R^2 Values for Various Algorithm in ML

Data – 50_Startups

Goal – To predict Profit

1. Multiple Linear Regression

R^2 = 0.9358680970046241

2. Support Vector Machine

Model#	kernel	C	R^2
1	poly	1	-0.050896586
2	poly	10	0.025319733
3	poly	100	0.465666056
4	poly	1000	0.640328112
5	rbf	1	-0.057323757
6	rbf	10	-0.055807402
7	rbf	100	-0.030227628
8	rbf	1000	0.16060299
9	sigmoid	1	-0.057505641
10	sigmoid	10	-0.057621827
11	sigmoid	100	-0.058786436
12	sigmoid	1000	-0.070707399

So, in **Support Vector Machine Algorithm** best model came for

*Kernel = **poly***
C = 1000

R^2 = 0.640328112

3. Decision Tree

Model#	criterion	splitter	max_features	R^2
1	squared_error	best	sqrt	0.908781285
2	squared_error	best	log2	0.499265724
3	squared_error	random	sqrt	0.441262221
4	squared_error	random	log2	0.3463428
5	friedman_mse	best	sqrt	0.360082248
6	friedman_mse	best	log2	0.936117097
7	friedman_mse	random	sqrt	0.681760422
8	friedman_mse	random	log2	0.504279522
9	absolute_error	best	sqrt	0.637962965
10	absolute_error	best	log2	0.47203096
11	absolute_error	random	sqrt	0.792476623
12	absolute_error	random	log2	-0.03308019
13	poisson	best	sqrt	0.522309807
14	poisson	best	log2	0.680850104
15	poisson	random	sqrt	-0.09132119
16	poisson	random	log2	0.713641648

So, in **Decision Tree Algorithm** best model came for

Criterion = ***friedman_mse***
Splitter = ***best***
max_features = ***log2***

R^2 = 0.936117097