CKD dataset

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Classifiers | Testing Accuracy | Training Accuracy | Confusion Matrix | Precision | Recall | F1-score | Support |
| Ada Boost | 0.975 | 1.0 | 72 0  3 45 | 0.98 | 0.97 | 0.97 | 120 |
| Decision Tree | 0.96 | 0.97 | 71 1  4 44 | 0.96 | 0.96 | 0.96 | 120 |
| XgBoost | 0.983 | 1.0 | 72 0  2 46 | 0.98 | 0.98 | 0.98 | 120 |
| Cat Boost | 0.966 | 1.0 | 71 1  3 45 | 0.97 | 0.97 | 0.97 | 120 |
| KNN | 0.65 | 0.796 | 47 25  17 31 | 0.66 | 0.65 | 0.65 | 120 |
| Random Forest | 0.975 | 0.996 | 72 0  3 45 | 0.98 | 0.97 | 0.97 | 120 |
| Naïve Bayes | 0.94 | 0.94 | 66 6  1 47 | 0.95 | 0.94 | 0.94 | 120 |
| Gradient Boosting | 0.975 | 1.0 | 72 0  3 45 | 0.98 | 0.97 | 0.97 | 120 |
| Stochastic Gradient Boosting | 0.975 | 1.0 | 72 0  3 45 | 0.98 | 0.97 | 0.97 | 120 |
| LGBM | 0.983 | 1.0 | 72 0  2 46 | 0.98 | 0.98 | 0.98 | 120 |
| Extra Tree | 0.975 | 1.0 | 72 0  3 45 | 0.98 | 0.97 | 0.97 | 120 |
| SVM | 0.93 | 0.97 | 65 7  1 47 | 0.94 | 0.93 | 0.93 | 120 |
| ANN | 0.60 | 0.64 | 72 0  48 0 | 0.36 | 0.60 | 0.45 | 120 |

CKD with PCA

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Classifiers | Testing Accuracy | Training Accuracy | Confusion Matrix | Precision | Recall | F1-score | Support |
| Ada Boost | 0.983 | 1.0 | 72 0  2 46 | 0.98 | 0.98 | 0.98 | 120 |
| Decision Tree | 0.975 | 0.98 | 72 0  3 45 | 0.98 | 0.97 | 0.97 | 120 |
| XgBoost | 0.9916 | 1.0 | 72 0  1 47 | 0.99 | 0.99 | 0.99 | 120 |
| Cat Boost | 0.975 | 0.985 | 72 0  3 45 | 0.98 | 0.97 | 0.97 | 120 |
| KNN | 0.59 | 0.76 | 50 22  27 21 | 0.58 | 0.59 | 0.59 | 120 |
| Random Forest | 0.975 | 0.99 | 72 0  3 45 | 0.98 | 0.97 | 0.97 | 120 |
| Naïve Bayes | 0.8833 | 0.9 | 62 10  4 44 | 0.89 | 0.88 | 0.88 | 120 |
| Gradient Boosting | 0.975 | 1.0 | 72 0  3 45 | 0.98 | 0.97 | 0.97 | 120 |
| Stochastic Gradient Boosting | 0.975 | 1.0 | 72 0  3 45 | 0.98 | 0.97 | 0.97 | 120 |
| LGBM | 0.983 | 1.0 | 72 0  2 46 | 0.98 | 0.98 | 0.98 | 120 |
| Extra Tree | 0.9833 | 1.0 | 72 0  2 46 | 0.98 | 0.98 | 0.98 | 120 |
| SVM | 0.9666 | 0.946 | 70 2  2 46 | 0.97 | 0.97 | 0.97 | 120 |
| ANN | 0.6 | 0.6357 | 72 0  48 0 | 0.36 | 0.60 | 0.45 | 120 |
| Hybrid | 0.958 | 0.978 | 71 1  4 44 | 0.96 | 0.96 | 0.96 | 120 |

Improved dataset

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Classifiers | Testing Accuracy | Training Accuracy | Confusion Matrix | Precision | Recall | F1-score | Support |
| Ada Boost |  |  |  |  |  |  |  |
| Decision Tree | 0.958 | 0.957 | 48 0]  [ 5 67 | 0.96 | 0.96 | 0.96 |  |
| XgBoost |  |  |  |  |  |  |  |
| Cat Boost |  |  |  |  |  |  |  |
| KNN | 0.64 | 0.796 | 29 19]  [24 48 | 0.65 | 0.64 | 0.64 |  |
| Random Forest |  |  |  |  |  |  |  |
| Naïve Bayes | 0.9 | 0.917 | 43 5]  [ 7 65 | 0.90 | 0.90 | 0.90 |  |
| Gradient Boosting |  |  |  |  |  |  |  |
| Stochastic Gradient Boosting |  |  |  |  |  |  |  |
| LGBM |  |  |  |  |  |  |  |
| Extra Tree |  |  |  |  |  |  |  |
| SVM | 0.958 | 0.975 | 45 3]  [ 2 70 | 0.96 | 0.96 | 0.96 |  |
| ANN | 0.6 | 0.635 | 0 48]  [ 0 72 | 0.36 | 0.60 | 0.45 |  |
| Hybrid | 0.966 | 0.985 | 46 2]  [ 2 70 | 0.97 | 0.97 | 0.97 |  |