Feature Descriptor: LBP\_ri

1. Feature Selection: CFS

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Algorithm | AUC | AC | SN | SP | PR | FM | TIME |
| J48 | 0.675 | 0.618 | 0.618 | 0.622 | 0.622 | 0.618 | 0 |
| J48 binary tree | 0.646 | 0.611 | 0.611 | 0.608 | 0.61 | 0.61 | 0 |
| AODE | 0.687 | 0.641 | 0.641 | 0.652 | 0.662 | 0.634 | 0 |
| Bayes network | 0.692 | 0.641 | 0.641 | 0.656 | 0.676 | 0.628 | 0 |
| Naïve bay | 0.691 | 0.649 | 0.649 | 0.664 | 0.688 | 0.635 | 0 |
| SVM | 0.658 | 0.649 | 0.649 | 0.667 | 0.702 | 0.63 | 0.02 |
| Logistic | 0.672 | 0.641 | 0.641 | 0.64 | 0.641 | 0.641 | 0.03 |
| SMO | 0.703 | 0.702 | 0.702 | 0.704 | 0.704 | 0.702 | 0.03 |
| Muti layer | 0.691 | 0.595 | 0.595 | 0.59 | 0.595 | 0.593 | 3.16 |

1. Feature Selection: Chi-Square

K=10

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Algorithm | AUC | AC | SN | SP | PR | FM | TIME |
| J48 | 0.611 | 0.588 | 0.588 | 0.588 | 0.588 | 0.588 | 0 |
| J48 binary tree | 0.531 | 0.542 | 0.542 | 0.537 | 0.541 | 0.54 | 0 |
| AODE | 0.592 | 0.603 | 0.603 | 0.615 | 0.621 | 0.594 | 0 |
| Bayes network | 0.572 | 0.565 | 0.565 | 0.577 | 0.58 | 0.554 | 0 |
| Naïve bay | 0.565 | 0.565 | 0.565 | 0.577 | 0.58 | 0.554 | 0 |
| SVM | 0.5 | 0.519 | 0.519 | 0.481 | 0.269 | 0.355 | 0 |
| Logistic | 0.544 | 0.519 | 0.519 | 0.522 | 0.521 | 0.519 | 0.35 |
| SMO | 0.573 | 0.573 | 0.573 | 0.574 | 0.574 | 0.573 | 0.02 |
| Muti layer |  |  |  |  |  |  |  |

K=20

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Algorithm | AUC | AC | SN | SP | PR | FM | TIME |
| J48 | 0.611 | 0.588 | 0.588 | 0.588 | 0.588 | 0.588 | 0 |
| J48 binary tree | 0.531 | 0.542 | 0.542 | 0.537 | 0.541 | 0.54 | 0 |
| AODE | 0.592 | 0.603 | 0.603 | 0.615 | 0.621 | 0.594 | 0 |
| Bayes network | 0.572 | 0.565 | 0.565 | 0.577 | 0.58 | 0.554 | 0 |
| Naïve bay | 0.565 | 0.565 | 0.565 | 0.577 | 0.58 | 0.554 | 0 |
| SVM | 0.5 | 0.519 | 0.519 | 0.481 | 0.269 | 0.355 | 0 |
| Logistic | 0.544 | 0.519 | 0.519 | 0.522 | 0.521 | 0.519 | 0.35 |
| SMO | 0.573 | 0.573 | 0.573 | 0.574 | 0.574 | 0.573 | 0.02 |
| Muti layer |  |  |  |  |  |  |  |

K=30

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Algorithm | AUC | AC | SN | SP | PR | FM | TIME |
| J48 | 0.611 | 0.588 | 0.588 | 0.588 | 0.588 | 0.588 | 0 |
| J48 binary tree | 0.531 | 0.542 | 0.542 | 0.537 | 0.541 | 0.54 | 0 |
| AODE | 0.592 | 0.603 | 0.603 | 0.615 | 0.621 | 0.594 | 0 |
| Bayes network | 0.572 | 0.565 | 0.565 | 0.577 | 0.58 | 0.554 | 0 |
| Naïve bay | 0.565 | 0.565 | 0.565 | 0.577 | 0.58 | 0.554 | 0 |
| SVM | 0.5 | 0.519 | 0.519 | 0.481 | 0.269 | 0.355 | 0 |
| Logistic | 0.544 | 0.519 | 0.519 | 0.522 | 0.521 | 0.519 | 0.35 |
| SMO | 0.573 | 0.573 | 0.573 | 0.574 | 0.574 | 0.573 | 0.02 |
| Muti layer |  |  |  |  |  |  |  |

K=36

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Algorithm | AUC | AC | SN | SP | PR | FM | TIME |
| J48 | 0.611 | 0.588 | 0.588 | 0.588 | 0.588 | 0.588 | 0 |
| J48 binary tree | 0.531 | 0.542 | 0.542 | 0.537 | 0.541 | 0.54 | 0 |
| AODE | 0.592 | 0.603 | 0.603 | 0.615 | 0.621 | 0.594 | 0 |
| Bayes network | 0.572 | 0.565 | 0.565 | 0.577 | 0.58 | 0.554 | 0 |
| Naïve bay | 0.565 | 0.565 | 0.565 | 0.577 | 0.58 | 0.554 | 0 |
| SVM | 0.5 | 0.519 | 0.519 | 0.481 | 0.269 | 0.355 | 0 |
| Logistic | 0.544 | 0.519 | 0.519 | 0.522 | 0.521 | 0.519 | 0.32 |
| SMO | 0.573 | 0.573 | 0.573 | 0.574 | 0.574 | 0.573 | 0.02 |
| Muti layer |  |  |  |  |  |  |  |

1. Feature Selection: Gain Ratio

K=10

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Algorithm | AUC | AC | SN | SP | PR | FM | TIME |
| J48 | 0.611 | 0.588 | 0.588 | 0.588 | 0.588 | 0.588 | 0 |
| J48 binary tree | 0.553 | 0.557 | 0.557 | 0.552 | 0.556 | 0.556 | 0 |
| AODE | 0.592 | 0.603 | 0.603 | 0.615 | 0.621 | 0.594 | 0 |
| Bayes network | 0.572 | 0.565 | 0.565 | 0.577 | 0.58 | 0.554 | 0 |
| Naïve bay | 0.565 | 0.565 | 0.565 | 0.577 | 0.58 | 0.554 | 0 |
| SVM | 0.5 | 0.519 | 0.519 | 0.481 | 0.269 | 0.355 | 0 |
| Logistic | 0.544 | 0.519 | 0.519 | 0.522 | 0.521 | 0.519 | 0.21 |
| SMO | 0.573 | 0.573 | 0.573 | 0.574 | 0.574 | 0.573 | 0.02 |
| Muti layer |  |  |  |  |  |  |  |

K=20

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Algorithm | AUC | AC | SN | SP | PR | FM | TIME |
| J48 | 0.611 | 0.588 | 0.588 | 0.588 | 0.588 | 0.588 | 0 |
| J48 binary tree | 0.553 | 0.557 | 0.557 | 0.552 | 0.556 | 0.556 | 0 |
| AODE | 0.592 | 0.603 | 0.603 | 0.615 | 0.621 | 0.594 | 0 |
| Bayes network | 0.572 | 0.565 | 0.565 | 0.577 | 0.58 | 0.554 | 0 |
| Naïve bay | 0.565 | 0.565 | 0.565 | 0.577 | 0.58 | 0.554 | 0 |
| SVM | 0.5 | 0.519 | 0.519 | 0.481 | 0.269 | 0.355 | 0 |
| Logistic | 0.544 | 0.519 | 0.519 | 0.522 | 0.521 | 0.519 | 0.21 |
| SMO | 0.573 | 0.573 | 0.573 | 0.574 | 0.574 | 0.573 | 0.02 |
| Muti layer |  |  |  |  |  |  |  |

K=30

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Algorithm | AUC | AC | SN | SP | PR | FM | TIME |
| J48 | 0.611 | 0.588 | 0.588 | 0.588 | 0.588 | 0.588 | 0 |
| J48 binary tree | 0.553 | 0.557 | 0.557 | 0.552 | 0.556 | 0.556 | 0 |
| AODE | 0.592 | 0.603 | 0.603 | 0.615 | 0.621 | 0.594 | 0 |
| Bayes network | 0.572 | 0.565 | 0.565 | 0.577 | 0.58 | 0.554 | 0 |
| Naïve bay | 0.565 | 0.565 | 0.565 | 0.577 | 0.58 | 0.554 | 0 |
| SVM | 0.5 | 0.519 | 0.519 | 0.481 | 0.269 | 0.355 | 0 |
| Logistic | 0.544 | 0.519 | 0.519 | 0.522 | 0.521 | 0.519 | 0.21 |
| SMO | 0.573 | 0.573 | 0.573 | 0.574 | 0.574 | 0.573 | 0.02 |
| Muti layer |  |  |  |  |  |  |  |

K=36

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Algorithm | AUC | AC | SN | SP | PR | FM | TIME |
| J48 | 0.611 | 0.588 | 0.588 | 0.588 | 0.588 | 0.588 | 0 |
| J48 binary tree | 0.553 | 0.557 | 0.557 | 0.552 | 0.556 | 0.556 | 0 |
| AODE | 0.592 | 0.603 | 0.603 | 0.615 | 0.621 | 0.594 | 0 |
| Bayes network | 0.572 | 0.565 | 0.565 | 0.577 | 0.58 | 0.554 | 0 |
| Naïve bay | 0.565 | 0.565 | 0.565 | 0.577 | 0.58 | 0.554 | 0 |
| SVM | 0.5 | 0.519 | 0.519 | 0.481 | 0.269 | 0.355 | 0 |
| Logistic | 0.544 | 0.519 | 0.519 | 0.522 | 0.521 | 0.519 | 0.21 |
| SMO | 0.573 | 0.573 | 0.573 | 0.574 | 0.574 | 0.573 | 0.02 |
| Muti layer |  |  |  |  |  |  |  |

1. Feature Selection: Information Gain

K=10

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Algorithm | AUC | AC | SN | SP | PR | FM | TIME |
| J48 | 0.611 | 0.588 | 0.588 | 0.588 | 0.588 | 0.588 | 0 |
| J48 binary tree | 0.551 | 0.557 | 0.557 | 0.552 | 0.556 | 0.556 | 0 |
| AODE | 0.592 | 0.603 | 0.603 | 0.615 | 0.621 | 0.594 | 0 |
| Bayes network | 0.572 | 0.565 | 0.565 | 0.577 | 0.58 | 0.554 | 0 |
| Naïve bay | 0.565 | 0.565 | 0.565 | 0.577 | 0.58 | 0.554 | 0 |
| SVM | 0.5 | 0.519 | 0.519 | 0.481 | 0.269 | 0.355 | 0 |
| Logistic | 0.544 | 0.519 | 0.519 | 0.522 | 0.521 | 0.519 | 0.28 |
| SMO | 0.573 | 0.573 | 0.573 | 0.574 | 0.574 | 0.573 | 0.02 |
| Muti layer |  |  |  |  |  |  |  |

K=20

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Algorithm | AUC | AC | SN | SP | PR | FM | TIME |
| J48 | 0.611 | 0.588 | 0.588 | 0.588 | 0.588 | 0.588 | 0 |
| J48 binary tree | 0.551 | 0.557 | 0.557 | 0.552 | 0.556 | 0.556 | 0 |
| AODE | 0.592 | 0.603 | 0.603 | 0.615 | 0.621 | 0.594 | 0 |
| Bayes network | 0.572 | 0.565 | 0.565 | 0.577 | 0.58 | 0.554 | 0 |
| Naïve bay | 0.565 | 0.565 | 0.565 | 0.577 | 0.58 | 0.554 | 0 |
| SVM | 0.5 | 0.519 | 0.519 | 0.481 | 0.269 | 0.355 | 0 |
| Logistic | 0.544 | 0.519 | 0.519 | 0.522 | 0.521 | 0.519 | 0.28 |
| SMO | 0.573 | 0.573 | 0.573 | 0.574 | 0.574 | 0.573 | 0.02 |
| Muti layer |  |  |  |  |  |  |  |

K=30

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Algorithm | AUC | AC | SN | SP | PR | FM | TIME |
| J48 | 0.611 | 0.588 | 0.588 | 0.588 | 0.588 | 0.588 | 0 |
| J48 binary tree | 0.551 | 0.557 | 0.557 | 0.552 | 0.556 | 0.556 | 0 |
| AODE | 0.592 | 0.603 | 0.603 | 0.615 | 0.621 | 0.594 | 0 |
| Bayes network | 0.572 | 0.565 | 0.565 | 0.577 | 0.58 | 0.554 | 0 |
| Naïve bay | 0.565 | 0.565 | 0.565 | 0.577 | 0.58 | 0.554 | 0 |
| SVM | 0.5 | 0.519 | 0.519 | 0.481 | 0.269 | 0.355 | 0 |
| Logistic | 0.544 | 0.519 | 0.519 | 0.522 | 0.521 | 0.519 | 0.28 |
| SMO | 0.573 | 0.573 | 0.573 | 0.574 | 0.574 | 0.573 | 0.02 |
| Muti layer |  |  |  |  |  |  |  |

K=36

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Algorithm | AUC | AC | SN | SP | PR | FM | TIME |
| J48 | 0.611 | 0.588 | 0.588 | 0.588 | 0.588 | 0.588 | 0 |
| J48 binary tree | 0.551 | 0.557 | 0.557 | 0.552 | 0.556 | 0.556 | 0 |
| AODE | 0.592 | 0.603 | 0.603 | 0.615 | 0.621 | 0.594 | 0 |
| Bayes network | 0.572 | 0.565 | 0.565 | 0.577 | 0.58 | 0.554 | 0 |
| Naïve bay | 0.565 | 0.565 | 0.565 | 0.577 | 0.58 | 0.554 | 0 |
| SVM | 0.5 | 0.519 | 0.519 | 0.481 | 0.269 | 0.355 | 0 |
| Logistic | 0.544 | 0.519 | 0.519 | 0.522 | 0.521 | 0.519 | 0.28 |
| SMO | 0.573 | 0.573 | 0.573 | 0.574 | 0.574 | 0.573 | 0.02 |
| Muti layer |  |  |  |  |  |  |  |

1. Feature Selection: Relief

K=10

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Algorithm | AUC | AC | SN | SP | PR | FM | TIME |
| J48 | 0.611 | 0.588 | 0.588 | 0.588 | 0.588 | 0.588 | 0 |
| J48 binary tree | 0.522 | 0.519 | 0.519 | 0.519 | 0.52 | 0.519 | 0 |
| AODE | 0.592 | 0.603 | 0.603 | 0.615 | 0.621 | 0.594 | 0 |
| Bayes network | 0.572 | 0.565 | 0.565 | 0.577 | 0.58 | 0.554 | 0 |
| Naïve bay | 0.565 | 0.565 | 0.565 | 0.577 | 0.58 | 0.554 | 0 |
| SVM | 0.5 | 0.519 | 0.519 | 0.481 | 0.269 | 0.355 | 0 |
| Logistic | 0.544 | 0.519 | 0.519 | 0.522 | 0.521 | 0.519 | 0.28 |
| SMO | 0.573 | 0.573 | 0.573 | 0.574 | 0.574 | 0.573 | 0.02 |
| Muti layer |  |  |  |  |  |  |  |

K=20

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Algorithm | AUC | AC | SN | SP | PR | FM | TIME |
| J48 | 0.611 | 0.588 | 0.588 | 0.588 | 0.588 | 0.588 | 0 |
| J48 binary tree | 0.522 | 0.519 | 0.519 | 0.519 | 0.52 | 0.519 | 0 |
| AODE | 0.592 | 0.603 | 0.603 | 0.615 | 0.621 | 0.594 | 0 |
| Bayes network | 0.572 | 0.565 | 0.565 | 0.577 | 0.58 | 0.554 | 0 |
| Naïve bay | 0.565 | 0.565 | 0.565 | 0.577 | 0.58 | 0.554 | 0 |
| SVM | 0.5 | 0.519 | 0.519 | 0.481 | 0.269 | 0.355 | 0 |
| Logistic | 0.544 | 0.519 | 0.519 | 0.522 | 0.521 | 0.519 | 0.28 |
| SMO | 0.573 | 0.573 | 0.573 | 0.574 | 0.574 | 0.573 | 0.02 |
| Muti layer |  |  |  |  |  |  |  |

K=30

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Algorithm | AUC | AC | SN | SP | PR | FM | TIME |
| J48 | 0.611 | 0.588 | 0.588 | 0.588 | 0.588 | 0.588 | 0 |
| J48 binary tree | 0.522 | 0.519 | 0.519 | 0.519 | 0.52 | 0.519 | 0 |
| AODE | 0.592 | 0.603 | 0.603 | 0.615 | 0.621 | 0.594 | 0 |
| Bayes network | 0.572 | 0.565 | 0.565 | 0.577 | 0.58 | 0.554 | 0 |
| Naïve bay | 0.565 | 0.565 | 0.565 | 0.577 | 0.58 | 0.554 | 0 |
| SVM | 0.5 | 0.519 | 0.519 | 0.481 | 0.269 | 0.355 | 0 |
| Logistic | 0.544 | 0.519 | 0.519 | 0.522 | 0.521 | 0.519 | 0.28 |
| SMO | 0.573 | 0.573 | 0.573 | 0.574 | 0.574 | 0.573 | 0.02 |
| Muti layer |  |  |  |  |  |  |  |

K=36

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Algorithm | AUC | AC | SN | SP | PR | FM | TIME |
| J48 | 0.611 | 0.588 | 0.588 | 0.588 | 0.588 | 0.588 | 0 |
| J48 binary tree | 0.522 | 0.519 | 0.519 | 0.519 | 0.52 | 0.519 | 0 |
| AODE | 0.592 | 0.603 | 0.603 | 0.615 | 0.621 | 0.594 | 0 |
| Bayes network | 0.572 | 0.565 | 0.565 | 0.577 | 0.58 | 0.554 | 0 |
| Naïve bay | 0.565 | 0.565 | 0.565 | 0.577 | 0.58 | 0.554 | 0 |
| SVM | 0.5 | 0.519 | 0.519 | 0.481 | 0.269 | 0.355 | 0 |
| Logistic | 0.544 | 0.519 | 0.519 | 0.522 | 0.521 | 0.519 | 0.28 |
| SMO | 0.573 | 0.573 | 0.573 | 0.574 | 0.574 | 0.573 | 0.02 |
| Muti layer |  |  |  |  |  |  |  |