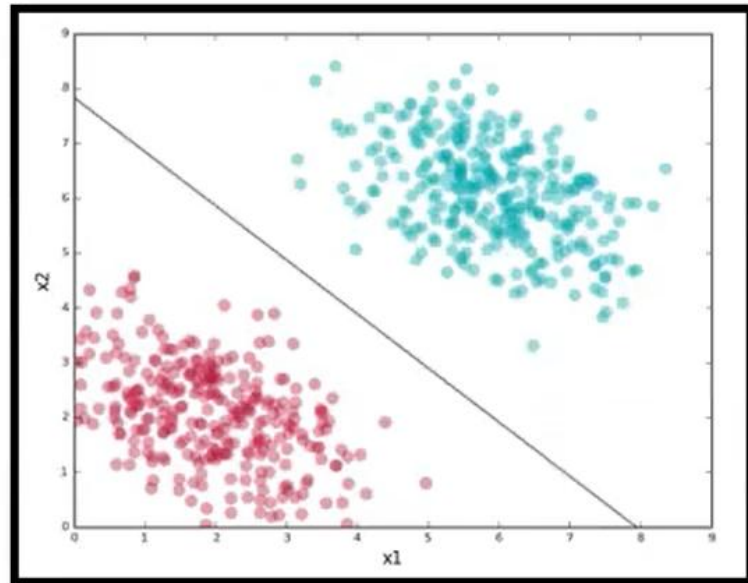
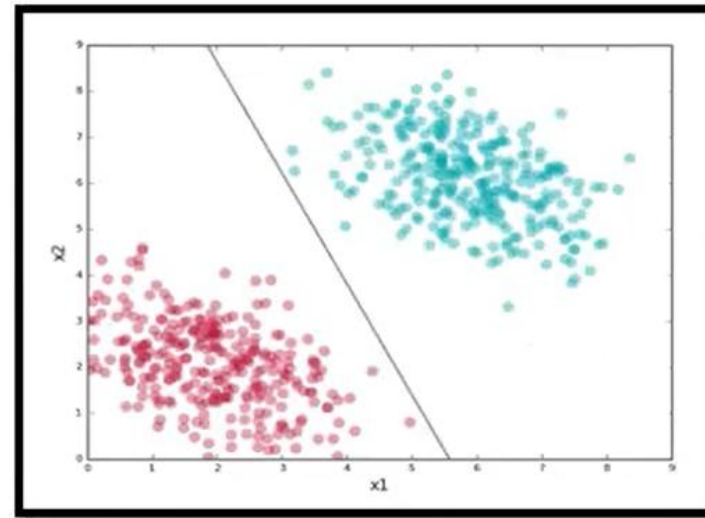
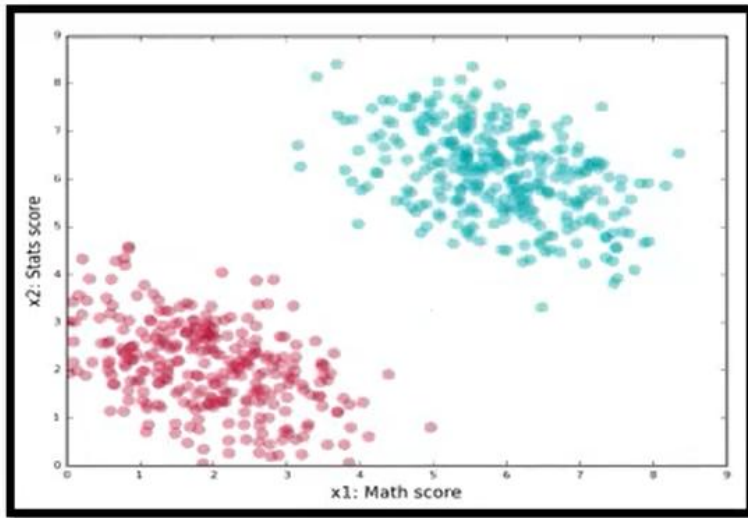


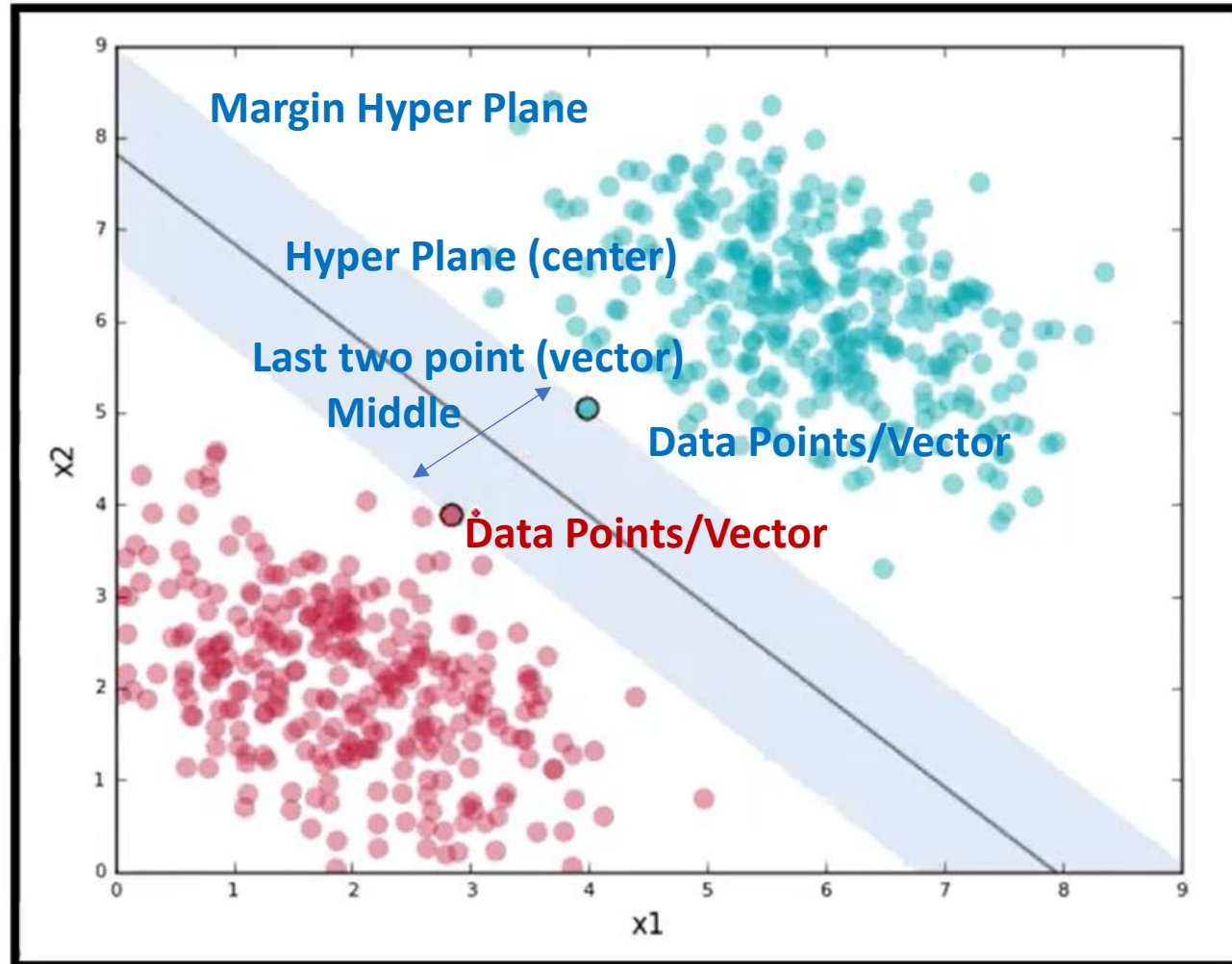
Data Behaviour



Support Vector Machine

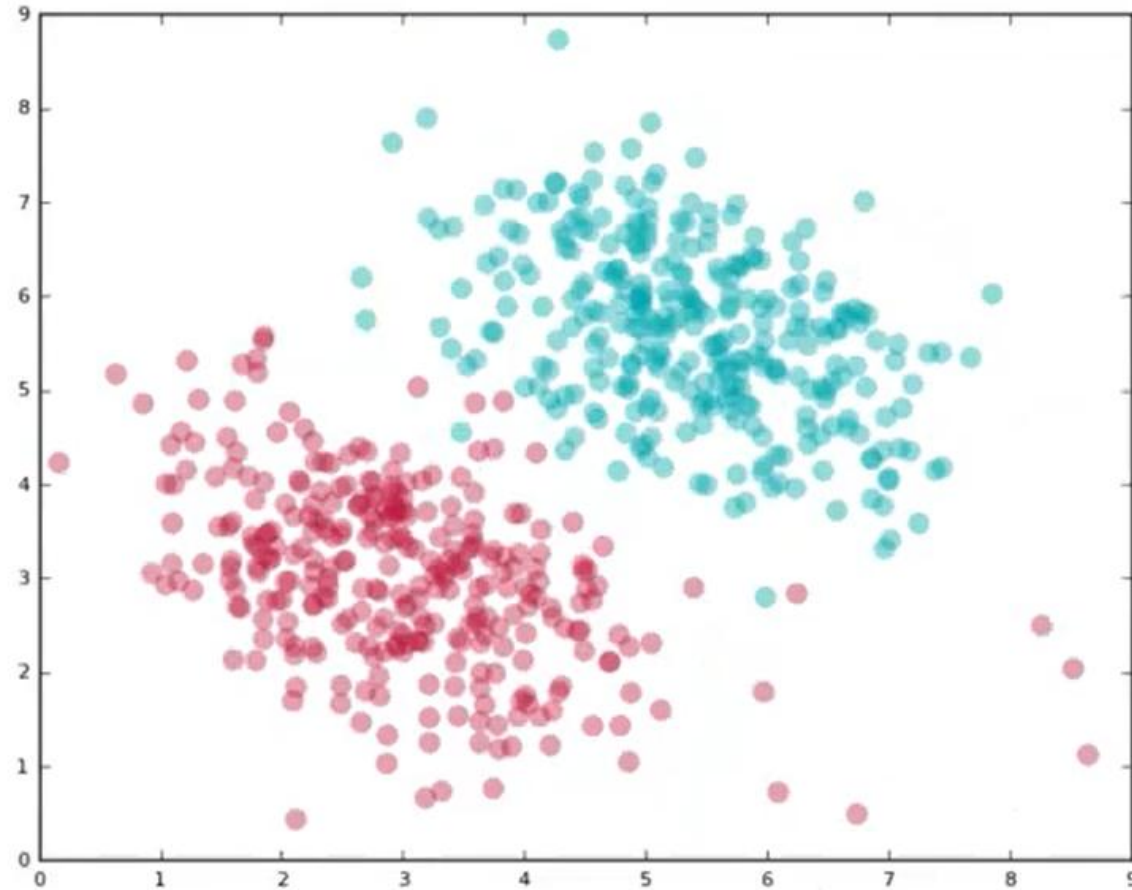


Support Vector Machine



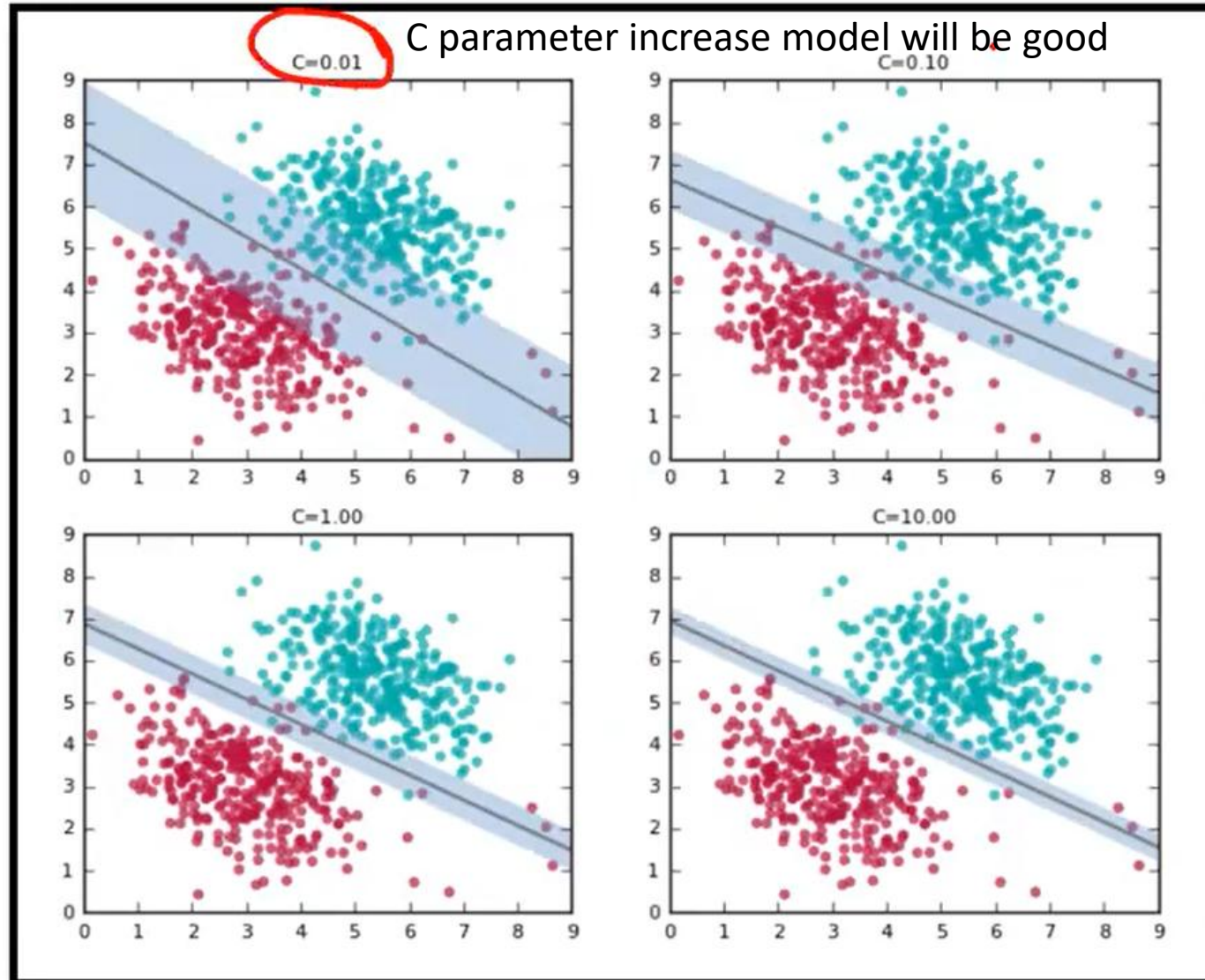
Support Vector Machine

What if closer data point Exists?



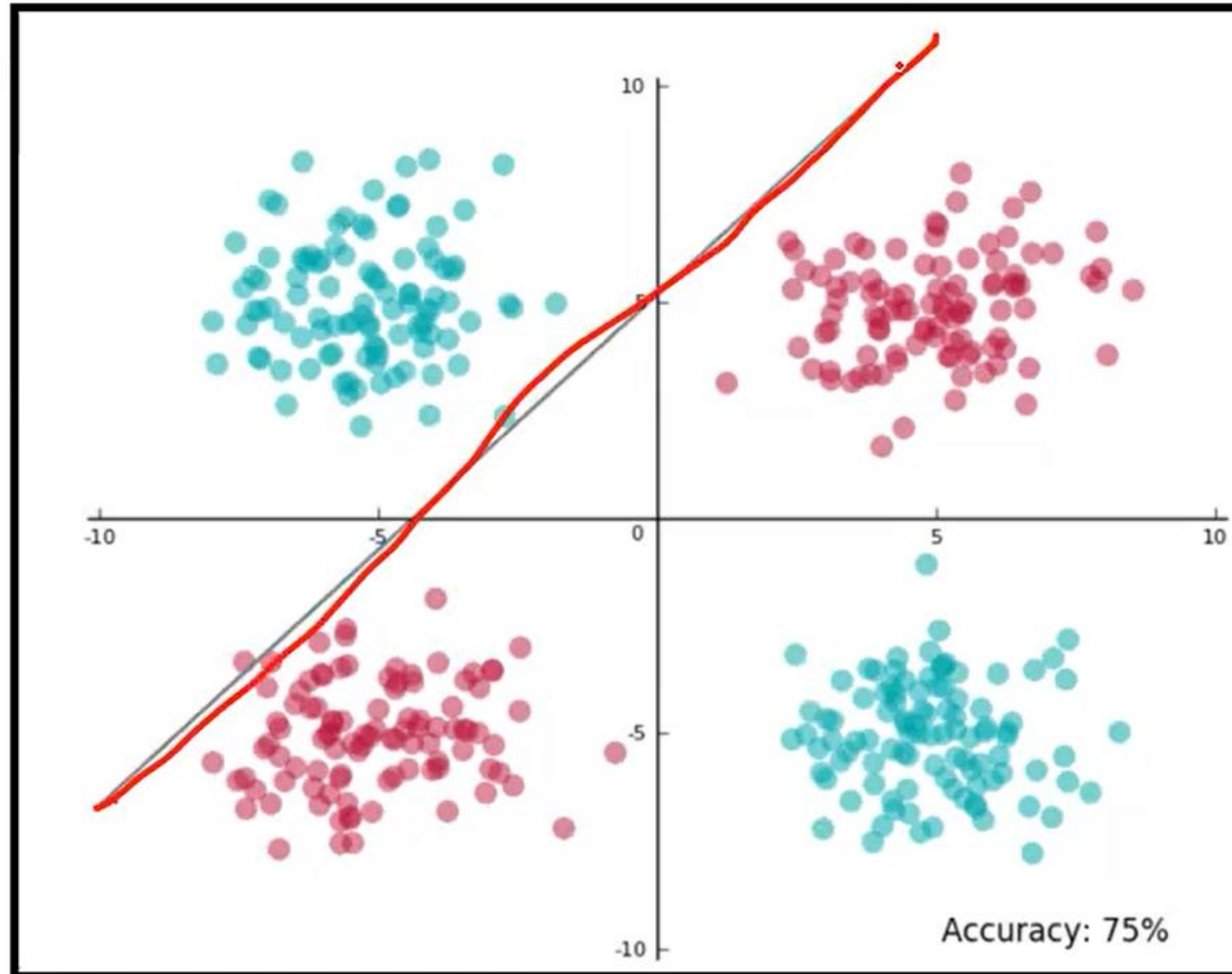
Support Vector Machine

What if closer data point Exists?



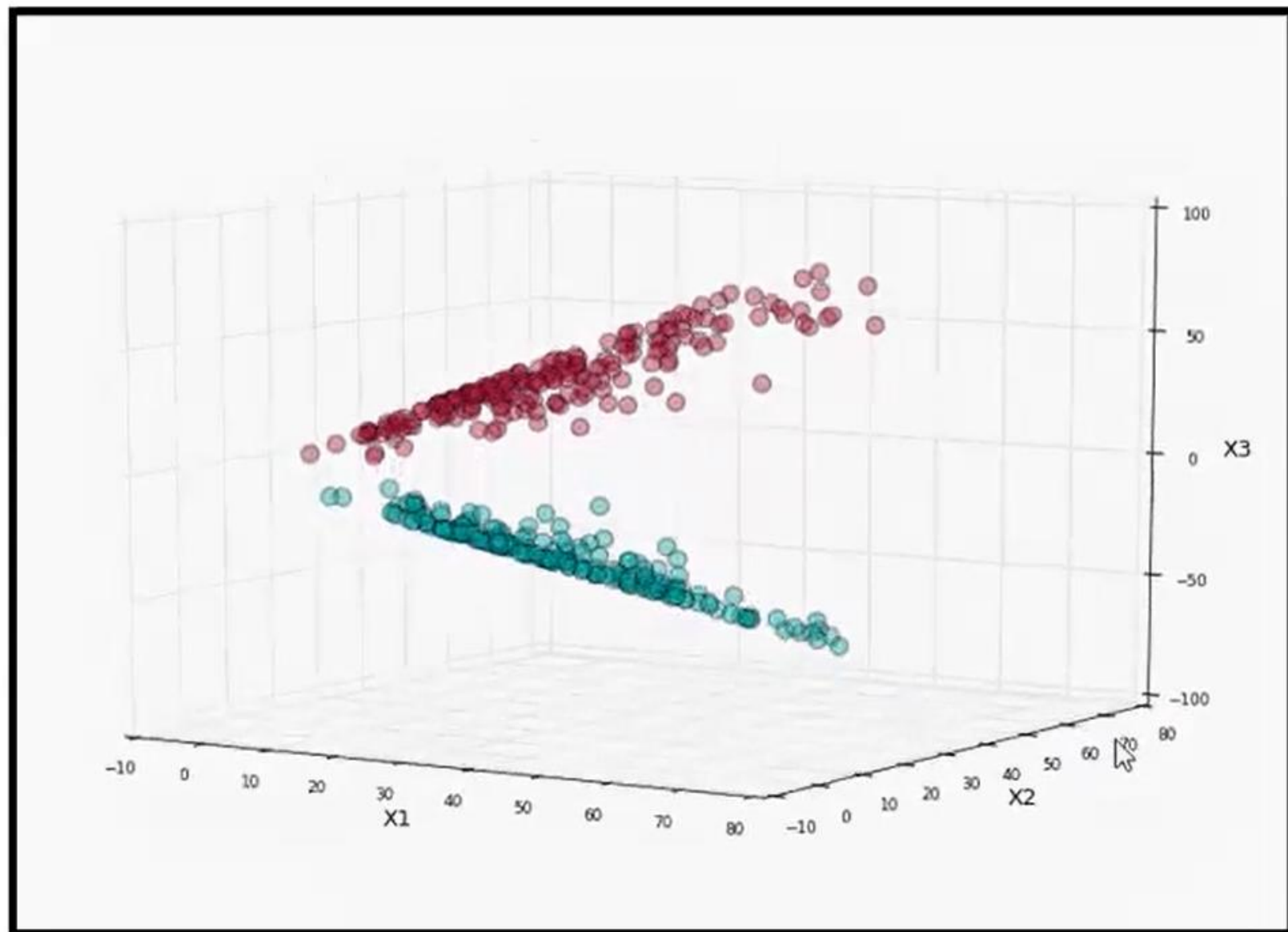
Support Vector Machine

Non- Separable Dataset



Support Vector Machine

Non- Separable Dataset- Three Dimensional



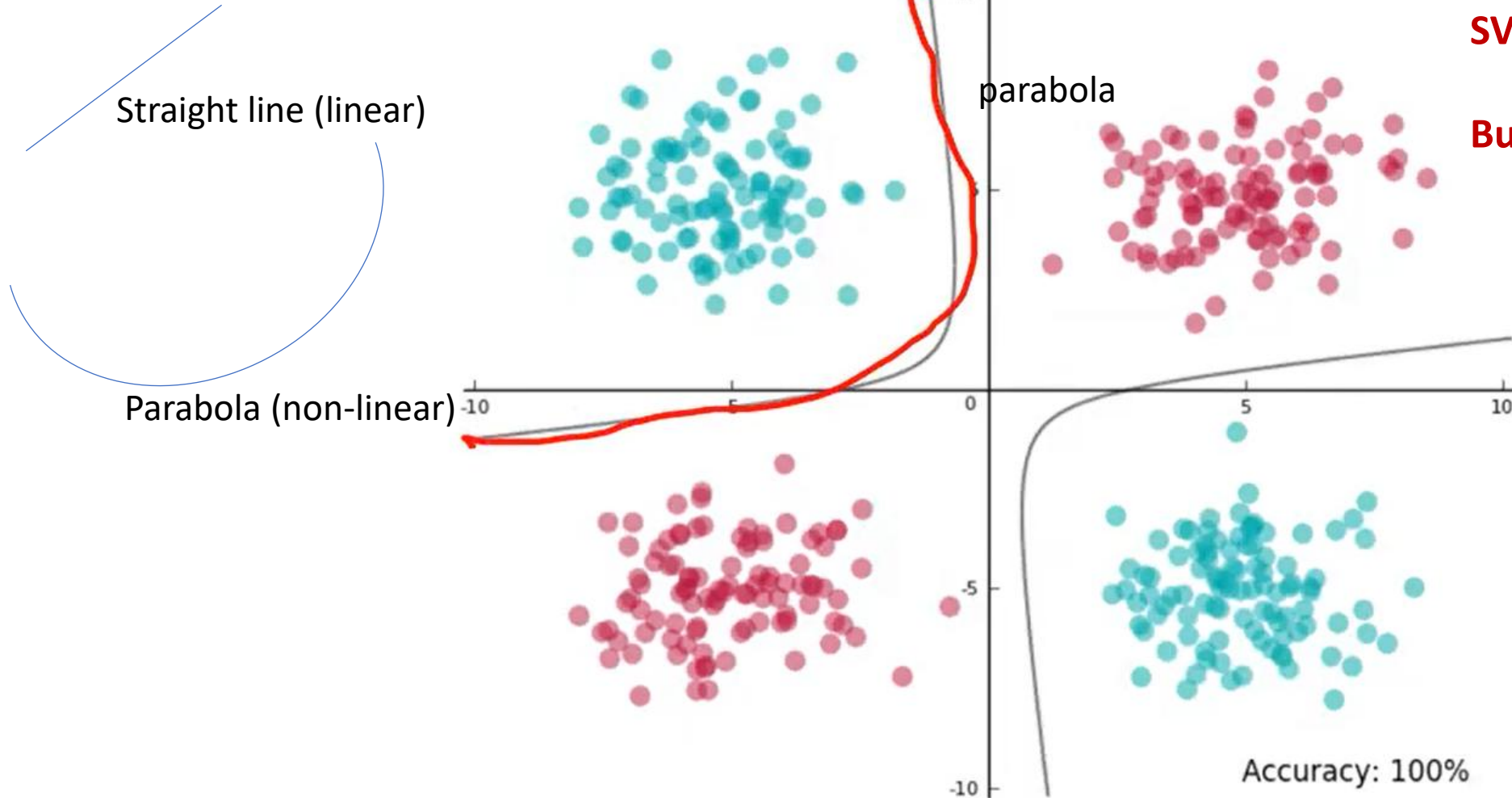
Support Vector Machine

Non- Separable Dataset- Three Dimensional -3 Plane

Segregate/separate

SVM-works for Non-linear data

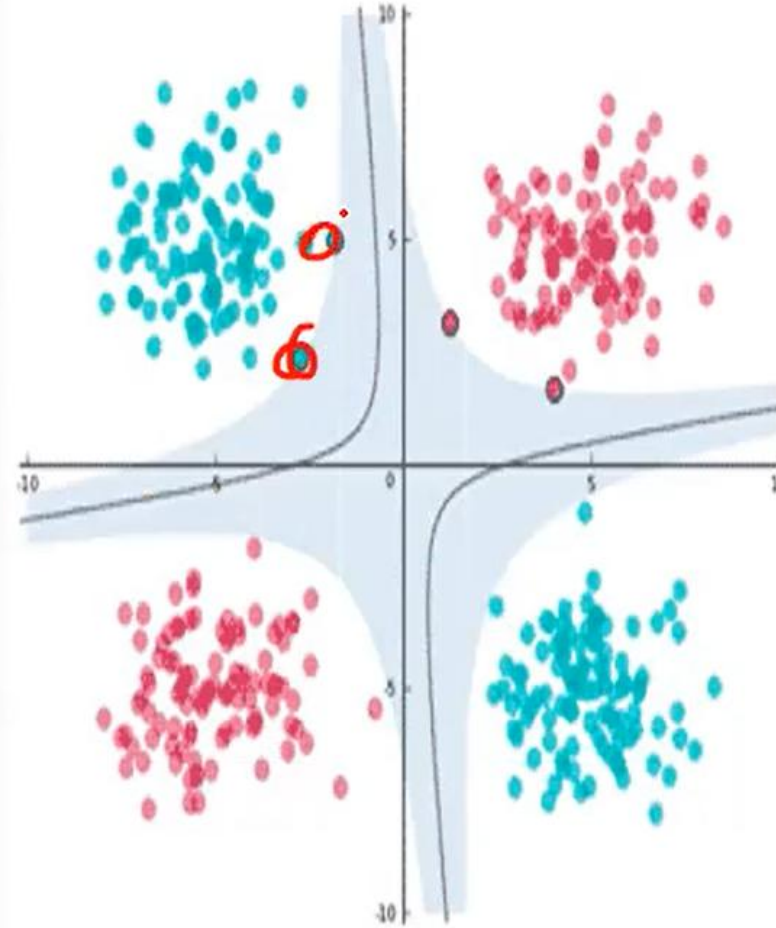
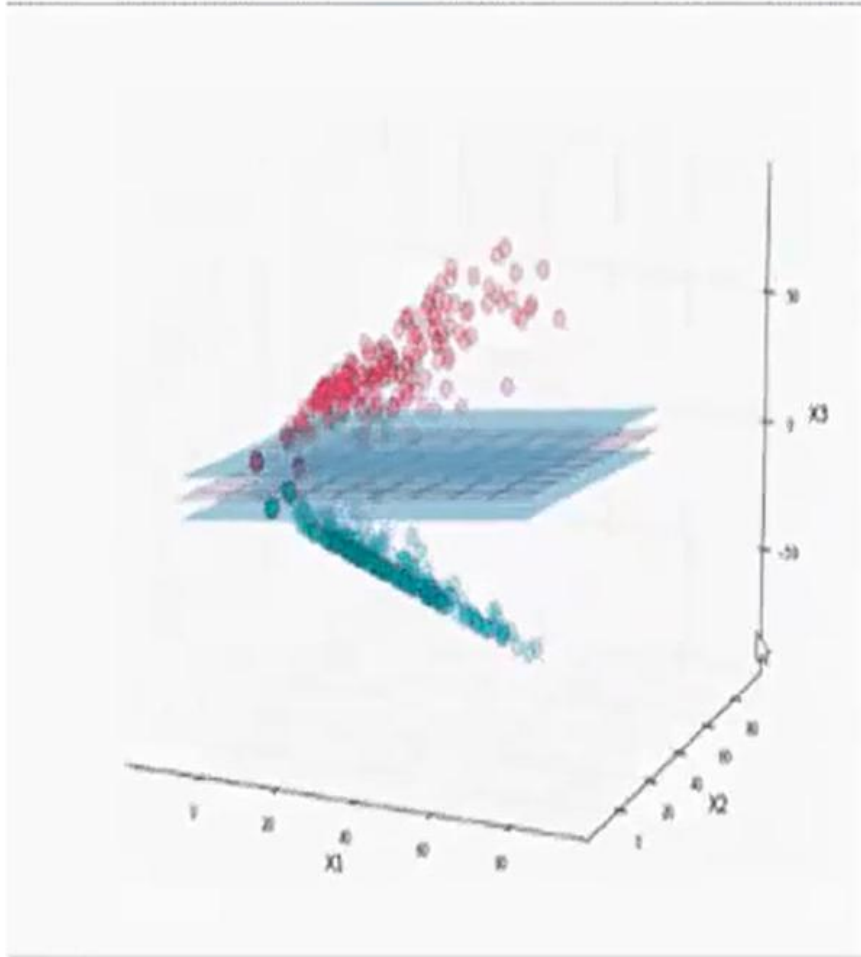
**But solution give
-linear
-non-Linear**



Support Vector Machine



Non- Separable Dataset- Three Dimensional-3 Plane



Regression \rightarrow
Classification \rightarrow

Standardisation

x_train

Min value and max value have large different so ,
we have standardization , for good model

	R&D Spend	Administration	Marketing Spend	State_Florida	State_New York
45	1000.23	124153.04	1903.93	0	1
48	542.05	51743.15	0.00	0	1
29	65605.48	153032.06	107138.38	0	1
15	114523.61	122616.84	261776.23	0	1
30	61994.48	115641.28	91131.24	1	0
32	63408.86	129219.61	46085.25	0	0
16	78013.11	121597.55	264346.06	0	0

value

Mue
/Mean

$$\frac{x - \mu}{\sigma}$$

$$\Rightarrow \frac{100 - \mu}{\sigma}$$

standardisation

Sigma/
Standard
division

$\Rightarrow -1$ to 1
 -3 to 3

x_train

```
array([[ -1.41859108,  0.08007161, -1.46280061, -0.42257713,  1.24034735],  
       [ -1.42804718, -2.75105709, -1.4772005 , -0.42257713,  1.24034735],  
       [-0.08524282,  1.20920221, -0.66688679, -0.42257713,  1.24034735],  
       [ 0.92434855,  0.02000827,  0.50267699, -0.42257713,  1.24034735],  
       [-0.15976805, -0.25272669, -0.7879527 ,  2.36643191, -0.80622577],  
       [-0.13057752,  0.27816764, -1.12864651, -0.42257713, -0.80622577],  
       [ 0.17083067, -0.01984459,  0.52211324, -0.42257713, -0.80622577],  
       [-0.95132351, -1.01325988, -0.357832 , -0.42257713, -0.80622577],  
       [ 0.13452258, -0.3220869 ,  0.78167175, -0.42257713, -0.80622577],  
       [-1.11922093,  0.20633131, -1.2084469 , -0.42257713,  1.24034735],  
       [ 1.04856916,  1.04056545,  0.87960683, -0.42257713,  1.24034735],  
       [ 0.15021012,  0.52252061,  0.122766 , -0.42257713, -0.80622577]]
```

Volume (F:) > HUP > A-Video Records > Iamli > Week3-Machine Learning-Regression > Machine Learning-Regression > 3.Support Vector Machine
Volume (F:) > HUP > A-Video Records > Iamli > Week3-Machine Learning-Regression > Machine Learning-Regression > 3.Support Vector Machine

Search 3.5...
Search 3.5...

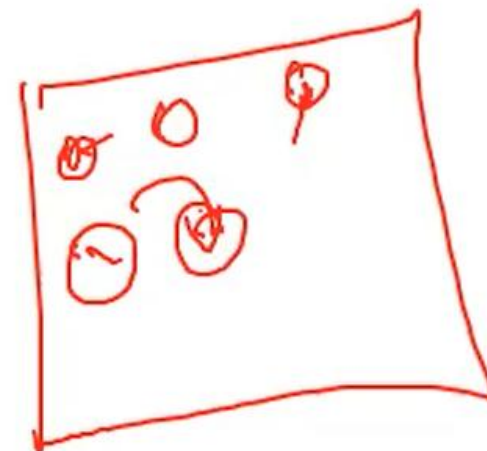
Name	Date modified	Type	Size
1.SVM-Regression	15-04-2022 20:59	IPYNB File	50 KB
50_Startups	08-04-2020 03:07	Microsoft Excel C...	3 KB

Evaluation Metrics

MLR = 0.93
SVM = 0.97
R.F = 0.98
R.F = 0.85

0.94%

R.F



New Volume (F:) > HOPE > A-Video Records > Tamil > Week3-Machine Learning-Regression > Machine Learning-Regression > 3.Support Vector Machine

Search 3.S...

Name	Date modified	Type	Size
1.SVM-Regression	15-04-2022 20:59	IPYNB File	50 KB
<u>50_Startups</u>	08-04-2020 03:07	Microsoft Excel C...	3 KB

Secret →

Single P-S

↓

Algo 1

Algo 2

3

work ↓

Best ⇒ Depolyne


```
[ 1.46491286, -0.19745694, 1.39810017, -0.5      , 1.30088727],  
[ 1.89486118,  0.51005662, 2.07686138, -0.5      , 1.30088727],  
[-1.49419935,  0.4529585 , -1.53809178, -0.5      , -0.76870611],  
[-1.0396359 ,  1.20524087, -1.32098255, -0.5      , -0.76870611]])
```

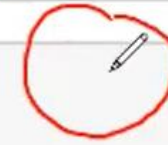
```
[ ]:
```

```
40]: from sklearn.svm import SVR  
regressor=SVR(kernel="sigmoid")  
regressor.fit(X_train,y_train)
```

linear →

rbf -

poly -



Sigmoid -



C:\Anaconda3\lib\site-packages\sklearn\utils\validation.py:985: DataConversionWarning: A column

#kernel{'linear', 'poly', 'rbf', 'sigmoid', 'precomputed'} or callable, default='rbf'