|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Results of Decision Tree** | | | | | |
| **Hyperparameters** | | | **Accuracy** | **Overall Recall** | **Recall on ‘deceased’** |
| **criterion** | **max\_features** | **min\_samples\_leaf** |
| gini | 0.8 | 1 | 0.88026 | 0.66572 | 0.12010 |
| gini | 0.8 | 2 | 0.87883 | 0.66242 | 0.11253 |
| gini | 0.8 | 3 | 0.87890 | 0.66041 | 0.10522 |
| gini | 0.6 | 1 | 0.88017 | 0.66576 | 0.12063 |
| gini | 0.6 | 2 | 0.87871 | 0.66259 | 0.11462 |
| gini | 0.6 | 3 | 0.87804 | 0.66027 | 0.10757 |
| gini | 0.4 | 1 | 0.88040 | 0.66576 | 0.11984 |
| gini | 0.4 | 2 | 0.87842 | 0.66200 | 0.11279 |
| gini | 0.4 | 3 | 0.87732 | 0.65802 | 0.10183 |
| entropy | 0.8 | 1 | 0.88032 | 0.66579 | 0.12037 |
| entropy | 0.8 | 2 | 0.87897 | 0.66215 | 0.11123 |
| entropy | 0.8 | 3 | 0.87880 | 0.66098 | 0.10653 |
| entropy | 0.6 | 1 | 0.88027 | 0.66568 | 0.12010 |
| entropy | 0.6 | 2 | 0.87893 | 0.66287 | 0.11410 |
| entropy | 0.6 | 3 | 0.87796 | 0.66026 | 0.10679 |
| entropy | 0.4 | 1 | 0.88029 | 0.66539 | 0.11880 |
| entropy | 0.4 | 2 | 0.87833 | 0.66155 | 0.11201 |
| entropy | 0.4 | 3 | 0.87730 | 0.65875 | 0.10470 |
| **Results of Random Forest** | | | | | |
| **Hyperparameters** | | | **Accuracy** | **Overall Recall** | **Recall on ‘deceased’** |
| **criterion** | **n\_estimators** | **max\_features** |
| gini | 50 | 0.8 | 0.88175 | 0.66600 | 0.11514 |
| gini | 50 | 0.8 | 0.88060 | 0.66585 | 0.11514 |
| gini | 50 | 0.8 | 0.88129 | 0.66593 | 0.11540 |
| gini | 100 | 0.6 | 0.88123 | 0.66567 | 0.11410 |
| gini | 100 | 0.6 | 0.88140 | 0.66582 | 0.11358 |
| gini | 100 | 0.6 | 0.88125 | 0.66590 | 0.11488 |
| gini | 200 | 0.4 | 0.88130 | 0.66613 | 0.11514 |
| gini | 200 | 0.4 | 0.88138 | 0.66596 | 0.11488 |
| gini | 200 | 0.4 | 0.88143 | 0.66576 | 0.11462 |
| entropy | 50 | 0.8 | 0.88133 | 0.66624 | 0.11593 |
| entropy | 50 | 0.8 | 0.88144 | 0.66619 | 0.11567 |
| entropy | 50 | 0.8 | 0.88128 | 0.66572 | 0.11462 |
| entropy | 100 | 0.6 | 0.88140 | 0.66618 | 0.11671 |
| entropy | 100 | 0.6 | 0.88140 | 0.66634 | 0.11567 |
| entropy | 100 | 0.6 | 0.88130 | 0.66613 | 0.11593 |
| entropy | 200 | 0.4 | 0.88135 | 0.66594 | 0.11567 |
| entropy | 200 | 0.4 | 0.88135 | 0.66583 | 0.11488 |
| entropy | 200 | 0.4 | 0.88130 | 0.66575 | 0.11462 |
| **Results of LightGBM** | | | | | |
| **Hyperparameters** | | | **Accuracy** | **Overall Recall** | **Recall on ‘deceased’** |
| **n\_estimators** | **bossting\_type** | **num\_leaves** |
| 50 | gbdt | 21 | 0.68799 | 0.69478 | 0.69504 |
| 50 | gbdt | 31 | 0.70061 | 0.70399 | 0.69713 |
| 50 | gbdt | 41 | 0.71157 | 0.70960 | 0.68877 |
| 50 | dart | 21 | 0.70741 | 0.70864 | 0.69687 |
| 50 | dart | 31 | 0.71787 | 0.71386 | 0.69138 |
| 50 | dart | 41 | 0.73741 | 0.71744 | 0.66449 |
| 50 | goss | 21 | 0.72798 | 0.71707 | 0.67572 |
| 50 | goss | 31 | 0.73644 | 0.72196 | 0.66945 |
| 50 | goss | 41 | 0.74567 | 0.72451 | 0.65379 |
| 100 | gbdt | 21 | 0.66753 | 0.68807 | 0.72141 |
| 100 | gbdt | 31 | 0.68744 | 0.69876 | 0.71097 |
| 100 | gbdt | 41 | 0.69786 | 0.70311 | 0.69446 |
| 100 | dart | 21 | 0.67726 | 0.69373 | 0.71984 |
| 100 | dart | 31 | 0.69527 | 0.70389 | 0.70809 |
| 100 | dart | 41 | 0.70545 | 0.70943 | 0.69922 |
| 100 | goss | 21 | 0.68871 | 0.70198 | 0.72298 |
| 100 | goss | 31 | 0.70605 | 0.71067 | 0.70757 |
| 100 | goss | 41 | 0.71627 | 0.71531 | 0.69295 |
| 200 | gbdt | 21 | 0.69472 | 0.69929 | 0.69452 |
| 200 | gbdt | 31 | 0.70619 | 0.70618 | 0.69347 |
| 200 | gbdt | 41 | 0.71381 | 0.71012 | 0.68773 |
| 200 | dart | 21 | 0.71581 | 0.71068 | 0.68590 |
| 200 | dart | 31 | 0.72714 | 0.71566 | 0.67598 |
| 200 | dart | 41 | 0.73560 | 0.71850 | 0.66345 |
| 200 | goss | 21 | 0.72681 | 0.70502 | 0.64447 |
| 200 | goss | 31 | 0.73624 | 0.71371 | 0.64413 |
| 200 | goss | 41 | 0.72067 | 0.67770 | 0.56423 |