

To find the following the Machine Learning Regression method using in R2 value

**1. MULTIPLE LINEAR REGRESSION (R2 value)**

**2. SUPPORT VECTOR MACHINE:**

| SL.No | HYPER<br>PARAMETER | LINEAR( R VALUE) | RBF (NON LINEAR)<br>(R VALUE) | POLY<br>(R VALUE) | SIGMOND<br>(R VALUE) |
|-------|--------------------|------------------|-------------------------------|-------------------|----------------------|
| 1     | C10                | -0.03964         | -0.057418                     | -0.053667         | 0.054719             |
| 2     | C100               | 0.10646          | -0.0507                       | -0.019802         | -0.03045             |
| 3     | C500               | 0.59289          | -0.024323                     | 0.11468           | 0.07057              |
| 4     | C1000              | 0.78028          | 0.00676                       | 0.26616           | 0.18506              |
| 5     | C2000              | 0.87677          | 0.06751                       | 0.481             | 0.39706              |
| 6     | C3000              | 0.89567          | 0.12322                       | 0.637             | 0.59136              |

The SVM regression use R2 value =0.89567(Hyper Parameter=C3000, Linear)

| SL.No | CRITERION    | SPLITTER | MAX FEATURE | R VALUE |
|-------|--------------|----------|-------------|---------|
| 1     | Mse          | best     | auto        | 0.91254 |
| 2     | Mse          | random   | auto        | 0.21461 |
| 3     | Mse          | best     | sqrt        | 0.10041 |
| 4     | Mse          | random   | sqrt        | 0.47009 |
| 5     | Mse          | best     | Log2        | 0.9312  |
| 6     | Mse          | random   | Log2        | 0.93012 |
| 7     | Mae          | best     | auto        | 0.95073 |
| 8     | Mae          | random   | auto        | 0.74139 |
| 9     | Mae          | best     | sqrt        | 0.50193 |
| 10    | Mae          | random   | sqrt        | 0.70513 |
| 11    | Mae          | best     | Log2        | 0.1917  |
| 12    | Mae          | random   | Log2        | 0.6575  |
| 13    | Friedman_mse | best     | Auto        | 0.92397 |
| 14    | Friedman_mse | random   | Auto        | 0.85784 |
| 15    | Friedman_mse | best     | sqrt        | 0.60356 |
| 16    | Friedman_mse | random   | sqrt        | 0.48029 |
| 17    | Friedman_mse | best     | Log2        | 0.92853 |
| 18    | Friedman_mse | random   | Log2        | 0.49385 |

The Decision Tree Regression use R2 value=0.93012(Criterion='Friedman', Splitter='random', max feature='log2')