|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Categories | Model Name | Accuracy | Precision | Recall | F1-score |
| Dark | Pre-Trained EfficientNet\_B0 | 100% | 100% | 100% | 100% |
| Pre- trained GoogleNet | 100% | 100% | 100% | 100% |
| Pre-Trained MobileNetv2 | 100% | 100% | 100% | 100% |
| Pre-Trained Resnet50 | 100% | 100% | 100% | 100% |
| Pre-Trained VGG16 | 99% | 100% | 100% | 100% |
| Hybrid SVM | 97% | 98% | 97% | 97% |
| Hybrid KNN | 98% | 98% | 98% | 98% |
| Hybrid Random  Forest | 97% | 100% | 97% | 98% |
| Hybrid XGBoost | 98% | 98% | 98% | 98% |
| CBAM - SVM | 100% | 87% | 99% | 93% |
| CBAM - KNN | 76% | 99% | 96% | 97% |
| CBAM - Random Forest | 99% | 92% | 99% | 95% |
| CBAM - XGBoost | 96% | 98% | 96% | 97% |
| SE - SVM | 43% | 0% | 0% | 0% |
| SE - KNN | 97% | 94% | 97% | C |
| SE - Random Forest | 94% | 95% | 94% | 94% |
| SE - XGBoost | 98% | 96% | 98% | 97% |
| Self - SVM | 98% | 98% | 98% | 98% |
| Self - KNN | 94% | 100% | 94% | 97% |
| Self - Random Forest | 98% | 97% | 98% | 98% |
| Self - XGBoost | 95% | 98% | 95% | 96% |
| Green | Pre-Trained EfficientNet\_B0 | 100% | 100% | 100% | 100% |
| Pre- trained GoogleNet | 100% | 100% | 100% | 100% |
| Pre-Trained MobileNetv2 | 100% | 100% | 100% | 100% |
| Pre-Trained Resnet50 | 100% | 100% | 100% | 100% |
| Pre-Trained VGG16 | 100% | 100% | 100% | 100% |
| Hybrid SVM | 100% | 100% | 100% | 100% |
| Hybrid KNN | 100% | 100% | 100% | 100% |
| Hybrid Random  Forest | 100% | 100% | 100% | 100% |
| Hybrid XGBoost | 100% | 100% | 100% | 100% |
| CBAM - SVM | 98% | 85% | 11% | 19% |
| CBAM - KNN | 60% | 100% | 99% | 995 |
| CBAM - Random Forest | 99% | 100% | 99% | 99% |
| CBAM - XGBoost | 97% | 100% | 97% | 98% |
| SE - SVM | 100% | 0% | 0% | 0% |
| SE - KNN | 98% | 100% | 98% | 99% |
| SE - Random Forest | 96% | 100% | 96% | 98% |
| SE - XGBoost | 100% | 100% | 100% | 100% |
| Self - SVM | 100% | 100% | 100% | 100% |
| Self - KNN | 100% | 100% | 100% | 100% |
| Self - Random Forest | 100% | 100% | 100% | 100% |
| Self - XGBoost | 96% | 100% | 96% | 98% |
| Light | Pre-Trained EfficientNet\_B0 | 100% | 100% | 100% | 100% |
| Pre- trained GoogleNet | 100% | 100% | 100% | 100% |
| Pre-Trained MobileNetv2 | 100% | 100% | 100% | 100% |
| Pre-Trained Resnet50 | 100% | 100% | 100% | 100% |
| Pre-Trained VGG16 | 100% | 99% | 100% | 100% |
| Hybrid SVM | 100% | 100% | 100% | 100% |
| Hybrid KNN | 100% | 100% | 100% | 100% |
| Hybrid Random  Forest | 100% | 100% | 100% | 100% |
| Hybrid XGBoost | 100% | 100% | 100% | 100% |
| CBAM - SVM | 100% | 37% | 100% | 54% |
| CBAM - KNN | 96% | 99% | 99% | 99% |
| CBAM - Random Forest | 98% | 99% | 98% | 98% |
| CBAM - XGBoost | 96% | 98% | 96% | 97% |
| SE - SVM | 78% | 0% | 0% | 0% |
| SE - KNN | 95% | 98% | 99% | 96% |
| SE - Random Forest | 100% | 100% | 89% | 94% |
| SE - XGBoost | 90% | 100% | 905 | 95% |
| Self - SVM | 98% | 100% | 98% | 99% |
| Self - KNN | 100% | 100% | 100% | 100% |
| Self - Random Forest | 99% | 100% | 99% | 99% |
| Self - XGBoost | 91% | 85% | 98% | 91% |
| Medium | Pre-Trained EfficientNet\_B0 | 100% | 100% | 100% | 100% |
| Pre- trained GoogleNet | 100% | 100% | 100% | 100% |
| Pre-Trained MobileNetv2 | 100% | 100% | 100% | 100% |
| Pre-Trained Resnet50 | 100% | 100% | 100% | 100% |
| Pre-Trained VGG16 | 100% | 100% | 100% | 100% |
| Hybrid SVM | 99% | 97% | 99% | 98% |
| Hybrid KNN | 98% | 98% | 98% | 98% |
| Hybrid Random  Forest | 100% | 97% | 99% | 99% |
| Hybrid XGBoost | 98% | 99% | 99% | 99% |
| CBAM - SVM | 91% | 0% | 0% | 0% |
| CBAM - KNN | 100% | 95% | 99% | 97% |
| CBAM - Random Forest | 91% | 97% | 91% | 94% |
| CBAM - XGBoost | 98% | 92% | 98% | 95% |
| SE - SVM | 95% | 25% | 100% | 40% |
| SE - KNN | 94% | 92% | 94% | 93% |
| SE - Random Forest | 95% | 82% | 95% | 88% |
| SE - XGBoost | 96% | 89% | 96% | 92% |
| Self - SVM | 98% | 96% | 98% | 97% |
| Self - KNN | 100% | 94% | 100% | 97% |
| Self - Random Forest | 97% | 97% | 97% | 97% |
| Self - XGBoost | 98% | 96% | 95% | 95% |