

To find following the machine learning regression method using in r2 value

1. MULTIPLE LINEAR REGRESSION: (R2 value)=0.93
2. SUPPORT VECTOR MACHINE: Default=**rbf**

S.NO	HYPER PARAMETER	LINEAR (r value)	RBF (NON LINEAR) (r value)	POLY (r value)	SIGMOID (r value)
1.	NIL(without standardization)	0.8630	0.0	-179	0.0
2.	NIL(with standardization)	-17078	-4692	-9389	-2247
3.	C10	-168856.50	-4684	-9384	-2240
4.	C100	-2230.67	-4621	-9400	-2196
5.	C500	-4.7493	-1878	-381	-1101
6.	C1000	-0.34050	-454.2	-98.13	-280
7.	C2000	0.5510	-114.3	-200	-37.05
8.	C3000	0.5774	-43.26	-376	-2.780

The SVM Regression use R2 value **Linear** (without standardization) and hyper parameter is NIL=**0.86**

3. DECISION TREE: default="**squared_error**"

SI.NO	CRITERION	MAX FEATURES	SPLITTER	With Random_state=42 (R value)	Without random_state=42 (R VALUE)
1.	()	()	()	0.81	0.90
2.	Mse	None	Best	0.81	0.92
3.	Mse	None	Random	0.83	0.82
4.	Mse	Sqrt	Best	0.02	0.64
5.	Mse	Sqrt	Random	0.39	0.61
6.	Mse	Log2	best	0.02	0.75
7.	Mse	Log2	random	0.39	-1.49
8.	Mae	None	Best	0.87	0.93
9.	Mae	None	Random	0.81	0.77
10.	Mae	Sqrt	Best	0.54	0.93
11.	Mae	Sqrt	random	0.68	0.53
12.	Mae	Log2	Best	0.54	0.72
13.	Mae	Log2	Random	0.68	0.32
14.	friedman_mse	None	Best	0.80	0.91
15.	friedman_mse	None	Random	0.83	0.83
16.	friedman_mse	Log2	Best	-0.005	0.37
17.	friedman_mse	Log2	random	0.39	-0.02
18.	friedman_mse	Sqrt	Best	-0.005	-0.00
19.	friedman_mse	Sqrt	Random	0.39	0.94

The Decision Tree Regression use R2 value (Mean absolute_value_None_best) after assigning (random_state as 42)=0.87

Yellow colored = Highest value, Green colored= default value