Assignment Regression Algorithm

Boosting algorithm report

🡺 Ada boost:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| S.no | loss | N estimator | Learning rate | R2 value |
| 1 | **linear** | 50 | 0.01 | 0.8740 |
| 2 | **linear** | 50 | 0.05 | 0.8769 |
| 3 | **linear** | 50 | 0.3 | 0.8577 |
| 4 | **linear** | 50 | 0.1 | 0.8691 |
| 5 | **linear** | 50 | 1 | 0.8594 |
| 6 | **linear** | **100** | 0.01 | 0.8802 |
| 7 | **linear** | **100** | 0.05 | 0.8664 |
| 8 | **linear** | **100** | 0.3 | 0.8533 |
| 9 | **linear** | **100** | 0.1 | 0.8603 |
| 10 | **linear** | **100** | 1 | 0.8334 |
| 11 | **square** | 50 | 0.01 | 0.8804 |
| 12 | **square** | 50 | 0.05 | 0.86721 |
| 13 | **square** | 50 | 0.3 | 0.6571 |
| 14 | **square** | 50 | 0.1 | 0.8352 |
| 15 | **square** | 50 | 1 | 0.4869 |
| 16 | **square** | **100** | 0.01 | 0.8778 |
| 17 | **square** | **100** | 0.05 | 0.8277 |
| 18 | **square** | **100** | 0.3 | 0.5352 |
| 19 | **square** | **100** | 0.1 | 0.7353 |
| 20 | square | **100** | 1 | 0.4649 |
| 21 | **exponential** | 50 | 0.01 | 0.8811 |
| 22 | **exponential** | 50 | 0.05 | 0.8770 |
| 23 | **exponential** | 50 | 0.3 | 0.7909 |
| 24 | **exponential** | 50 | 0.1 | 0.8656 |
| 25 | **exponential** | 50 | 1 | 0.6316 |
| 26 | **exponential** | **100** | 0.01 | 0.8762 |
| 27 | **exponential** | **100** | 0.05 | 0.6797 |
| 28 | **exponential** | **100** | 0.3 | 0.6986 |
| 29 | **exponential** | **100** | 0.1 | 0.8373 |
| 30 | **exponential** | **100** | 1 | 0.547 |

🡺 XG boost:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| S.no | Criterion | Max depth | eta | R value |
| 1 | gbtree | 2 | 0.01 | 0.7428 |
| 2 | gbtree | 2 | 0.1 | 0. 8922 |
| 3 | gbtree | 2 | 0.2 | 0.8885 |
| 4 | gbtree | 3 | 0.01 | 0.8811 |
| 5 | gbtree | 3 | 0.1 | 0.8883 |
| 6 | gbtree | 3 | 0.2 | 0.8811 |
| 7 | gbtree | 5 | 0.01 | 0.7689 |
| 8 | gbtree | 5 | 0.1 | 0.8661 |
| 9 | gbtree | 5 | 0.2 | 0.8427 |
| 10 | gbtree | 7 | 0.01 | 0.7597 |
| 11 | gbtree | 7 | 0.1 | 0.8375 |
| 12 | gbtree | 7 | 0.2 | 0.8164 |
| 13 | gblinear | 3 | 0.01 | 0.4781 |
| 14 | gblinear | 3 | 0.1 | 0.7195 |
| 15 | gblinear | 3 | 0.2 | 0.7517 |
| 16 | gblinear | 5 | 0.01 | 0.4781 |
| 17 | gblinear | 5 | 0.1 | 0.7195 |
| 18 | gblinear | 5 | 0.2 | 0. 7517 |
| 19 | gblinear | 7 | 0.01 | 0. 4781 |
| 20 | gblinear | 7 | 0.1 | 0. 7195 |
| 21 | gblinear | 7 | 0.2 | 0. 7517 |