

Machine learning regression method using R2 value

1. Multi Linear Regression value is : 0.9358680970046518
2. SVM
3. Decision Tree

Sample Data use:

50_Startups.csv

SVM:

Without Hyper (Not mentioned C value):

Linear: -0.05569157045504447

RBF (Non-linear): -0.057418393916219834

Poly: -0.05710

Sigmoid: -0.05721

With Hyper Parameter (Mentioned C value)

S.No	Hyper Parameter	Linear	RBF	Poly	Sigmoid
1	C = 100	0.1065	-0.0507	-0.0198	-0.0305
2	C = 500	.5929	-0.0243	0.1147	0.0706
3	C = 1000	0.7803	0.0068	0.2662	0.1851
4	C = 2000	0.8768	0.0675	0.4810	0.3971
5	C = 5000	0.9004	0.2124	0.7937	0.7310
6	C = 10000	0.9240	0.3719	0.8130	0.8535

Decision Tree:

Notes: Max_feature= 'None' will throw an error. If we no need this just skip this parameter example for None:

criterion='absolute_error', splitter='best'

S.no	Criterion	splitter	Max_features	metrics
1	Squared_error	best	None	0.9214164
2	Squared_error	random	None	0.85355
3	Squared_error	random	sqrt	- 0.12001202
4	Squared_error	best	Sqrt	0.6115002
5	Squared_error	best	Log2	0.7254904
6	Squared_error	Random	log2	0.4773803
7	friedman_mse	best	none	0.9164907
8	Friedman_mse	Random	none	0.2809627
9	Friedman_mse	Best	sqrt	0.7525907
10	Friedman_mse	Random	Sqrt	0.6728648
11	Friedman_mse	Best	Log2	0.475569
12	Friedman_mse	Random	Log2	0.571768
13	absolute_error	Best	None	0.949701
14	Absolute_error	Random	None	0.392910

15	Absolute_error	Best	sqrt	0.730885
16	Absolute_error	Random	sqrt	0.451201
17	Absolute_error	Best	Log2	0.874690
18	Absolute_error	Random	Log2	0.287336
19	poisson	Best	none	0.927526
20	Poisson	Random	none	0.935992
21	Poisson	Best	Sqrt	0.730122
22	Poisson	Random	Sqrt	0.852200
23	Poisson	Best	Log2	0.629396
24	Poisson	Random	Log2	0.376125