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

1. MULTIPLE LINEAR REGRESSION (R2 value)=0.9358

2. SUPPORT VECTOR MACHINE:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| S.NO | HYPER PARAMETER | LINEAR  (R Value) | RBF  (R Value) | SIGMOID  (R Value) |
| 1 | C10 | -0.0396 | -0.0568 | -0.0304 |
| 2 | C100 | 0.1064 | -0.0507 | -0.0574 |
| 3 | C500 | 0.5928 | -0.0243 | 0.0705 |
| 4 | C1000 | 0.7802 | 0.0067 | 0.1850 |
| 5 | C2000 | 0.8767 | 0.0675 | 0.3970 |
| 6 | C3000 | 0.8956 | 0.1232 | 0.5913 |

The **SVM Regression** use R2 value (linear and Hyper parameter (C3000)) =0.8956

3. DECISION TREE

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| SI.NO | CRITERION | MAX FEATURES | SPLITTER | R VALUE |
| 1 | Mse | auto | Best | 0.9285 |
| 2 | Mse | auto | random | 0.9082 |
| 3 | Mse | sqrt | best | 0.7505 |
| 4 | Mse | sqrt | Random | -0.9140 |
| 5 | Mse | Log2 | Best | 0.3415 |
| 6 | Mse | Log2 | Random | 0.6738 |
| 7 | Mae | auto | best | 0.9408 |
| 8 | Mae | auto | Random | 0.9567 |
| 9 | mae | sqrt | Best | 0.7249 |
| 10 | mae | sqrt | Random | 0.6354 |
| 11 | mae | Log2 | Best | -0.0364 |
| 12 | mae | Log2 | Random | 0.6354 |
| 13 | Friedman\_mse | auto | best | 0.9339 |
| 14 | Friedman\_mse | auto | Random | 0.9212 |
| 15 | Friedman\_mse | sqrt | Best | 0.4467 |
| 16 | Friedman\_mse | sqrt | Random | 0.5044 |
| 17 | Friedman\_mse | Log2 | Best | 0.6131 |
| 18 | Friedman\_mse | Log2 | Random | 0.7054 |

The **DECISION TREE** use R2 value (Mae auto Random) =0.9567