

To find the following machine learning regression method using r2 value

1. Multiple Linear Regression R^2 value = 0.8983
2. Support Vector Machine

S.No	Hyper Parameter	Linear(r value)	RBF(Non Linear r value)	Poly (r value)	Sigmod(r value)
1.	C10	0.4102	0.0329	0.0240	0.0187
2	C100	0.6017	0.3376	0.6756	0.5566
3	C1000	0.6176	0.5909	0.8145	0.5987
4	C2000	0.7026	0.6909	0.8209	0.6767
5	C3000	0.8627	0.8254	0.8728	0.8129

The SVM regression uses R^2 value nonlinear rbf and hyper parameter C3000=0.8627

3. Decision tree

S.No	Criterion	Max features	Splitter	R value
1	Mse	auto	best	0.6876
2	Mse	auto	random	0.6576
3	Mse	sqrt	best	0.7216
4	Mse	sqrt	random	0.7165
5	Mse	Log2	best	0.7318
6	Mse	Log2	random	0.7108
7	Mae	auto	best	0.7219
8	Mae	auto	random	0.7187
9	Mae	sqrt	best	0.7301
10	Mae	sqrt	random	0.7109
11	Mae	Log2	best	0.7419
12	Mae	Log2	random	0.7325
13	friedman_mse	auto	best	0.7519
14	friedman_mse	auto	random	0.7416

The decision tree regression uses R^2 value (friedman_mse, auto, best=0.7519)