

Machine Learning Regression Algorithm using R2 score method (dataset = 50 Startups.csv)

1. Support Vector Machine – Regression – Algorithm

Support Vector Machine					
S.No	Hyper Tuning Parameter	Linear	RBF (Non-Linear)	Poly	Sigmoid
1	Without Standardisation	0.8774	-0.0573	-0.0508	-0.0575
2	C=0.1	-0.0573	-0.0574	-0.0574	-0.0574
3	C=1.0	-0.0556	-0.0574	-0.0571	-0.0572
4	C=10	-0.0396	-0.0568	-0.0536	-0.0547
5	C=100	0.1064	-0.0507	-0.0198	-0.0304
6	C=500	0.5928	-0.0243	0.1146	0.0705
7	C=1000	0.7802	0.0067	0.2661	0.185
8	C=2000	0.8767	0.0675	0.4809	0.397
9	C=3000	0.8956	0.1232	0.637	0.5913
10	C=4000	0.8972	0.1723	0.7326	0.6282

The SVM Regression Algorithm (With Parameter of Linear and C Value:4000) has good model Using R2 Score

2. Decision Tree- Regression – Algorithm

Decision Tree Regression				
S.No	Criterion	Max Feature	Splitter	R Value
1	Squared_Error	None	best	0.9347
2	Squared_Error	None	random	0.406
3	Squared_Error	sqrt	best	0.6687
4	Squared_Error	sqrt	random	0.7323
5	Squared_Error	Log2	best	0.789
6	Squared_Error	Log2	random	0.6353
7	Absolute_Error	None	best	0.9528
8	Absolute_Error	None	random	0.8717
9	Absolute_Error	sqrt	best	0.7504
10	Absolute_Error	sqrt	random	0.8961
11	Absolute_Error	Log2	best	0.7235
12	Absolute_Error	Log2	random	-0.095
13	Friedman_mse	None	best	0.9083
14	Friedman_mse	None	random	0.7684
15	Friedman_mse	sqrt	best	0.6214
16	Friedman_mse	sqrt	random	0.7846
17	Friedman_mse	Log2	best	0.222
18	Friedman_mse	Log2	random	0.3732
19	Poisson	None	best	0.9464
20	Poisson	None	random	0.8269
21	Poisson	sqrt	best	0.3323
22	Poisson	sqrt	random	0.5468
23	Poisson	Log2	best	0.3949
24	Poisson	Log2	random	-0.0921