|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| algorithm | rep | info | consensus\_param | TN | FN | TP | FP | TPR | TNR | FDR | FOR |
| svm | 1 | linear kernel, no filt | yes | 21 | 1 | 20 | 2 | 0.909 | 0.955 | 0.043 | 0.083 |
| svm | 2 | linear kernel, 50% weight filt | no | 21 | 1 | 20 | 2 | 0.909 | 0.955 | 0.043 | 0.083 |
| svm | 3 | radial kernel, no filt | no | 19 | 3 | 20 | 2 | 0.909 | 0.864 | 0.120 | 0.083 |
| svm | 4 | radial kernel, 50% weight filt | no | 20 | 2 | 20 | 2 | 0.909 | 0.909 | 0.083 | 0.083 |
| lasso | 1 | alpha = 1 | yes | 21 | 1 | 20 | 2 | 0.909 | 0.955 | 0.043 | 0.083 |
| lasso | 2 | alpha = 0.8 | no | 21 | 1 | 20 | 2 | 0.909 | 0.955 | 0.043 | 0.083 |
| lasso | 3 | alpha = 1.2 | no | 21 | 1 | 20 | 2 | 0.909 | 0.955 | 0.043 | 0.083 |
| rf | 1 | ntrees = 2,000 | no | 20 | 2 | 21 | 1 | 0.955 | 0.909 | 0.083 | 0.043 |
| rf | 2 | ntrees = 5,000 | no | 19 | 3 | 21 | 1 | 0.955 | 0.864 | 0.120 | 0.043 |
| rf | 3 | ntrees = 10,000 | no | 19 | 3 | 21 | 1 | 0.955 | 0.864 | 0.120 | 0.043 |
| xgb | 1 | max depth = 2, nrounds = 2 | yes | 19 | 3 | 22 | 0 | 1 | 0.864 | 0.120 | 0.000 |
| xgb | 2 | max depth = 50, nrounds = 2 | no | 19 | 3 | 22 | 0 | 1 | 0.864 | 0.120 | 0.000 |
| xgb | 3 | max depth = 50, nrounds = 50 | no | 19 | 3 | 22 | 0 | 1 | 0.864 | 0.120 | 0.000 |
| xgb | 4 | max depth = 100, nrounds = 50 | no | 19 | 3 | 22 | 0 | 1 | 0.864 | 0.120 | 0.000 |

**Table 1.** Results of hyperparameter optimization tests for 4 algorithms (SVM, lasso, Random Forest, XGBoost). Performance metrics of each fitted model are shown for true negatives (TN), false negatives (FN), true positives (TP), false positives (TP), true positive rate (TPR), true negative rate (TNR), false discovery rate (FDR), false omission rate (FOR), log loss (LL), and error (E). Model evaluations were performed on test data subset after models were fitted to training data.