

Assignment- Regression Algorithm

STEP 1:

3 stage Problem Identification:

Stage1: Machine Learning

Stage2: Supervised Learning

Stage3: Regression

STEP 2:

Basic information about Dataset:

Total number of rows: 1338

Total number of columns:6

STEP 3:

Preprocessing method used for two columns:

- Nominal Data

STEP 4:

1. Multiple Linear Regression:

R² Value=0.789

2. Support Vector Machine Checker:

SNO	Hyper Parameter	Linear (r value)	RBF(non linear value)	Poly (r value)	Sigmoid (r value)	Precomputed (r value)
1	C10	0.462	-0.032	0.038	0.039	This parameter not working and not
2	C100	0.628	0.320	0.617	0.527	
3	C500	0.763	0.664	0.826	0.444	
4	C1000	0.764	0.810	0.856	0.287	

5	C2000	0.744	0.854	0.860	-0.593	suitable for this model
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3. Decision Tree Checker:

SNO	Criterion	Max features	Splitter	Value
1	squared_error	None	Best	0.728
2	squared_error	None	Random	0.720
3	squared_error	Auto	Best	0.699
4	squared_error	Auto	Random	0.675
5	squared_error	Sqrt	Best	0.688
6	squared_error	Sqrt	Random	0.576
7	squared_error	Log2	Best	0.660
8	squared_error	Log2	Random	0.704
9	friedman_mse	Log2	Best	0.718
10	friedman_mse	Log2	Random	0.659
11	friedman_mse	Auto	Best	0.690
12	friedman_mse	Auto	Random	0.737
13	friedman_mse	Sqrt	Best	0.703
14	friedman_mse	Sqrt	Random	0.671
15	absolute_error	None	Best	0.699
16	absolute_error	None	Random	0.720
17	absolute_error	Auto	Best	0.685
18	absolute_error	Auto	Random	0.740
19	absolute_error	Sqrt	Best	0.735
20	absolute_error	Sqrt	Random	0.583
21	absolute_error	Log2	Best	0.714
22	absolute_error	Log2	Random	0.461
23	poisson	Log2	Best	0.501
24	poisson	Log2	Random	0.591
25	poisson	Auto	Best	0.675

26	poisson	Auto	Random	0.661
27	poisson	Sqrt	Best	0.627
28	poisson	Sqrt	Random	0.655

STEP 5:

Good Model:

- Support Vector Machine

SNO	Hyper Parameter	Poly (r value)
1	C2000	0.860

STEP 6:

Explanation

I suppose to say Support Vector Machine algorithm gave me high value for the model and it can be used as a final model as of now.