

# No Title Given

No Author Given

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## 1 Results

Table 1. CART – AUC

| Dataset name                  | SMOTE                | polynom-ft-SMOTE     | Lee                  | SMOBD                | G-SMOTE              | INQ-SMOTE            | Assembled-SMOTE      | SMOTE-TomekLinks     | JFOTS.pr             | JFOTS.re             | JFOTS.prom           |
|-------------------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| abalone19                     | 0.561 ± 0.042        | 0.561 ± 0.015        | 0.546 ± 0.038        | <b>0.565 ± 0.042</b> | 0.545 ± 0.052        | 0.557 ± 0.051        | 0.555 ± 0.047        | 0.561 ± 0.042        | 0.565 ± 0.019        | 0.540 ± 0.045        | 0.547 ± 0.070        |
| abalone18                     | 0.665 ± 0.059        | 0.609 ± 0.040        | 0.672 ± 0.051        | <b>0.685 ± 0.051</b> | 0.653 ± 0.033        | 0.684 ± 0.082        | 0.649 ± 0.038        | 0.667 ± 0.062        | 0.658 ± 0.041        | 0.561 ± 0.075        | 0.613 ± 0.061        |
| ecoli-0-1-3-vs-2-6            | 0.790 ± 0.115        | 0.790 ± 0.115        | 0.790 ± 0.115        | <b>0.815 ± 0.063</b> | 0.776 ± 0.100        | 0.790 ± 0.115        | 0.790 ± 0.115        | 0.790 ± 0.115        | 0.694 ± 0.110        | 0.609 ± 0.088        | 0.713 ± 0.115        |
| glass-0-1-6-vs-2              | 0.629 ± 0.058        | 0.570 ± 0.054        | <b>0.663 ± 0.054</b> | 0.642 ± 0.063        | 0.609 ± 0.057        | 0.588 ± 0.108        | 0.633 ± 0.108        | 0.628 ± 0.055        | 0.653 ± 0.106        | 0.576 ± 0.043        | 0.608 ± 0.052        |
| glass-0-1-6-vs-2              | 0.860 ± 0.133        | 0.860 ± 0.133        | 0.860 ± 0.133        | 0.860 ± 0.133        | 0.794 ± 0.185        | <b>0.804 ± 0.133</b> | 0.860 ± 0.133        | 0.860 ± 0.133        | 0.765 ± 0.151        | 0.883 ± 0.154        | 0.763 ± 0.158        |
| glass2                        | 0.591 ± 0.121        | 0.563 ± 0.077        | 0.577 ± 0.111        | 0.610 ± 0.101        | 0.599 ± 0.108        | 0.582 ± 0.110        | 0.575 ± 0.094        | 0.606 ± 0.124        | 0.586 ± 0.076        | 0.550 ± 0.077        | <b>0.616 ± 0.091</b> |
| glass1                        | 0.854 ± 0.086        | 0.835 ± 0.053        | 0.854 ± 0.087        | 0.845 ± 0.086        | <b>0.857 ± 0.082</b> | 0.808 ± 0.090        | 0.853 ± 0.090        | 0.854 ± 0.086        | 0.797 ± 0.109        | 0.764 ± 0.140        | 0.770 ± 0.114        |
| glass2                        | 0.851 ± 0.154        | 0.849 ± 0.153        | 0.851 ± 0.154        | 0.851 ± 0.154        | 0.862 ± 0.160        | <b>0.935 ± 0.107</b> | 0.851 ± 0.154        | 0.851 ± 0.154        | 0.839 ± 0.150        | 0.895 ± 0.127        | 0.791 ± 0.156        |
| page-blocks-1-3-vs-4          | 0.969 ± 0.059        | 0.949 ± 0.060        | 0.966 ± 0.068        | 0.964 ± 0.068        | 0.972 ± 0.063        | 0.962 ± 0.050        | <b>0.983 ± 0.032</b> | 0.969 ± 0.059        | 0.902 ± 0.062        | 0.884 ± 0.100        | 0.924 ± 0.089        |
| yeast-0-5-6-7-9-vs-4          | 0.696 ± 0.057        | 0.680 ± 0.048        | <b>0.713 ± 0.047</b> | 0.694 ± 0.056        | 0.677 ± 0.039        | 0.712 ± 0.055        | 0.688 ± 0.037        | 0.701 ± 0.042        | 0.662 ± 0.046        | 0.496 ± 0.008        | 0.675 ± 0.058        |
| yeast-1-2-8-9-vs-2            | 0.588 ± 0.028        | 0.578 ± 0.047        | 0.590 ± 0.030        | 0.578 ± 0.047        | 0.599 ± 0.051        | <b>0.647 ± 0.062</b> | 0.586 ± 0.023        | 0.604 ± 0.044        | 0.554 ± 0.057        | 0.511 ± 0.004        | 0.561 ± 0.041        |
| yeast-1-4-5-8-vs-2            | 0.532 ± 0.049        | <b>0.554 ± 0.026</b> | 0.535 ± 0.064        | 0.529 ± 0.045        | 0.537 ± 0.053        | 0.518 ± 0.041        | 0.551 ± 0.029        | 0.526 ± 0.048        | 0.506 ± 0.033        | 0.505 ± 0.003        | 0.538 ± 0.056        |
| yeast-1-vs-2                  | 0.613 ± 0.057        | 0.623 ± 0.049        | 0.601 ± 0.067        | 0.635 ± 0.052        | 0.598 ± 0.055        | <b>0.659 ± 0.038</b> | 0.616 ± 0.048        | 0.609 ± 0.053        | 0.584 ± 0.046        | 0.511 ± 0.029        | 0.599 ± 0.068        |
| yeast-2-vs-4                  | 0.845 ± 0.046        | 0.840 ± 0.055        | 0.865 ± 0.043        | 0.861 ± 0.068        | 0.854 ± 0.053        | 0.862 ± 0.041        | <b>0.865 ± 0.042</b> | 0.839 ± 0.037        | 0.815 ± 0.050        | 0.583 ± 0.141        | 0.810 ± 0.033        |
| yeast-2-vs-8                  | 0.730 ± 0.089        | 0.762 ± 0.068        | 0.775 ± 0.104        | <b>0.778 ± 0.084</b> | 0.760 ± 0.070        | 0.751 ± 0.045        | 0.747 ± 0.065        | 0.741 ± 0.087        | 0.756 ± 0.049        | 0.520 ± 0.031        | 0.743 ± 0.049        |
| yeast4                        | 0.675 ± 0.044        | 0.657 ± 0.052        | 0.689 ± 0.061        | 0.690 ± 0.049        | 0.633 ± 0.041        | <b>0.719 ± 0.055</b> | 0.674 ± 0.083        | 0.678 ± 0.046        | 0.670 ± 0.050        | 0.497 ± 0.009        | 0.606 ± 0.055        |
| yeast5                        | 0.862 ± 0.073        | 0.846 ± 0.068        | 0.846 ± 0.064        | 0.859 ± 0.068        | 0.855 ± 0.065        | <b>0.878 ± 0.049</b> | 0.868 ± 0.057        | 0.864 ± 0.076        | 0.841 ± 0.048        | 0.510 ± 0.001        | 0.777 ± 0.113        |
| yeast6                        | 0.730 ± 0.066        | 0.692 ± 0.047        | 0.725 ± 0.067        | 0.747 ± 0.062        | 0.743 ± 0.047        | <b>0.768 ± 0.051</b> | 0.742 ± 0.059        | 0.731 ± 0.064        | 0.679 ± 0.058        | 0.521 ± 0.033        | 0.687 ± 0.050        |
| cleveland-0-vs-4              | <b>0.814 ± 0.055</b> | 0.731 ± 0.129        | 0.785 ± 0.103        | 0.792 ± 0.083        | 0.750 ± 0.127        | 0.745 ± 0.048        | 0.801 ± 0.063        | <b>0.814 ± 0.055</b> | 0.756 ± 0.084        | 0.736 ± 0.097        | 0.690 ± 0.070        |
| ecoli-0-1-4-7-vs-2-3-5-6      | 0.792 ± 0.074        | 0.794 ± 0.048        | 0.822 ± 0.039        | 0.790 ± 0.060        | 0.776 ± 0.066        | 0.822 ± 0.050        | <b>0.827 ± 0.054</b> | 0.806 ± 0.077        | 0.721 ± 0.104        | 0.550 ± 0.083        | 0.745 ± 0.084        |
| ecoli-0-1-vs-2-3-5            | 0.799 ± 0.062        | 0.806 ± 0.102        | 0.784 ± 0.059        | 0.749 ± 0.042        | 0.788 ± 0.041        | <b>0.841 ± 0.058</b> | 0.781 ± 0.050        | 0.800 ± 0.062        | 0.753 ± 0.087        | 0.649 ± 0.137        | 0.759 ± 0.083        |
| ecoli-0-2-6-7-vs-3-5          | 0.799 ± 0.045        | 0.787 ± 0.062        | 0.809 ± 0.054        | 0.822 ± 0.075        | <b>0.829 ± 0.057</b> | 0.827 ± 0.063        | 0.778 ± 0.066        | 0.802 ± 0.047        | 0.773 ± 0.057        | 0.566 ± 0.120        | 0.804 ± 0.060        |
| ecoli-0-6-7-vs-3-5            | 0.795 ± 0.060        | 0.794 ± 0.048        | 0.810 ± 0.052        | 0.813 ± 0.063        | 0.832 ± 0.070        | <b>0.834 ± 0.060</b> | 0.790 ± 0.056        | 0.796 ± 0.069        | 0.773 ± 0.056        | 0.594 ± 0.147        | 0.767 ± 0.098        |
| ecoli-0-6-7-vs-2              | 0.840 ± 0.068        | 0.840 ± 0.074        | 0.828 ± 0.068        | 0.838 ± 0.071        | 0.837 ± 0.064        | 0.842 ± 0.044        | 0.825 ± 0.060        | 0.839 ± 0.070        | <b>0.850 ± 0.078</b> | 0.574 ± 0.127        | 0.835 ± 0.094        |
| glass-0-1-4-6-vs-2            | 0.595 ± 0.051        | 0.560 ± 0.082        | 0.610 ± 0.072        | 0.591 ± 0.062        | 0.613 ± 0.070        | <b>0.638 ± 0.077</b> | 0.558 ± 0.066        | 0.576 ± 0.062        | 0.558 ± 0.071        | 0.557 ± 0.034        | 0.569 ± 0.060        |
| glass-0-1-5-vs-2              | 0.689 ± 0.067        | 0.597 ± 0.068        | 0.677 ± 0.082        | <b>0.713 ± 0.110</b> | 0.631 ± 0.069        | 0.605 ± 0.090        | 0.649 ± 0.079        | 0.678 ± 0.062        | 0.598 ± 0.070        | 0.536 ± 0.072        | 0.561 ± 0.088        |
| yeast-0-2-5-6-vs-3-7-8-9      | 0.713 ± 0.037        | 0.712 ± 0.051        | <b>0.735 ± 0.038</b> | 0.714 ± 0.027        | 0.717 ± 0.033        | 0.728 ± 0.046        | 0.709 ± 0.037        | 0.700 ± 0.034        | 0.646 ± 0.082        | 0.541 ± 0.061        | 0.643 ± 0.035        |
| yeast-0-3-5-9-vs-7-8          | 0.598 ± 0.035        | <b>0.638 ± 0.041</b> | 0.621 ± 0.044        | 0.623 ± 0.050        | 0.614 ± 0.049        | 0.629 ± 0.050        | 0.615 ± 0.028        | 0.630 ± 0.031        | 0.550 ± 0.059        | 0.512 ± 0.016        | 0.563 ± 0.064        |
| abalone-17-vs-7-8-9-10        | 0.644 ± 0.041        | 0.642 ± 0.033        | 0.643 ± 0.042        | 0.660 ± 0.045        | 0.645 ± 0.045        | <b>0.667 ± 0.024</b> | 0.646 ± 0.039        | 0.642 ± 0.036        | 0.633 ± 0.055        | 0.569 ± 0.057        | 0.603 ± 0.051        |
| abalone-19-vs-10-11-12-13     | 0.556 ± 0.041        | 0.517 ± 0.024        | 0.556 ± 0.050        | 0.548 ± 0.035        | 0.541 ± 0.055        | <b>0.576 ± 0.050</b> | 0.557 ± 0.034        | 0.560 ± 0.028        | 0.523 ± 0.039        | 0.514 ± 0.041        | 0.527 ± 0.058        |
| abalone-20-vs-8-9-10          | 0.696 ± 0.050        | 0.584 ± 0.065        | 0.674 ± 0.065        | 0.682 ± 0.050        | 0.630 ± 0.071        | <b>0.789 ± 0.061</b> | 0.681 ± 0.059        | 0.696 ± 0.050        | 0.621 ± 0.054        | 0.589 ± 0.042        | 0.606 ± 0.068        |
| abalone-21-vs-8               | 0.726 ± 0.121        | 0.655 ± 0.074        | 0.699 ± 0.092        | 0.691 ± 0.116        | 0.736 ± 0.075        | <b>0.790 ± 0.070</b> | 0.692 ± 0.105        | 0.734 ± 0.126        | 0.712 ± 0.125        | 0.614 ± 0.092        | 0.649 ± 0.081        |
| flats F                       | 0.558 ± 0.035        | 0.581 ± 0.030        | 0.570 ± 0.045        | 0.578 ± 0.038        | 0.588 ± 0.025        | 0.580 ± 0.034        | 0.576 ± 0.048        | 0.577 ± 0.035        | 0.636 ± 0.083        | 0.575 ± 0.068        | <b>0.666 ± 0.078</b> |
| kddcup-bufferoverflow-vs-jack | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> |
| kddcup-rokkit-imp-vs-jack     | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> |
| kr-vs-k-zero-vs-right         | 0.961 ± 0.050        | 0.965 ± 0.051        | 0.965 ± 0.052        | 0.965 ± 0.051        | <b>0.968 ± 0.042</b> | 0.966 ± 0.071        | 0.954 ± 0.058        | 0.961 ± 0.050        | 0.771 ± 0.082        | 0.702 ± 0.042        | 0.858 ± 0.115        |
| poker-8-9-vs-2                | 0.572 ± 0.039        | 0.558 ± 0.049        | 0.566 ± 0.032        | 0.572 ± 0.032        | 0.545 ± 0.051        | <b>0.585 ± 0.070</b> | 0.543 ± 0.028        | 0.572 ± 0.039        | 0.531 ± 0.048        | 0.517 ± 0.054        | 0.522 ± 0.031        |
| poker-8-9-vs-6                | 0.680 ± 0.087        | 0.824 ± 0.141        | 0.670 ± 0.096        | 0.644 ± 0.084        | 0.750 ± 0.143        | 0.628 ± 0.096        | 0.657 ± 0.105        | 0.680 ± 0.087        | 0.990 ± 0.001        | 0.999 ± 0.001        | <b>0.999 ± 0.001</b> |
| poker-8-vs-9                  | 0.685 ± 0.101        | 0.685 ± 0.163        | 0.703 ± 0.123        | 0.685 ± 0.095        | 0.691 ± 0.098        | 0.669 ± 0.162        | 0.677 ± 0.100        | 0.685 ± 0.101        | <b>0.931 ± 0.085</b> | <b>0.931 ± 0.084</b> | 0.832 ± 0.165        |
| winequality-red-3-vs-2        | 0.564 ± 0.082        | 0.564 ± 0.082        | 0.564 ± 0.082        | 0.562 ± 0.084        | 0.586 ± 0.095        | 0.613 ± 0.127        | 0.563 ± 0.081        | 0.564 ± 0.082        | <b>0.688 ± 0.209</b> | 0.647 ± 0.162        | 0.621 ± 0.158        |
| winequality-red-3-vs-6        | 0.516 ± 0.043        | 0.529 ± 0.066        | 0.506 ± 0.040        | 0.518 ± 0.045        | 0.528 ± 0.089        | <b>0.565 ± 0.056</b> | 0.525 ± 0.064        | 0.516 ± 0.043        | 0.519 ± 0.047        | 0.528 ± 0.049        | 0.557 ± 0.062        |
| winequality-red-4             | 0.552 ± 0.048        | 0.528 ± 0.030        | <b>0.576 ± 0.029</b> | 0.572 ± 0.036        | 0.564 ± 0.040        | 0.571 ± 0.036        | 0.548 ± 0.017        | 0.552 ± 0.050        | 0.537 ± 0.031        | 0.531 ± 0.031        | 0.547 ± 0.038        |
| winequality-red-8-vs-6-7      | 0.543 ± 0.041        | 0.557 ± 0.050        | 0.550 ± 0.039        | <b>0.562 ± 0.051</b> | 0.556 ± 0.054        | 0.555 ± 0.043        | 0.545 ± 0.048        | 0.543 ± 0.041        | 0.544 ± 0.043        | 0.529 ± 0.053        | 0.539 ± 0.039        |
| winequality-red-8-vs-6        | 0.609 ± 0.052        | 0.608 ± 0.064        | 0.605 ± 0.046        | 0.603 ± 0.067        | 0.579 ± 0.047        | 0.614 ± 0.058        | <b>0.630 ± 0.056</b> | 0.609 ± 0.052        | 0.577 ± 0.044        | 0.566 ± 0.063        | 0.571 ± 0.058        |
| winequality-white-3-9-vs-2    | 0.596 ± 0.063        | 0.544 ± 0.047        | 0.540 ± 0.054        | 0.546 ± 0.056        | 0.533 ± 0.061        | <b>0.643 ± 0.056</b> | 0.535 ± 0.037        | 0.566 ± 0.063        | 0.528 ± 0.031        | 0.509 ± 0.019        | 0.525 ± 0.021        |
| winequality-white-3-vs-7      | 0.539 ± 0.045        | 0.557 ± 0.060        | 0.576 ± 0.061        | 0.567 ± 0.055        | 0.590 ± 0.046        | <b>0.737 ± 0.086</b> | 0.524 ± 0.047        | 0.539 ± 0.045        | 0.546 ± 0.032        | 0.578 ± 0.076        | 0.574 ± 0.066        |
| winequality-white-9-vs-4      | 0.722 ± 0.163        | 0.672 ± 0.100        | 0.721 ± 0.162        | 0.721 ± 0.162        | <b>0.722 ± 0.162</b> | 0.692 ± 0.141        | 0.721 ± 0.162        | 0.722 ± 0.163        | 0.573 ± 0.112        | 0.573 ± 0.112        | 0.573 ± 0.112        |
| zoo-3                         | 0.658 ± 0.189        | 0.608 ± 0.123        | 0.665 ± 0.158        | 0.650 ± 0.156        | 0.635 ± 0.160        | <b>0.738 ± 0.159</b> | 0.639 ± 0.122        | 0.658 ± 0.189        | 0.509 ± 0.127        | 0.509 ± 0.127        | 0.509 ± 0.127        |
| ecoli1                        | 0.841 ± 0.056        | 0.848 ± 0.049        | 0.827 ± 0.049        | 0.836 ± 0.039        | 0.837 ± 0.041        | 0.842 ± 0.033        | 0.822 ± 0.048        | <b>0.860 ± 0.041</b> | 0.751 ± 0.067        | 0.556 ± 0.105        | 0.798 ± 0.050        |
| ecoli2                        | 0.855 ± 0.028        | 0.838 ± 0.035        | 0.850 ± 0.033        | 0.852 ± 0.036        | 0.854 ± 0.029        | <b>0.866 ± 0.037</b> | 0.852 ± 0.041        | 0.855 ± 0.028        | 0.777 ± 0.083        | 0.578 ± 0.113        | 0.818 ± 0.056        |
| ecoli3                        | 0.745 ± 0.049        | 0.748 ± 0.065        | 0.768 ± 0.067        | 0.772 ± 0.049        | 0.766 ± 0.053        | <b>0.833 ± 0.049</b> | 0.775 ± 0.051        | 0.755 ± 0.053        | 0.760 ± 0.050        | 0.554 ± 0.100        | 0.753 ± 0.110        |
| glass0                        | 0.767 ± 0.036        | 0.770 ± 0.060        | 0.772 ± 0.038        | 0.787 ± 0.033        | 0.781 ± 0.041        | <b>0.802 ± 0.041</b> | 0.794 ± 0.040        | 0.774 ± 0.025        | 0.746 ± 0.051        | 0.673 ± 0.069        | 0.731 ± 0.068        |
| glass1                        | 0.719 ± 0.029        | <b>0.733 ± 0.031</b> | 0.727 ± 0.054        | 0.726 ± 0.058        | 0.714 ± 0.045        | 0.717 ± 0.046        | 0.726 ± 0.061        | 0.716 ± 0.033        | 0.676 ± 0.081        | 0.591 ± 0.058        | 0.658 ± 0.049        |
| haberman                      | 0.584 ± 0.035        | 0.567 ± 0.025        | 0.573 ± 0.041        | 0.563 ± 0.045        | 0.572 ± 0.052        | 0.577 ± 0.038        | 0.565 ± 0.055        | <b>0.596 ± 0.045</b> | 0.584 ± 0.025        | 0.536 ± 0.058        | 0.573 ± 0.052        |
| page-blocks0                  | 0.917 ± 0.012        | 0.898 ± 0.010        | 0.915 ± 0.010        | 0.914 ± 0.008        | 0.907 ± 0.009        | 0.900 ± 0.009        | <b>0.919 ± 0.011</b> | 0.917 ± 0.008        | 0.907 ± 0.013        | 0.895 ± 0.014        | 0.890 ± 0.019        |
| ptms                          | 0.965 ± 0.020        | 0.673 ± 0.023        | 0.660 ± 0.021        | 0.665 ± 0.015        | 0.663 ± 0.024        | <b>0.678 ± 0.027</b> | 0.658 ± 0.021        | 0.670 ± 0.025        | 0.659 ± 0.030        | 0.600 ± 0.041        | 0.665 ± 0.027        |
| vehicle1                      | 0.668 ± 0.024        | 0.668 ± 0.021        | 0.680 ± 0.032        | 0.671 ± 0.025        | 0.664 ± 0.028        | <b>0.685 ± 0.023</b> | 0.671 ± 0.024        | 0.676 ± 0.014        | 0.663 ± 0.019        | 0.665 ± 0.021        | 0.667 ± 0.022        |
| vehicle3                      | 0.666 ± 0.023        | <b>0.690 ± 0.023</b> | 0.655 ± 0.023        | 0.677 ± 0.028        | 0.671 ± 0.019        | 0.685 ± 0.014        | 0.674                |                      |                      |                      |                      |

Table 2. SVM – AUC

| Dataset name                  | SMOTE                | polynom-fit-SMOTE    | Lee                  | SMOBD                | G-SMOTE              | LVQ-SMOTE            | Assembled-SMOTE      | SMOTE-TonekLinks     | JFOTS_pr             | JFOTS_rc             | JFOTS_prom    |
|-------------------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|---------------|
| abalone19                     | 0.593 ± 0.063        | 0.569 ± 0.048        | 0.593 ± 0.057        | 0.599 ± 0.065        | 0.602 ± 0.063        | <b>0.655 ± 0.056</b> | 0.593 ± 0.062        | 0.593 ± 0.063        | 0.620 ± 0.082        | 0.597 ± 0.083        | 0.610 ± 0.047 |
| abalone19-18                  | 0.740 ± 0.052        | 0.698 ± 0.036        | 0.745 ± 0.035        | 0.750 ± 0.042        | 0.738 ± 0.055        | <b>0.782 ± 0.043</b> | 0.739 ± 0.038        | 0.739 ± 0.051        | 0.678 ± 0.060        | 0.661 ± 0.091        | 0.668 ± 0.076 |
| ecoli0-0-1-3-7-vs-2-6         | 0.845 ± 0.075        | 0.847 ± 0.078        | 0.838 ± 0.074        | 0.842 ± 0.076        | 0.845 ± 0.079        | 0.828 ± 0.078        | 0.844 ± 0.075        | 0.845 ± 0.075        | 0.840 ± 0.110        | <b>0.861 ± 0.092</b> |               |
| glass0-1-6-vs-2               | 0.740 ± 0.099        | 0.697 ± 0.081        | <b>0.744 ± 0.090</b> | 0.740 ± 0.079        | 0.690 ± 0.076        | 0.622 ± 0.083        | 0.743 ± 0.072        | 0.740 ± 0.100        | 0.724 ± 0.090        | 0.673 ± 0.092        | 0.694 ± 0.065 |
| glass0-1-6-vs-2               | 0.820 ± 0.098        | 0.792 ± 0.117        | 0.820 ± 0.098        | 0.820 ± 0.098        | 0.792 ± 0.116        | 0.843 ± 0.147        | 0.820 ± 0.098        | 0.784 ± 0.123        | <b>0.869 ± 0.153</b> | 0.808 ± 0.146        |               |
| glass2                        | 0.642 ± 0.143        | 0.638 ± 0.134        | 0.648 ± 0.140        | 0.637 ± 0.137        | 0.651 ± 0.137        | <b>0.677 ± 0.158</b> | 0.648 ± 0.146        | 0.641 ± 0.143        | 0.626 ± 0.130        | 0.631 ± 0.118        | 0.643 ± 0.119 |
| glass5                        | <b>0.892 ± 0.094</b> | 0.852 ± 0.116        | 0.883 ± 0.108        | 0.876 ± 0.121        | 0.876 ± 0.103        | 0.870 ± 0.111        | 0.876 ± 0.082        |                      | <b>0.892 ± 0.094</b> | 0.821 ± 0.068        | 0.788 ± 0.142 |
| glass5                        | 0.818 ± 0.106        | 0.809 ± 0.103        | 0.828 ± 0.099        | 0.828 ± 0.099        | 0.817 ± 0.106        | 0.854 ± 0.155        | 0.818 ± 0.106        | 0.818 ± 0.106        | 0.788 ± 0.098        | <b>0.870 ± 0.119</b> | 0.847 ± 0.117 |
| page-blocks1-3-vs-4           | 0.904 ± 0.111        | 0.791 ± 0.070        | <b>0.908 ± 0.112</b> | 0.907 ± 0.112        | 0.903 ± 0.119        | 0.796 ± 0.048        | 0.888 ± 0.116        | 0.904 ± 0.114        | 0.819 ± 0.074        | 0.862 ± 0.073        | 0.835 ± 0.124 |
| yeast0-5-6-7-9-vs-4           | 0.749 ± 0.047        | 0.741 ± 0.037        | 0.762 ± 0.040        | 0.752 ± 0.049        | 0.747 ± 0.055        | <b>0.765 ± 0.030</b> | 0.749 ± 0.041        | 0.746 ± 0.047        | 0.696 ± 0.066        | 0.496 ± 0.008        | 0.706 ± 0.068 |
| yeast-1-2-8-9-vs-7            | 0.606 ± 0.041        | 0.594 ± 0.054        | 0.608 ± 0.050        | 0.605 ± 0.049        | 0.620 ± 0.049        | <b>0.673 ± 0.069</b> | 0.605 ± 0.053        | 0.610 ± 0.038        | 0.566 ± 0.052        | 0.511 ± 0.004        | 0.584 ± 0.039 |
| yeast-1-4-5-8-vs-7            | 0.571 ± 0.051        | 0.568 ± 0.051        | 0.564 ± 0.047        | 0.561 ± 0.037        | 0.577 ± 0.047        | <b>0.600 ± 0.034</b> | 0.557 ± 0.035        | 0.571 ± 0.050        | 0.543 ± 0.035        | 0.505 ± 0.003        | 0.576 ± 0.050 |
| yeast-1-vs-7                  | 0.690 ± 0.041        | 0.671 ± 0.046        | 0.691 ± 0.039        | <b>0.692 ± 0.043</b> | 0.664 ± 0.066        | 0.686 ± 0.064        | 0.683 ± 0.040        | 0.689 ± 0.041        | 0.596 ± 0.086        | 0.512 ± 0.030        | 0.630 ± 0.066 |
| yeast-2-vs-4                  | 0.870 ± 0.039        | 0.862 ± 0.040        | 0.873 ± 0.039        | <b>0.875 ± 0.045</b> | 0.871 ± 0.046        | 0.869 ± 0.034        | 0.868 ± 0.046        | 0.870 ± 0.038        | 0.848 ± 0.033        | 0.605 ± 0.174        | 0.855 ± 0.054 |
| yeast-2-vs-4                  | 0.736 ± 0.046        | 0.773 ± 0.051        | 0.747 ± 0.043        | 0.756 ± 0.040        | 0.738 ± 0.047        | <b>0.795 ± 0.064</b> | 0.740 ± 0.063        | 0.736 ± 0.046        | 0.756 ± 0.071        | 0.517 ± 0.025        | 0.692 ± 0.091 |
| yeast4                        | 0.765 ± 0.034        | 0.746 ± 0.032        | 0.769 ± 0.042        | 0.768 ± 0.032        | 0.750 ± 0.033        | <b>0.792 ± 0.032</b> | 0.757 ± 0.024        | 0.764 ± 0.034        | 0.688 ± 0.023        | 0.497 ± 0.009        | 0.744 ± 0.086 |
| yeast5                        | 0.927 ± 0.029        | 0.924 ± 0.030        | 0.927 ± 0.029        | 0.927 ± 0.029        | 0.930 ± 0.028        | <b>0.941 ± 0.024</b> | 0.927 ± 0.029        | 0.927 ± 0.029        | 0.900 ± 0.064        | 0.510 ± 0.001        | 0.860 ± 0.135 |
| yeast6                        | 0.843 ± 0.049        | 0.840 ± 0.046        | 0.848 ± 0.054        | 0.840 ± 0.049        | 0.844 ± 0.049        | <b>0.862 ± 0.034</b> | 0.842 ± 0.053        | 0.843 ± 0.049        | 0.756 ± 0.054        | 0.520 ± 0.031        | 0.816 ± 0.041 |
| cleveland0-vs-4               | 0.719 ± 0.089        | 0.681 ± 0.082        | 0.728 ± 0.101        | 0.736 ± 0.099        | 0.704 ± 0.084        | <b>0.845 ± 0.052</b> | 0.719 ± 0.088        | 0.719 ± 0.089        | 0.718 ± 0.048        | 0.666 ± 0.101        | 0.680 ± 0.101 |
| ecoli0-1-4-7-vs-2-3-5-6       | 0.872 ± 0.032        | 0.851 ± 0.020        | 0.867 ± 0.029        | 0.866 ± 0.019        | 0.870 ± 0.033        | <b>0.884 ± 0.033</b> | 0.871 ± 0.037        | 0.872 ± 0.032        | 0.758 ± 0.130        | 0.595 ± 0.135        | 0.836 ± 0.070 |
| ecoli0-1-vs-2-3-5             | 0.854 ± 0.041        | 0.865 ± 0.044        | 0.863 ± 0.044        | 0.861 ± 0.043        | 0.856 ± 0.041        | <b>0.886 ± 0.047</b> | 0.858 ± 0.045        | 0.853 ± 0.041        | 0.793 ± 0.088        | 0.692 ± 0.199        | 0.820 ± 0.055 |
| ecoli0-2-6-7-vs-3-5           | 0.834 ± 0.056        | 0.842 ± 0.061        | 0.838 ± 0.056        | 0.843 ± 0.056        | 0.853 ± 0.063        | <b>0.871 ± 0.050</b> | 0.835 ± 0.059        | 0.834 ± 0.056        | 0.827 ± 0.054        | 0.667 ± 0.149        | 0.851 ± 0.053 |
| ecoli0-6-7-vs-3-5             | 0.846 ± 0.055        | 0.851 ± 0.056        | 0.843 ± 0.056        | 0.857 ± 0.059        | 0.856 ± 0.062        | <b>0.869 ± 0.060</b> | 0.846 ± 0.061        | 0.846 ± 0.055        | 0.845 ± 0.051        | 0.680 ± 0.159        | 0.852 ± 0.052 |
| ecoli0-6-7-vs-2               | 0.861 ± 0.043        | 0.863 ± 0.043        | 0.863 ± 0.044        | 0.859 ± 0.043        | 0.860 ± 0.042        | <b>0.887 ± 0.047</b> | 0.859 ± 0.044        | 0.862 ± 0.042        | 0.861 ± 0.044        | 0.647 ± 0.163        | 0.884 ± 0.085 |
| glass0-1-4-6-vs-2             | 0.710 ± 0.101        | 0.669 ± 0.128        | 0.713 ± 0.107        | 0.702 ± 0.131        | 0.665 ± 0.120        | 0.625 ± 0.090        | <b>0.716 ± 0.127</b> | 0.709 ± 0.101        | 0.609 ± 0.085        | 0.662 ± 0.083        | 0.631 ± 0.134 |
| glass0-1-5-vs-2               | 0.696 ± 0.063        | 0.659 ± 0.067        | 0.701 ± 0.062        | <b>0.711 ± 0.071</b> | 0.671 ± 0.071        | 0.581 ± 0.049        | 0.685 ± 0.068        | 0.696 ± 0.063        | 0.673 ± 0.066        | 0.616 ± 0.162        | 0.641 ± 0.105 |
| yeast0-2-3-5-6-vs-7-8-9       | 0.782 ± 0.026        | 0.775 ± 0.041        | 0.778 ± 0.032        | 0.788 ± 0.019        | 0.772 ± 0.038        | <b>0.791 ± 0.030</b> | 0.781 ± 0.029        | 0.783 ± 0.026        | 0.735 ± 0.062        | 0.559 ± 0.109        | 0.765 ± 0.050 |
| yeast0-3-5-9-vs-7-8           | <b>0.696 ± 0.035</b> | 0.640 ± 0.032        | 0.687 ± 0.036        | 0.690 ± 0.045        | 0.689 ± 0.041        | 0.660 ± 0.035        | 0.692 ± 0.034        | 0.695 ± 0.036        | 0.634 ± 0.069        | 0.516 ± 0.027        | 0.588 ± 0.081 |
| abalone17-vs-7-8-9-10         | 0.814 ± 0.021        | 0.742 ± 0.040        | 0.809 ± 0.024        | 0.810 ± 0.034        | 0.806 ± 0.028        | <b>0.823 ± 0.025</b> | 0.816 ± 0.024        | 0.813 ± 0.019        | 0.677 ± 0.073        | 0.722 ± 0.090        | 0.746 ± 0.114 |
| abalone19-vs-10-11-12-13      | 0.633 ± 0.062        | 0.582 ± 0.058        | 0.637 ± 0.061        | 0.636 ± 0.052        | 0.629 ± 0.058        | <b>0.659 ± 0.075</b> | 0.629 ± 0.067        | 0.633 ± 0.062        | 0.631 ± 0.085        | 0.594 ± 0.058        | 0.572 ± 0.097 |
| abalone20-vs-8-9-10           | 0.806 ± 0.048        | 0.775 ± 0.041        | 0.809 ± 0.043        | 0.802 ± 0.047        | 0.797 ± 0.051        | <b>0.884 ± 0.051</b> | 0.798 ± 0.055        | 0.806 ± 0.048        | 0.743 ± 0.109        | 0.742 ± 0.103        | 0.714 ± 0.111 |
| abalone21-vs-2                | 0.798 ± 0.117        | 0.789 ± 0.120        | 0.798 ± 0.116        | 0.804 ± 0.117        | 0.799 ± 0.122        | <b>0.839 ± 0.070</b> | 0.798 ± 0.117        | 0.799 ± 0.117        | 0.771 ± 0.144        | 0.728 ± 0.125        | 0.771 ± 0.142 |
| flav-F                        | 0.738 ± 0.040        | 0.689 ± 0.046        | 0.732 ± 0.044        | 0.743 ± 0.049        | 0.725 ± 0.043        | <b>0.777 ± 0.047</b> | 0.738 ± 0.045        | 0.738 ± 0.040        | 0.681 ± 0.073        | 0.575 ± 0.068        | 0.727 ± 0.077 |
| kddcup-bufferoverflow-vs-back | 0.993 ± 0.013        | 0.997 ± 0.010        | 0.993 ± 0.013        | 0.993 ± 0.013        | 0.993 ± 0.013        | <b>1.000 ± 0.000</b> | 0.993 ± 0.013        | 0.993 ± 0.013        | 0.997 ± 0.010        | 0.997 ± 0.010        | 0.997 ± 0.010 |
| kddcup-rootkit-innp-vs-back   | <b>0.977 ± 0.023</b> | <b>0.977 ± 0.023</b> | <b>0.977 ± 0.023</b> | <b>0.977 ± 0.023</b> | <b>0.977 ± 0.023</b> | <b>0.977 ± 0.023</b> | 0.977 ± 0.020        | <b>0.977 ± 0.023</b> | 0.977 ± 0.042        | 0.977 ± 0.042        | 0.977 ± 0.042 |
| kr-vs-karozs-vs-ahgt          | 0.937 ± 0.052        | 0.934 ± 0.057        | 0.937 ± 0.052        | 0.937 ± 0.052        | 0.934 ± 0.057        | <b>0.950 ± 0.050</b> | 0.934 ± 0.057        | 0.937 ± 0.052        | 0.843 ± 0.076        | 0.701 ± 0.041        | 0.831 ± 0.108 |
| poker-8-9-vs-2                | 0.625 ± 0.067        | 0.588 ± 0.066        | 0.617 ± 0.058        | 0.613 ± 0.056        | 0.614 ± 0.073        | <b>0.677 ± 0.074</b> | 0.614 ± 0.047        | 0.625 ± 0.067        | 0.634 ± 0.079        | 0.562 ± 0.085        | 0.575 ± 0.073 |
| poker-8-9-vs-4                | 0.757 ± 0.064        | 0.724 ± 0.047        | 0.757 ± 0.064        | 0.744 ± 0.054        | 0.732 ± 0.066        | 0.937 ± 0.055        | 0.749 ± 0.086        | 0.757 ± 0.064        | 0.379 ± 0.041        | <b>0.986 ± 0.037</b> | 0.979 ± 0.041 |
| poker-8-vs-6                  | 0.783 ± 0.073        | 0.712 ± 0.059        | 0.783 ± 0.073        | 0.789 ± 0.066        | 0.746 ± 0.081        | <b>0.968 ± 0.051</b> | 0.789 ± 0.065        | 0.783 ± 0.073        | 0.869 ± 0.123        | 0.850 ± 0.107        | 0.831 ± 0.152 |
| poker-9-vs-7                  | 0.636 ± 0.104        | 0.636 ± 0.104        | 0.636 ± 0.104        | 0.636 ± 0.130        | 0.680 ± 0.135        | 0.611 ± 0.087        | 0.611 ± 0.087        | 0.636 ± 0.104        | <b>0.729 ± 0.163</b> | 0.686 ± 0.139        | 0.657 ± 0.151 |
| winequality-red-3-vs-2        | 0.540 ± 0.049        | 0.542 ± 0.050        | 0.539 ± 0.049        | 0.540 ± 0.049        | 0.541 ± 0.049        | <b>0.608 ± 0.057</b> | 0.550 ± 0.050        | 0.540 ± 0.049        | 0.539 ± 0.096        | 0.526 ± 0.117        | 0.516 ± 0.082 |
| winequality-red-4             | 0.638 ± 0.034        | 0.611 ± 0.029        | 0.632 ± 0.033        | <b>0.644 ± 0.035</b> | 0.625 ± 0.032        | 0.617 ± 0.029        | 0.641 ± 0.034        | 0.637 ± 0.033        | 0.548 ± 0.026        | 0.599 ± 0.051        | 0.609 ± 0.050 |
| winequality-red-5             | 0.571 ± 0.054        | 0.550 ± 0.055        | 0.572 ± 0.054        | 0.571 ± 0.054        | 0.555 ± 0.062        | 0.541 ± 0.063        | 0.557 ± 0.048        | 0.571 ± 0.054        | 0.542 ± 0.067        | 0.518 ± 0.081        | 0.550 ± 0.060 |
| winequality-red-8-vs-6        | 0.614 ± 0.031        | 0.610 ± 0.024        | 0.615 ± 0.031        | 0.615 ± 0.030        | 0.625 ± 0.030        | 0.627 ± 0.056        | 0.625 ± 0.030        | 0.614 ± 0.031        | <b>0.637 ± 0.044</b> | 0.609 ± 0.096        | 0.622 ± 0.079 |
| winequality-white-3-9-vs-2    | 0.565 ± 0.051        | 0.529 ± 0.045        | 0.559 ± 0.057        | 0.560 ± 0.048        | 0.542 ± 0.039        | <b>0.685 ± 0.039</b> | 0.557 ± 0.051        | 0.565 ± 0.051        | 0.519 ± 0.064        | 0.528 ± 0.055        | 0.565 ± 0.055 |
| winequality-white-3-vs-7      | 0.533 ± 0.049        | 0.528 ± 0.041        | 0.549 ± 0.066        | 0.547 ± 0.067        | 0.546 ± 0.039        | <b>0.756 ± 0.077</b> | 0.539 ± 0.047        | 0.533 ± 0.049        | 0.561 ± 0.063        | 0.607 ± 0.121        | 0.594 ± 0.077 |
| winequality-white-9-vs-4      | 0.815 ± 0.134        | 0.815 ± 0.134        | 0.815 ± 0.134        | 0.699 ± 0.218        | <b>0.815 ± 0.134</b> | 0.695 ± 0.214        | 0.815 ± 0.134        | 0.815 ± 0.134        | 0.707 ± 0.175        | 0.707 ± 0.175        | 0.707 ± 0.175 |
| zoo-3                         | <b>0.611 ± 0.162</b> | <b>0.611 ± 0.162</b> | <b>0.611 ± 0.162</b> | 0.597 ± 0.163        | <b>0.611 ± 0.162</b> | 0.595 ± 0.161        | <b>0.611 ± 0.162</b> | <b>0.611 ± 0.162</b> | 0.547 ± 0.174        | 0.547 ± 0.174        | 0.547 ± 0.174 |
| ecoli1                        | 0.885 ± 0.027        | 0.886 ± 0.020        | 0.886 ± 0.020        | 0.884 ± 0.020        | 0.883 ± 0.021        | <b>0.889 ± 0.015</b> | 0.881 ± 0.022        | 0.884 ± 0.026        | 0.875 ± 0.033        | 0.576 ± 0.145        | 0.885 ± 0.015 |
| ecoli2                        | 0.940 ± 0.024        | 0.932 ± 0.014        | 0.941 ± 0.024        | 0.940 ± 0.026        | 0.939 ± 0.025        | 0.938 ± 0.021        | <b>0.942 ± 0.022</b> | 0.939 ± 0.025        | 0.860 ± 0.082        | 0.604 ± 0.146        | 0.894 ± 0.032 |
| ecoli3                        | 0.889 ± 0.022        | 0.893 ± 0.024        | 0.887 ± 0.022        | <b>0.894 ± 0.017</b> | 0.893 ± 0.021        | 0.893 ± 0.019        | 0.887 ± 0.021        | 0.892 ± 0.021        | 0.858 ± 0.056        | 0.602 ± 0.169        | 0.794 ± 0.122 |
| glass0                        | 0.779 ± 0.040        | 0.790 ± 0.020        | 0.785 ± 0.039        | 0.778 ± 0.037        | <b>0.793 ± 0.037</b> | 0.771 ± 0.032        | 0.792 ± 0.034        | 0.778 ± 0.036        | 0.742 ± 0.032        | 0.724 ± 0.065        | 0.751 ± 0.044 |
| glass1                        | 0.701 ± 0.038        | 0.689 ± 0.043        | 0.690 ± 0.038        | 0.696 ± 0.034        | <b>0.703 ± 0.040</b> | 0.677 ± 0.038        | 0.698 ± 0.039        | 0.701 ± 0.044        | 0.694 ± 0.062        | 0.598 ± 0.048        | 0.684 ± 0.049 |
| haberman                      | 0.611 ± 0.026        | <b>0.642 ± 0.035</b> | 0.619 ± 0.026        | 0.597 ± 0.031        | 0.611 ± 0.039        | 0.627 ± 0.027        | 0.614 ± 0.034        | 0.611 ± 0.028        | 0.613 ± 0.039        | 0.559 ± 0.092        | 0.622 ± 0.057 |
| page-blocks0                  | 0.931 ± 0.008        | 0.900 ± 0.008        | 0.931 ± 0.007        | 0.923 ± 0.009        | 0.932 ± 0.008        | 0.848 ± 0.016        | 0.930 ± 0.008        | <b>0.932 ± 0.008</b> | 0.879 ± 0.034        | 0.892 ± 0.025        | 0.882 ± 0.028 |
| ptms                          | 0.727 ± 0.030        | 0.722 ± 0.027        | 0.729 ± 0.023        | 0.726 ± 0.022        | 0.731 ± 0.025        | 0.730 ± 0.017        | <b>0.732 ± 0.028</b> | 0.728 ± 0.032        | 0.706 ± 0.018        | 0.666 ± 0.030        | 0.725 ± 0.022 |
| vehicle1                      | 0.789 ± 0.027        | 0.749 ± 0.023        | 0.790 ± 0.026        | 0.790 ± 0.020        | 0.798 ± 0.016        | 0.792 ± 0.023        | 0.791 ± 0.019        | 0.793 ± 0.025        | 0.695 ± 0.047        | <b>0.804 ± 0.018</b> | 0.779 ± 0.036 |
| vehicle2                      | 0.789 ± 0.022        | 0.734 ± 0.017        | 0.790 ± 0.018        | <b>0.797 ± 0.026</b> | 0.790 ± 0.016        | 0.789 ± 0.023        | 0.789 ± 0.018        | 0.790 ± 0.021        | 0.650 ± 0.021        | 0.789 ± 0.027        | 0.764 ± 0.038 |
| yeast1                        | 0.711 ± 0.013        | 0.695 ± 0.013        |                      |                      |                      |                      |                      |                      |                      |                      |               |

Table 3. KNN – BAC

| Dataset name                   | SMOTE                | polynom-fit-SMOTE    | Lee                  | SMOBD                | G-SMOTE              | LVQ-SMOTE            | Assembled-SMOTE      | SMOTE-TonekLinks     | JFOTS_pr             | JFOTS_rc      | JFOTS_prom    |
|--------------------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|---------------|---------------|
| abalone19                      | 0.568 ± 0.069        | 0.519 ± 0.028        | 0.568 ± 0.069        | 0.567 ± 0.069        | 0.549 ± 0.043        | 0.554 ± 0.047        | 0.565 ± 0.062        | <b>0.568 ± 0.069</b> | 0.520 ± 0.030        | 0.497 ± 0.011 | 0.520 ± 0.032 |
| abalone18                      | 0.719 ± 0.033        | 0.704 ± 0.044        | 0.704 ± 0.034        | 0.709 ± 0.040        | 0.700 ± 0.048        | 0.692 ± 0.053        | 0.714 ± 0.041        | <b>0.720 ± 0.033</b> | 0.645 ± 0.066        | 0.572 ± 0.063 | 0.627 ± 0.058 |
| ecoli-0-1-3-7_vs-2-6           | 0.834 ± 0.075        | <b>0.835 ± 0.076</b> | 0.834 ± 0.074        | 0.833 ± 0.074        | <b>0.835 ± 0.076</b> | 0.833 ± 0.076        | 0.834 ± 0.075        | 0.834 ± 0.075        | 0.800 ± 0.108        | 0.800 ± 0.106 | 0.820 ± 0.096 |
| glass0-1-6_vs-2                | 0.718 ± 0.086        | 0.682 ± 0.045        | 0.713 ± 0.081        | 0.714 ± 0.084        | 0.700 ± 0.056        | 0.657 ± 0.063        | <b>0.725 ± 0.082</b> | 0.717 ± 0.085        | 0.638 ± 0.040        | 0.606 ± 0.086 | 0.660 ± 0.084 |
| glass0-1-6_vs-2                | 0.914 ± 0.097        | <b>0.915 ± 0.098</b> | 0.914 ± 0.097        | 0.911 ± 0.098        | 0.894 ± 0.135        | 0.881 ± 0.120        | 0.914 ± 0.097        | 0.914 ± 0.097        | 0.878 ± 0.118        | 0.842 ± 0.192 | 0.801 ± 0.162 |
| glass0                         | 0.630 ± 0.134        | 0.653 ± 0.137        | 0.637 ± 0.151        | <b>0.644 ± 0.141</b> | 0.630 ± 0.135        | 0.627 ± 0.112        | 0.635 ± 0.145        | 0.628 ± 0.133        | 0.640 ± 0.098        | 0.583 ± 0.096 | 0.596 ± 0.080 |
| glass0                         | 0.901 ± 0.057        | <b>0.903 ± 0.068</b> | 0.876 ± 0.056        | 0.885 ± 0.056        | 0.879 ± 0.071        | 0.863 ± 0.038        | 0.892 ± 0.048        | 0.901 ± 0.057        | 0.818 ± 0.061        | 0.752 ± 0.141 | 0.755 ± 0.062 |
| glass0                         | 0.931 ± 0.110        | <b>0.933 ± 0.110</b> | 0.921 ± 0.116        | 0.931 ± 0.110        | 0.922 ± 0.108        | 0.862 ± 0.108        | 0.931 ± 0.110        | 0.931 ± 0.110        | 0.821 ± 0.114        | 0.867 ± 0.136 | 0.831 ± 0.130 |
| page-blocks-1-3_vs-0           | <b>0.983 ± 0.023</b> | 0.978 ± 0.024        | 0.982 ± 0.023        | <b>0.983 ± 0.023</b> | 0.949 ± 0.095        | 0.980 ± 0.016        | 0.979 ± 0.025        | <b>0.983 ± 0.023</b> | 0.850 ± 0.104        | 0.835 ± 0.086 | 0.888 ± 0.110 |
| yeast-0-5-6-7-9_vs-4           | 0.727 ± 0.045        | <b>0.740 ± 0.038</b> | 0.730 ± 0.040        | 0.733 ± 0.043        | 0.729 ± 0.053        | 0.731 ± 0.045        | 0.718 ± 0.035        | 0.725 ± 0.043        | 0.671 ± 0.068        | 0.498 ± 0.002 | 0.643 ± 0.072 |
| yeast-1-2-8-9_vs-7             | 0.672 ± 0.048        | <b>0.685 ± 0.045</b> | 0.668 ± 0.040        | 0.663 ± 0.040        | 0.649 ± 0.065        | 0.660 ± 0.052        | 0.667 ± 0.051        | 0.672 ± 0.048        | 0.586 ± 0.044        | 0.500 ± 0.000 | 0.567 ± 0.049 |
| yeast-1-4-5-8_vs-7             | 0.611 ± 0.040        | <b>0.614 ± 0.044</b> | 0.594 ± 0.052        | 0.571 ± 0.051        | 0.577 ± 0.042        | 0.605 ± 0.039        | 0.611 ± 0.038        | 0.611 ± 0.038        | 0.536 ± 0.036        | 0.500 ± 0.000 | 0.521 ± 0.048 |
| yeast-1_vs-7                   | 0.723 ± 0.036        | 0.723 ± 0.036        | 0.726 ± 0.035        | <b>0.732 ± 0.042</b> | 0.702 ± 0.055        | 0.690 ± 0.033        | 0.701 ± 0.051        | 0.722 ± 0.035        | 0.608 ± 0.035        | 0.409 ± 0.002 | 0.575 ± 0.076 |
| yeast-2_vs-4                   | 0.873 ± 0.030        | 0.863 ± 0.035        | 0.869 ± 0.033        | 0.871 ± 0.030        | 0.873 ± 0.029        | 0.861 ± 0.034        | <b>0.875 ± 0.027</b> | 0.874 ± 0.030        | 0.842 ± 0.048        | 0.603 ± 0.158 | 0.830 ± 0.047 |
| yeast-2_vs-8                   | 0.802 ± 0.051        | <b>0.810 ± 0.046</b> | 0.794 ± 0.045        | 0.801 ± 0.053        | 0.803 ± 0.044        | 0.806 ± 0.057        | 0.798 ± 0.051        | 0.801 ± 0.050        | 0.772 ± 0.051        | 0.534 ± 0.105 | 0.802 ± 0.062 |
| yeast4                         | 0.729 ± 0.025        | 0.733 ± 0.034        | 0.729 ± 0.027        | 0.729 ± 0.027        | 0.713 ± 0.033        | 0.727 ± 0.045        | <b>0.735 ± 0.039</b> | 0.729 ± 0.025        | 0.692 ± 0.034        | 0.500 ± 0.000 | 0.640 ± 0.051 |
| yeast5                         | 0.929 ± 0.036        | 0.920 ± 0.035        | 0.925 ± 0.036        | 0.922 ± 0.035        | 0.910 ± 0.034        | <b>0.933 ± 0.049</b> | 0.929 ± 0.034        | 0.929 ± 0.036        | 0.865 ± 0.054        | 0.500 ± 0.000 | 0.817 ± 0.129 |
| yeast6                         | 0.814 ± 0.044        | 0.816 ± 0.038        | 0.815 ± 0.044        | 0.813 ± 0.044        | 0.812 ± 0.046        | <b>0.829 ± 0.035</b> | 0.809 ± 0.043        | 0.814 ± 0.044        | 0.733 ± 0.073        | 0.500 ± 0.000 | 0.775 ± 0.039 |
| cleveland0_vs-4                | 0.876 ± 0.009        | 0.868 ± 0.036        | 0.881 ± 0.029        | 0.875 ± 0.068        | 0.873 ± 0.033        | 0.813 ± 0.009        | <b>0.883 ± 0.024</b> | 0.876 ± 0.009        | 0.738 ± 0.086        | 0.719 ± 0.135 | 0.711 ± 0.117 |
| ecoli-0-1-4-7_vs-2-3-5-6       | 0.883 ± 0.018        | 0.878 ± 0.024        | 0.880 ± 0.018        | 0.876 ± 0.018        | <b>0.884 ± 0.022</b> | 0.877 ± 0.028        | 0.882 ± 0.021        | 0.884 ± 0.018        | 0.730 ± 0.121        | 0.568 ± 0.099 | 0.803 ± 0.098 |
| ecoli-0-1_vs-2-3-5             | 0.884 ± 0.024        | <b>0.887 ± 0.026</b> | 0.878 ± 0.025        | 0.880 ± 0.025        | 0.879 ± 0.024        | 0.875 ± 0.042        | 0.886 ± 0.030        | 0.884 ± 0.024        | 0.821 ± 0.104        | 0.689 ± 0.160 | 0.820 ± 0.066 |
| ecoli-0-2-6-7_vs-3-5           | 0.839 ± 0.051        | 0.839 ± 0.051        | 0.842 ± 0.061        | 0.840 ± 0.053        | <b>0.843 ± 0.057</b> | 0.840 ± 0.038        | 0.838 ± 0.049        | 0.839 ± 0.050        | 0.810 ± 0.041        | 0.588 ± 0.122 | 0.840 ± 0.027 |
| ecoli-0-6-7_vs-3-5             | 0.851 ± 0.054        | 0.855 ± 0.053        | 0.854 ± 0.064        | <b>0.858 ± 0.050</b> | 0.847 ± 0.061        | 0.841 ± 0.052        | 0.851 ± 0.052        | 0.852 ± 0.053        | 0.813 ± 0.051        | 0.614 ± 0.143 | 0.799 ± 0.079 |
| ecoli-0-6-7_vs-2               | 0.866 ± 0.047        | 0.865 ± 0.056        | 0.867 ± 0.045        | 0.867 ± 0.053        | 0.870 ± 0.046        | <b>0.870 ± 0.036</b> | 0.865 ± 0.049        | 0.867 ± 0.048        | 0.830 ± 0.065        | 0.509 ± 0.123 | 0.865 ± 0.063 |
| glass0-1-1-4-6_vs-2            | <b>0.674 ± 0.098</b> | 0.665 ± 0.088        | 0.671 ± 0.103        | 0.673 ± 0.099        | 0.645 ± 0.101        | 0.624 ± 0.058        | 0.666 ± 0.105        | 0.669 ± 0.095        | 0.549 ± 0.071        | 0.582 ± 0.110 | 0.567 ± 0.085 |
| glass0-1-5_vs-2                | 0.676 ± 0.059        | 0.674 ± 0.055        | <b>0.684 ± 0.063</b> | 0.669 ± 0.065        | 0.667 ± 0.084        | 0.631 ± 0.060        | 0.683 ± 0.059        | 0.675 ± 0.060        | 0.657 ± 0.088        | 0.622 ± 0.128 | 0.595 ± 0.111 |
| yeast-0-2-5-6_vs-3-7-8-9       | 0.772 ± 0.031        | 0.768 ± 0.025        | <b>0.775 ± 0.028</b> | 0.772 ± 0.026        | 0.773 ± 0.030        | 0.764 ± 0.023        | 0.772 ± 0.031        | 0.773 ± 0.032        | 0.684 ± 0.075        | 0.533 ± 0.058 | 0.683 ± 0.036 |
| yeast-0-5-5-9_vs-7-8           | 0.679 ± 0.037        | 0.675 ± 0.035        | 0.679 ± 0.037        | 0.670 ± 0.043        | 0.678 ± 0.037        | <b>0.681 ± 0.050</b> | 0.669 ± 0.030        | 0.680 ± 0.038        | 0.569 ± 0.083        | 0.502 ± 0.011 | 0.561 ± 0.065 |
| abalone-17_vs-7-8-9-10         | 0.749 ± 0.046        | 0.719 ± 0.034        | <b>0.752 ± 0.045</b> | 0.745 ± 0.046        | 0.713 ± 0.044        | 0.739 ± 0.042        | 0.743 ± 0.044        | 0.749 ± 0.046        | 0.606 ± 0.033        | 0.582 ± 0.077 | 0.612 ± 0.072 |
| abalone-19_vs-10-11-12-13      | 0.583 ± 0.037        | 0.551 ± 0.025        | 0.587 ± 0.040        | <b>0.589 ± 0.047</b> | 0.554 ± 0.046        | 0.569 ± 0.045        | 0.570 ± 0.044        | 0.582 ± 0.037        | 0.535 ± 0.032        | 0.515 ± 0.033 | 0.523 ± 0.044 |
| abalone-20_vs-8-9-10           | 0.750 ± 0.055        | 0.692 ± 0.025        | 0.758 ± 0.062        | <b>0.761 ± 0.067</b> | 0.667 ± 0.058        | 0.709 ± 0.052        | 0.743 ± 0.082        | 0.746 ± 0.058        | 0.635 ± 0.056        | 0.549 ± 0.077 | 0.638 ± 0.049 |
| abalone-21_vs-2                | <b>0.830 ± 0.084</b> | 0.771 ± 0.079        | 0.815 ± 0.074        | 0.815 ± 0.076        | 0.797 ± 0.080        | 0.794 ± 0.065        | 0.822 ± 0.080        | 0.830 ± 0.084        | 0.703 ± 0.095        | 0.667 ± 0.121 | 0.710 ± 0.089 |
| flare-F                        | 0.693 ± 0.044        | 0.674 ± 0.035        | 0.690 ± 0.050        | 0.693 ± 0.044        | 0.671 ± 0.043        | 0.693 ± 0.036        | <b>0.694 ± 0.041</b> | 0.692 ± 0.044        | 0.552 ± 0.042        | 0.504 ± 0.009 | 0.566 ± 0.053 |
| kddcup-buffer_overflow_vs-back | 0.957 ± 0.047        | 0.957 ± 0.047        | 0.957 ± 0.047        | 0.957 ± 0.047        | 0.947 ± 0.050        | <b>0.960 ± 0.042</b> | 0.947 ± 0.043        | 0.957 ± 0.047        | 0.957 ± 0.045        | 0.957 ± 0.045 | 0.957 ± 0.045 |
| kddcup-rootkit_insp_vs-back    | <b>0.973 ± 0.022</b> | 0.964 ± 0.040        | <b>0.973 ± 0.022</b> | <b>0.973 ± 0.022</b> | 0.955 ± 0.045        | 0.945 ± 0.027        | 0.955 ± 0.050        | <b>0.973 ± 0.022</b> | 0.961 ± 0.040        | 0.964 ± 0.040 | 0.964 ± 0.040 |
| kr-vs-karoo_vs-ahgnt           | 0.940 ± 0.050        | 0.930 ± 0.053        | 0.944 ± 0.050        | <b>0.944 ± 0.049</b> | 0.926 ± 0.061        | 0.944 ± 0.060        | 0.929 ± 0.060        | 0.940 ± 0.050        | 0.757 ± 0.163        | 0.500 ± 0.000 | 0.749 ± 0.175 |
| poker-8-9_vs-2                 | 0.609 ± 0.059        | 0.578 ± 0.036        | 0.617 ± 0.065        | 0.608 ± 0.062        | 0.548 ± 0.044        | <b>0.643 ± 0.048</b> | 0.614 ± 0.061        | 0.609 ± 0.059        | 0.546 ± 0.069        | 0.514 ± 0.036 | 0.550 ± 0.075 |
| poker-8-9_vs-6                 | 0.949 ± 0.040        | 0.912 ± 0.033        | 0.949 ± 0.039        | 0.949 ± 0.039        | 0.904 ± 0.053        | 0.976 ± 0.027        | 0.937 ± 0.031        | 0.949 ± 0.040        | <b>0.988 ± 0.038</b> | 0.976 ± 0.048 | 0.976 ± 0.048 |
| poker-8_vs-6                   | 0.942 ± 0.061        | 0.851 ± 0.057        | 0.942 ± 0.061        | 0.942 ± 0.061        | 0.875 ± 0.098        | <b>0.978 ± 0.018</b> | 0.932 ± 0.078        | 0.942 ± 0.061        | 0.906 ± 0.122        | 0.931 ± 0.113 | 0.864 ± 0.167 |
| poker-9_vs-7                   | 0.839 ± 0.152        | <b>0.839 ± 0.152</b> | 0.839 ± 0.152        | 0.816 ± 0.135        | 0.795 ± 0.125        | 0.828 ± 0.145        | 0.793 ± 0.152        | 0.839 ± 0.152        | 0.789 ± 0.233        | 0.806 ± 0.192 | 0.721 ± 0.197 |
| winequality-red-3_vs-2         | 0.584 ± 0.061        | 0.577 ± 0.053        | 0.584 ± 0.061        | 0.583 ± 0.061        | 0.578 ± 0.053        | <b>0.592 ± 0.064</b> | 0.575 ± 0.052        | 0.584 ± 0.061        | 0.543 ± 0.069        | 0.493 ± 0.033 | 0.560 ± 0.058 |
| winequality-red-4              | 0.597 ± 0.027        | 0.583 ± 0.043        | 0.596 ± 0.029        | 0.596 ± 0.021        | 0.588 ± 0.036        | 0.557 ± 0.024        | <b>0.602 ± 0.024</b> | 0.597 ± 0.026        | 0.540 ± 0.025        | 0.521 ± 0.038 | 0.558 ± 0.047 |
| winequality-red-8_vs-6-7       | 0.530 ± 0.064        | <b>0.543 ± 0.068</b> | 0.536 ± 0.063        | 0.537 ± 0.063        | 0.536 ± 0.055        | 0.530 ± 0.060        | 0.534 ± 0.055        | 0.531 ± 0.064        | 0.542 ± 0.058        | 0.534 ± 0.070 | 0.536 ± 0.045 |
| winequality-red-8_vs-6         | <b>0.635 ± 0.050</b> | 0.630 ± 0.052        | 0.624 ± 0.055        | 0.635 ± 0.051        | 0.595 ± 0.050        | 0.600 ± 0.052        | 0.632 ± 0.043        | 0.635 ± 0.050        | 0.593 ± 0.064        | 0.584 ± 0.077 | 0.616 ± 0.088 |
| winequality-white-3-9_vs-2     | <b>0.618 ± 0.030</b> | 0.613 ± 0.033        | 0.617 ± 0.035        | 0.617 ± 0.034        | 0.573 ± 0.029        | 0.602 ± 0.053        | 0.599 ± 0.034        | <b>0.618 ± 0.030</b> | 0.547 ± 0.046        | 0.518 ± 0.029 | 0.575 ± 0.054 |
| winequality-white-3_vs-7       | 0.630 ± 0.086        | 0.573 ± 0.064        | 0.633 ± 0.092        | 0.619 ± 0.094        | 0.577 ± 0.058        | <b>0.644 ± 0.064</b> | 0.630 ± 0.099        | 0.630 ± 0.086        | 0.585 ± 0.074        | 0.509 ± 0.089 | 0.570 ± 0.054 |
| winequality-white-9_vs-4       | 0.878 ± 0.091        | <b>0.882 ± 0.095</b> | 0.878 ± 0.091        | 0.766 ± 0.164        | 0.879 ± 0.092        | 0.774 ± 0.172        | 0.878 ± 0.091        | 0.878 ± 0.091        | 0.726 ± 0.177        | 0.726 ± 0.177 | 0.726 ± 0.177 |
| zoo-0                          | <b>0.827 ± 0.157</b> | <b>0.827 ± 0.157</b> | <b>0.827 ± 0.157</b> | 0.717 ± 0.191        | <b>0.827 ± 0.157</b> | 0.692 ± 0.167        | <b>0.827 ± 0.157</b> | <b>0.827 ± 0.157</b> | 0.630 ± 0.130        | 0.630 ± 0.130 | 0.630 ± 0.130 |
| ecoli1                         | 0.864 ± 0.026        | 0.863 ± 0.019        | 0.868 ± 0.030        | <b>0.871 ± 0.024</b> | 0.870 ± 0.026        | 0.864 ± 0.028        | 0.863 ± 0.033        | 0.867 ± 0.023        | 0.802 ± 0.055        | 0.563 ± 0.127 | 0.840 ± 0.047 |
| ecoli2                         | 0.915 ± 0.028        | <b>0.922 ± 0.025</b> | 0.913 ± 0.027        | 0.914 ± 0.027        | 0.919 ± 0.029        | 0.911 ± 0.021        | 0.914 ± 0.027        | 0.915 ± 0.028        | 0.837 ± 0.086        | 0.584 ± 0.138 | 0.863 ± 0.061 |
| ecoli3                         | 0.866 ± 0.019        | 0.857 ± 0.022        | <b>0.868 ± 0.015</b> | 0.859 ± 0.025        | 0.854 ± 0.035        | 0.851 ± 0.028        | 0.861 ± 0.018        | 0.865 ± 0.015        | 0.800 ± 0.053        | 0.575 ± 0.119 | 0.749 ± 0.100 |
| glass0                         | 0.791 ± 0.035        | 0.799 ± 0.036        | 0.786 ± 0.034        | 0.794 ± 0.028        | 0.797 ± 0.027        | 0.787 ± 0.041        | 0.800 ± 0.030        | <b>0.800 ± 0.034</b> | 0.778 ± 0.047        | 0.700 ± 0.116 | 0.778 ± 0.050 |
| glass1                         | 0.738 ± 0.047        | <b>0.749 ± 0.053</b> | 0.745 ± 0.044        | 0.748 ± 0.037        | 0.739 ± 0.042        | 0.740 ± 0.031        | 0.736 ± 0.030        | 0.738 ± 0.051        | 0.698 ± 0.068        | 0.531 ± 0.081 | 0.685 ± 0.054 |
| haberman                       | 0.601 ± 0.034        | <b>0.616 ± 0.036</b> | 0.587 ± 0.044        | 0.588 ± 0.016        | 0.588 ± 0.039        | 0.587 ± 0.039        | 0.584 ± 0.029        | 0.599 ± 0.030        | 0.600 ± 0.024        | 0.535 ± 0.074 | 0.599 ± 0.054 |
| page-blocks0                   | 0.929 ± 0.010        | 0.911 ± 0.012        | 0.928 ± 0.012        | 0.921 ± 0.012        | 0.924 ± 0.011        | 0.887 ± 0.016        | <b>0.931 ± 0.009</b> | 0.930 ± 0.010        | 0.895 ± 0.018        | 0.905 ± 0.012 | 0.899 ± 0.015 |
| ptm                            | 0.655 ± 0.021        | <b>0.708 ± 0.018</b> | 0.686 ± 0.013        | 0.687 ± 0.016        | 0.682 ± 0.017        | 0.690 ± 0.021        | 0.693 ± 0.024        | 0.693 ± 0.024        | 0.686 ± 0.020        | 0.616 ± 0.053 | 0.692 ± 0.021 |
| vehicle1                       | 0.723 ± 0.026        | <b>0.740 ± 0.017</b> | 0.720 ± 0.024        | 0.736 ± 0.025        | 0.725 ± 0.019        | 0.720 ± 0.022        | 0.731 ± 0.022        | 0.724 ± 0.027        | 0.667 ± 0.022        | 0.716 ± 0.030 | 0.699 ± 0.027 |
| vehicle3                       | 0.708 ± 0.018        | 0.700 ± 0.029        | 0.712 ± 0.019        | <b>0.718 ± 0.025</b> | 0.710 ± 0.017        | 0.692 ± 0.023        | 0.712 ± 0.020        | 0.706 ± 0.020        | 0.656 ± 0.019        | 0.696 ± 0.023 | 0.7           |

Table 4. CART – G-mean

| Dataset name                  | SMOTE                | polynom-fit-SMOTE    | Lee                  | SMOBD                | G-SMOTE              | LVQ-SMOTE            | Assembled-SMOTE      | SMOTE-TonekLinks     | JFOTS_pr             | JFOTS_rc             | JFOTS_prom           |
|-------------------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| abalone19                     | 0.365 ± 0.148        | 0.075 ± 0.114        | 0.312 ± 0.168        | <b>0.387 ± 0.110</b> | 0.282 ± 0.174        | 0.332 ± 0.116        | 0.358 ± 0.122        | 0.365 ± 0.148        | 0.084 ± 0.132        | 0.354 ± 0.206        | 0.365 ± 0.176        |
| abalone18                     | 0.605 ± 0.100        | 0.508 ± 0.072        | 0.619 ± 0.082        | 0.630 ± 0.075        | 0.584 ± 0.056        | <b>0.640 ± 0.133</b> | 0.588 ± 0.059        | 0.610 ± 0.105        | 0.583 ± 0.073        | 0.442 ± 0.144        | 0.511 ± 0.106        |
| ecoli-0-1-3-7-vs-2-6          | 0.723 ± 0.254        | <b>0.793 ± 0.086</b> | 0.723 ± 0.254        | 0.723 ± 0.254        | <b>0.793 ± 0.086</b> | 0.736 ± 0.145        | 0.723 ± 0.254        | 0.723 ± 0.254        | 0.594 ± 0.232        | 0.407 ± 0.274        | 0.619 ± 0.241        |
| glass0-1-6-vs-2               | 0.565 ± 0.089        | <b>0.614 ± 0.088</b> | 0.573 ± 0.101        | 0.522 ± 0.101        | 0.529 ± 0.151        | 0.552 ± 0.155        | 0.564 ± 0.085        | 0.567 ± 0.180        | 0.466 ± 0.089        | 0.516 ± 0.105        | 0.564 ± 0.105        |
| glass0-1-6-vs-2               | 0.829 ± 0.185        | 0.828 ± 0.185        | 0.829 ± 0.185        | 0.829 ± 0.185        | 0.706 ± 0.315        | <b>0.872 ± 0.170</b> | 0.829 ± 0.185        | 0.704 ± 0.209        | 0.854 ± 0.204        | 0.701 ± 0.213        | 0.701 ± 0.213        |
| glass2                        | 0.431 ± 0.261        | 0.399 ± 0.218        | 0.402 ± 0.248        | 0.495 ± 0.204        | 0.430 ± 0.259        | 0.472 ± 0.209        | 0.405 ± 0.235        | 0.453 ± 0.267        | 0.422 ± 0.228        | 0.451 ± 0.106        | <b>0.526 ± 0.148</b> |
| glass3                        | 0.841 ± 0.102        | 0.823 ± 0.064        | 0.841 ± 0.103        | 0.831 ± 0.101        | <b>0.847 ± 0.097</b> | 0.789 ± 0.113        | 0.840 ± 0.104        | 0.841 ± 0.102        | 0.761 ± 0.154        | 0.740 ± 0.159        | 0.732 ± 0.148        |
| glass5                        | 0.813 ± 0.206        | 0.812 ± 0.205        | 0.813 ± 0.206        | 0.813 ± 0.206        | 0.826 ± 0.212        | <b>0.924 ± 0.129</b> | 0.813 ± 0.206        | 0.813 ± 0.206        | 0.796 ± 0.201        | 0.874 ± 0.165        | 0.742 ± 0.204        |
| page-blocks1-3-vs-4           | 0.967 ± 0.065        | 0.945 ± 0.069        | 0.962 ± 0.077        | 0.961 ± 0.076        | 0.969 ± 0.072        | 0.960 ± 0.056        | <b>0.993 ± 0.054</b> | 0.967 ± 0.065        | 0.895 ± 0.070        | 0.874 ± 0.113        | 0.917 ± 0.100        |
| yeast-0-5-6-7-9-vs-4          | 0.658 ± 0.088        | 0.631 ± 0.068        | 0.683 ± 0.066        | 0.654 ± 0.085        | 0.631 ± 0.063        | <b>0.694 ± 0.070</b> | 0.649 ± 0.054        | 0.671 ± 0.056        | 0.603 ± 0.074        | 0.091 ± 0.057        | 0.627 ± 0.088        |
| yeast-1-2-8-9-vs-7            | 0.475 ± 0.059        | 0.424 ± 0.108        | 0.485 ± 0.061        | 0.453 ± 0.100        | 0.477 ± 0.105        | <b>0.598 ± 0.094</b> | 0.475 ± 0.048        | 0.503 ± 0.081        | 0.394 ± 0.111        | 0.143 ± 0.028        | 0.383 ± 0.160        |
| yeast-1-4-5-8-vs-7            | 0.357 ± 0.150        | 0.397 ± 0.066        | 0.350 ± 0.169        | 0.336 ± 0.140        | 0.326 ± 0.185        | 0.388 ± 0.102        | <b>0.420 ± 0.060</b> | 0.344 ± 0.142        | 0.196 ± 0.172        | 0.099 ± 0.027        | 0.365 ± 0.195        |
| yeast-1-vs-7                  | 0.531 ± 0.092        | 0.536 ± 0.090        | 0.515 ± 0.103        | 0.568 ± 0.087        | 0.500 ± 0.094        | <b>0.631 ± 0.056</b> | 0.544 ± 0.077        | 0.526 ± 0.084        | 0.439 ± 0.103        | 0.099 ± 0.170        | 0.478 ± 0.187        |
| yeast-2-vs-4                  | 0.837 ± 0.053        | 0.828 ± 0.065        | 0.858 ± 0.049        | 0.851 ± 0.079        | 0.845 ± 0.060        | 0.857 ± 0.046        | <b>0.859 ± 0.048</b> | 0.831 ± 0.042        | 0.800 ± 0.060        | 0.256 ± 0.341        | 0.792 ± 0.043        |
| yeast-2-vs-8                  | 0.689 ± 0.129        | 0.726 ± 0.063        | 0.737 ± 0.149        | <b>0.750 ± 0.113</b> | 0.723 ± 0.092        | 0.727 ± 0.063        | 0.712 ± 0.090        | 0.704 ± 0.128        | 0.715 ± 0.068        | 0.187 ± 0.191        | 0.702 ± 0.069        |
| yeast4                        | 0.612 ± 0.076        | 0.541 ± 0.057        | 0.631 ± 0.094        | 0.634 ± 0.076        | 0.538 ± 0.073        | <b>0.684 ± 0.077</b> | 0.597 ± 0.139        | 0.614 ± 0.079        | 0.605 ± 0.088        | 0.113 ± 0.022        | 0.472 ± 0.110        |
| yeast5                        | 0.848 ± 0.089        | 0.829 ± 0.086        | 0.830 ± 0.077        | 0.845 ± 0.081        | 0.841 ± 0.076        | <b>0.873 ± 0.055</b> | 0.858 ± 0.066        | 0.850 ± 0.091        | 0.828 ± 0.058        | 0.142 ± 0.009        | 0.717 ± 0.209        |
| yeast6                        | 0.683 ± 0.098        | 0.630 ± 0.070        | 0.675 ± 0.103        | 0.707 ± 0.090        | 0.702 ± 0.068        | <b>0.748 ± 0.063</b> | 0.701 ± 0.087        | 0.684 ± 0.095        | 0.603 ± 0.088        | 0.188 ± 0.138        | 0.615 ± 0.085        |
| cleaveland-0-vs-4             | <b>0.800 ± 0.067</b> | 0.648 ± 0.257        | 0.753 ± 0.151        | 0.753 ± 0.111        | 0.676 ± 0.253        | 0.717 ± 0.090        | 0.782 ± 0.079        | <b>0.800 ± 0.067</b> | 0.725 ± 0.108        | 0.701 ± 0.137        | 0.634 ± 0.098        |
| ecoli-0-1-4-7-vs-2-3-5-6      | 0.772 ± 0.097        | 0.776 ± 0.059        | 0.810 ± 0.047        | 0.771 ± 0.088        | 0.751 ± 0.082        | <b>0.818 ± 0.053</b> | 0.815 ± 0.063        | 0.787 ± 0.100        | 0.652 ± 0.161        | 0.244 ± 0.269        | 0.708 ± 0.117        |
| ecoli-0-1-vs-2-3-5            | 0.779 ± 0.077        | 0.773 ± 0.149        | 0.759 ± 0.078        | 0.719 ± 0.058        | 0.768 ± 0.055        | <b>0.831 ± 0.076</b> | 0.750 ± 0.064        | 0.781 ± 0.077        | 0.709 ± 0.154        | 0.430 ± 0.360        | 0.728 ± 0.106        |
| ecoli-0-2-6-7-vs-3-5          | 0.782 ± 0.058        | 0.761 ± 0.080        | 0.795 ± 0.067        | 0.807 ± 0.090        | 0.817 ± 0.064        | <b>0.820 ± 0.070</b> | 0.758 ± 0.079        | 0.785 ± 0.060        | 0.744 ± 0.074        | 0.292 ± 0.293        | 0.786 ± 0.075        |
| ecoli-0-6-7-vs-3-5            | 0.777 ± 0.084        | 0.772 ± 0.059        | 0.795 ± 0.067        | 0.800 ± 0.075        | 0.819 ± 0.081        | <b>0.826 ± 0.068</b> | 0.774 ± 0.068        | 0.779 ± 0.084        | 0.743 ± 0.081        | 0.366 ± 0.320        | 0.729 ± 0.154        |
| ecoli-0-6-7-vs-2              | 0.828 ± 0.077        | 0.825 ± 0.087        | 0.816 ± 0.076        | 0.827 ± 0.080        | 0.823 ± 0.074        | <b>0.835 ± 0.050</b> | 0.812 ± 0.067        | 0.827 ± 0.079        | 0.833 ± 0.106        | 0.363 ± 0.250        | 0.813 ± 0.124        |
| glass-0-1-4-6-vs-2            | 0.487 ± 0.109        | 0.389 ± 0.220        | 0.512 ± 0.136        | 0.481 ± 0.121        | 0.520 ± 0.131        | <b>0.597 ± 0.106</b> | 0.424 ± 0.113        | 0.428 ± 0.176        | 0.362 ± 0.211        | 0.432 ± 0.067        | 0.453 ± 0.121        |
| glass-0-1-5-vs-2              | 0.649 ± 0.092        | 0.508 ± 0.112        | 0.628 ± 0.114        | <b>0.670 ± 0.142</b> | 0.560 ± 0.113        | 0.534 ± 0.196        | 0.593 ± 0.112        | 0.635 ± 0.083        | 0.486 ± 0.172        | 0.366 ± 0.165        | 0.468 ± 0.142        |
| yeast-0-2-5-6-vs-3-7-8-9      | 0.684 ± 0.050        | 0.673 ± 0.070        | <b>0.712 ± 0.047</b> | 0.685 ± 0.037        | 0.686 ± 0.045        | 0.703 ± 0.062        | 0.680 ± 0.048        | 0.668 ± 0.049        | 0.564 ± 0.122        | 0.493 ± 0.054        | 0.566 ± 0.054        |
| yeast-0-5-5-9-vs-7-8          | 0.531 ± 0.071        | 0.568 ± 0.068        | 0.567 ± 0.060        | 0.570 ± 0.070        | 0.551 ± 0.068        | <b>0.587 ± 0.066</b> | 0.561 ± 0.045        | 0.584 ± 0.050        | 0.396 ± 0.169        | 0.153 ± 0.120        | 0.470 ± 0.107        |
| abalone-17-vs-7-8-10          | 0.559 ± 0.073        | 0.546 ± 0.062        | 0.557 ± 0.075        | 0.586 ± 0.075        | 0.552 ± 0.077        | <b>0.605 ± 0.036</b> | 0.562 ± 0.067        | 0.557 ± 0.066        | 0.519 ± 0.116        | 0.417 ± 0.064        | 0.507 ± 0.070        |
| abalone-19-vs-10-11-12-13     | 0.382 ± 0.149        | 0.203 ± 0.139        | 0.379 ± 0.154        | 0.382 ± 0.097        | 0.390 ± 0.185        | <b>0.468 ± 0.114</b> | 0.393 ± 0.092        | 0.411 ± 0.076        | 0.200 ± 0.180        | 0.316 ± 0.183        | 0.312 ± 0.223        |
| abalone-20-vs-8-9-10          | 0.634 ± 0.081        | 0.371 ± 0.210        | 0.593 ± 0.123        | 0.611 ± 0.088        | 0.504 ± 0.132        | <b>0.771 ± 0.078</b> | 0.609 ± 0.098        | 0.634 ± 0.081        | 0.476 ± 0.171        | 0.484 ± 0.102        | 0.485 ± 0.116        |
| abalone-21-vs-8               | 0.633 ± 0.253        | 0.534 ± 0.125        | 0.604 ± 0.221        | 0.585 ± 0.241        | 0.690 ± 0.098        | <b>0.768 ± 0.087</b> | 0.586 ± 0.234        | 0.642 ± 0.259        | 0.626 ± 0.200        | 0.473 ± 0.204        | 0.517 ± 0.203        |
| flame-F                       | 0.367 ± 0.098        | 0.422 ± 0.066        | 0.394 ± 0.110        | 0.419 ± 0.093        | 0.447 ± 0.050        | 0.425 ± 0.082        | 0.411 ± 0.105        | 0.421 ± 0.080        | 0.564 ± 0.122        | 0.413 ± 0.119        | <b>0.589 ± 0.146</b> |
| kddcup-bufferoverflow-vs-back | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> |
| kddcup-rootkit-innp-vs-back   | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> |
| kr-vs-karozo-vs-ahgnt         | 0.959 ± 0.053        | 0.963 ± 0.055        | 0.963 ± 0.055        | 0.963 ± 0.055        | <b>0.967 ± 0.044</b> | 0.962 ± 0.081        | 0.951 ± 0.063        | 0.959 ± 0.053        | 0.731 ± 0.119        | 0.697 ± 0.043        | 0.849 ± 0.123        |
| poker-8-vs-9                  | 0.386 ± 0.143        | 0.300 ± 0.205        | 0.386 ± 0.080        | 0.404 ± 0.078        | 0.266 ± 0.195        | <b>0.430 ± 0.145</b> | 0.323 ± 0.073        | 0.386 ± 0.143        | 0.165 ± 0.210        | 0.330 ± 0.202        | 0.249 ± 0.173        |
| poker-8-vs-9                  | 0.595 ± 0.142        | 0.787 ± 0.178        | 0.573 ± 0.155        | 0.529 ± 0.151        | 0.687 ± 0.188        | 0.465 ± 0.260        | 0.524 ± 0.228        | 0.595 ± 0.142        | 0.999 ± 0.001        | 0.999 ± 0.001        | <b>0.999 ± 0.001</b> |
| poker-8-vs-9                  | 0.569 ± 0.225        | 0.537 ± 0.295        | 0.615 ± 0.179        | 0.590 ± 0.164        | 0.581 ± 0.222        | 0.524 ± 0.289        | 0.559 ± 0.221        | 0.569 ± 0.225        | <b>0.924 ± 0.004</b> | 0.924 ± 0.003        | 0.786 ± 0.227        |
| poker-9-vs-7                  | 0.267 ± 0.274        | 0.267 ± 0.274        | 0.267 ± 0.274        | 0.337 ± 0.285        | 0.373 ± 0.324        | 0.267 ± 0.273        | 0.267 ± 0.273        | <b>0.467 ± 0.418</b> | 0.449 ± 0.338        | 0.386 ± 0.347        | 0.347 ± 0.347        |
| winequality-red-3-vs-2        | 0.132 ± 0.201        | 0.151 ± 0.235        | 0.088 ± 0.176        | 0.132 ± 0.202        | 0.120 ± 0.250        | <b>0.325 ± 0.219</b> | 0.150 ± 0.234        | 0.132 ± 0.201        | 0.133 ± 0.203        | 0.218 ± 0.218        | 0.282 ± 0.236        |
| winequality-red-4             | 0.391 ± 0.120        | 0.325 ± 0.083        | <b>0.458 ± 0.069</b> | 0.446 ± 0.078        | 0.409 ± 0.090        | 0.446 ± 0.075        | 0.401 ± 0.044        | 0.390 ± 0.123        | 0.316 ± 0.091        | 0.393 ± 0.111        | 0.365 ± 0.096        |
| winequality-red-8-vs-6-7      | 0.314 ± 0.168        | 0.339 ± 0.185        | 0.327 ± 0.174        | 0.352 ± 0.188        | 0.319 ± 0.216        | <b>0.395 ± 0.095</b> | 0.312 ± 0.174        | 0.314 ± 0.174        | 0.283 ± 0.193        | 0.201 ± 0.213        | 0.286 ± 0.156        |
| winequality-red-8-vs-6        | 0.498 ± 0.107        | 0.479 ± 0.123        | 0.491 ± 0.099        | 0.463 ± 0.187        | 0.409 ± 0.156        | 0.514 ± 0.115        | <b>0.538 ± 0.107</b> | 0.498 ± 0.107        | 0.427 ± 0.092        | 0.327 ± 0.229        | 0.360 ± 0.202        |
| winequality-white-3-9-vs-2    | 0.361 ± 0.207        | 0.293 ± 0.173        | 0.285 ± 0.201        | 0.319 ± 0.189        | 0.225 ± 0.208        | <b>0.507 ± 0.102</b> | 0.312 ± 0.129        | 0.361 ± 0.207        | 0.290 ± 0.158        | 0.168 ± 0.137        | 0.235 ± 0.122        |
| winequality-white-3-vs-7      | 0.296 ± 0.165        | 0.317 ± 0.190        | 0.372 ± 0.208        | 0.383 ± 0.159        | 0.424 ± 0.153        | <b>0.690 ± 0.122</b> | 0.221 ± 0.193        | 0.296 ± 0.165        | 0.319 ± 0.121        | 0.347 ± 0.249        | 0.351 ± 0.206        |
| winequality-white-9-vs-4      | 0.588 ± 0.329        | 0.530 ± 0.275        | 0.587 ± 0.328        | 0.588 ± 0.327        | <b>0.588 ± 0.329</b> | 0.558 ± 0.302        | 0.587 ± 0.328        | 0.588 ± 0.329        | 0.263 ± 0.325        | 0.263 ± 0.325        | 0.263 ± 0.325        |
| zoo-3                         | 0.451 ± 0.391        | 0.394 ± 0.329        | 0.496 ± 0.344        | 0.480 ± 0.336        | 0.424 ± 0.362        | <b>0.656 ± 0.267</b> | 0.467 ± 0.313        | 0.451 ± 0.391        | 0.321 ± 0.266        | 0.321 ± 0.266        | 0.321 ± 0.266        |
| ecoli1                        | 0.835 ± 0.063        | 0.811 ± 0.044        | 0.821 ± 0.056        | 0.830 ± 0.045        | 0.832 ± 0.045        | 0.839 ± 0.057        | 0.814 ± 0.054        | <b>0.857 ± 0.044</b> | 0.737 ± 0.077        | 0.204 ± 0.285        | 0.789 ± 0.057        |
| ecoli2                        | 0.850 ± 0.032        | 0.811 ± 0.040        | 0.844 ± 0.036        | 0.841 ± 0.042        | 0.849 ± 0.032        | <b>0.863 ± 0.038</b> | 0.846 ± 0.046        | 0.850 ± 0.032        | 0.756 ± 0.103        | 0.275 ± 0.300        | 0.807 ± 0.070        |
| ecoli3                        | 0.719 ± 0.063        | 0.719 ± 0.083        | 0.748 ± 0.084        | 0.754 ± 0.061        | 0.746 ± 0.065        | <b>0.828 ± 0.054</b> | 0.758 ± 0.063        | 0.732 ± 0.067        | 0.732 ± 0.062        | 0.262 ± 0.268        | 0.704 ± 0.194        |
| glass0                        | 0.763 ± 0.035        | 0.766 ± 0.065        | 0.765 ± 0.043        | 0.784 ± 0.035        | 0.777 ± 0.042        | <b>0.800 ± 0.041</b> | 0.791 ± 0.040        | 0.772 ± 0.025        | 0.740 ± 0.058        | 0.651 ± 0.093        | 0.726 ± 0.074        |
| glass1                        | 0.716 ± 0.029        | <b>0.727 ± 0.034</b> | 0.723 ± 0.058        | 0.723 ± 0.060        | 0.708 ± 0.049        | 0.714 ± 0.047        | 0.723 ± 0.062        | 0.712 ± 0.036        | 0.657 ± 0.110        | 0.488 ± 0.104        | 0.652 ± 0.050        |
| haberman                      | 0.564 ± 0.045        | 0.542 ± 0.034        | 0.546 ± 0.061        | 0.531 ± 0.060        | 0.542 ± 0.069        | 0.539 ± 0.043        | 0.533 ± 0.074        | <b>0.573 ± 0.056</b> | 0.531 ± 0.047        | 0.465 ± 0.089        | 0.512 ± 0.071        |
| page-blocks0                  | 0.915 ± 0.012        | 0.895 ± 0.011        | 0.913 ± 0.011        | 0.912 ± 0.008        | 0.905 ± 0.010        | 0.896 ± 0.010        | <b>0.918 ± 0.012</b> | 0.916 ± 0.008        | 0.904 ± 0.014        | 0.891 ± 0.016        | 0.886 ± 0.021        |
| ptms                          | 0.659 ± 0.021        | 0.666 ± 0.026        | 0.653 ± 0.022        | 0.658 ± 0.016        | 0.657 ± 0.025        | <b>0.674 ± 0.027</b> | 0.651 ± 0.023        | 0.664 ± 0.026        | 0.651 ± 0.031        | 0.581 ± 0.055        | 0.658 ± 0.028        |
| vehicle1                      | 0.649 ± 0.031        | 0.651 ± 0.027        | 0.653 ± 0.042        | 0.654 ± 0.031        | 0.647 ± 0.035        | <b>0.675 ± 0.025</b> | 0.660 ± 0.029        | 0.661 ± 0.021        | 0.645 ± 0.023        | 0.645 ± 0.025        | 0.649 ± 0.042        |
| vehicle2                      | 0.652 ± 0.027        | <b>0.677 ± 0.026</b> | 0.636 ± 0.027        | 0.665 ± 0.033        | 0.656 ± 0.022        | 0.675 ± 0.015        | 0.659 ± 0.027        | 0.653 ± 0.015        | 0.6                  |                      |                      |

Table 5. SVM – G-mean

| Dataset name                   | SMOTE                | polynom-ft-SMOTE     | Lee                  | SMOBD                | G-SMOTE              | LVQ-SMOTE            | Assembled-SMOTE      | SMOTE-TonekLinks     | JFOTS_pr             | JFOTS_rc             | JFOTS_prom           |
|--------------------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| abalone19                      | 0.500 ± 0.124        | 0.397 ± 0.159        | 0.501 ± 0.119        | 0.509 ± 0.129        | 0.511 ± 0.111        | <b>0.618 ± 0.081</b> | 0.500 ± 0.124        | 0.500 ± 0.124        | 0.569 ± 0.152        | 0.548 ± 0.125        | 0.591 ± 0.039        |
| abalone18                      | 0.721 ± 0.064        | 0.640 ± 0.055        | 0.731 ± 0.043        | 0.736 ± 0.051        | 0.719 ± 0.066        | <b>0.769 ± 0.051</b> | 0.723 ± 0.046        | 0.721 ± 0.064        | 0.602 ± 0.109        | 0.638 ± 0.113        | 0.604 ± 0.128        |
| ecoli-0-1-3-7-vs-2-6           | 0.826 ± 0.097        | 0.828 ± 0.099        | 0.821 ± 0.095        | 0.824 ± 0.097        | 0.827 ± 0.100        | 0.813 ± 0.098        | 0.826 ± 0.097        | 0.826 ± 0.097        | 0.821 ± 0.140        | 0.818 ± 0.140        | <b>0.845 ± 0.113</b> |
| glass-0-1-6-vs-2               | 0.722 ± 0.120        | 0.660 ± 0.109        | 0.732 ± 0.102        | 0.730 ± 0.089        | 0.652 ± 0.111        | 0.551 ± 0.150        | <b>0.732 ± 0.084</b> | 0.721 ± 0.121        | 0.712 ± 0.100        | 0.609 ± 0.144        | 0.673 ± 0.079        |
| glass-0-1-6-vs-2               | 0.791 ± 0.132        | 0.747 ± 0.164        | 0.791 ± 0.132        | 0.791 ± 0.132        | 0.747 ± 0.164        | 0.812 ± 0.130        | 0.791 ± 0.132        | 0.791 ± 0.132        | 0.713 ± 0.256        | <b>0.841 ± 0.201</b> | 0.770 ± 0.191        |
| glass2                         | 0.546 ± 0.287        | 0.528 ± 0.283        | 0.554 ± 0.287        | 0.538 ± 0.284        | 0.555 ± 0.287        | <b>0.593 ± 0.302</b> | 0.552 ± 0.291        | 0.546 ± 0.286        | 0.550 ± 0.235        | 0.552 ± 0.163        | 0.588 ± 0.219        |
| glass3                         | 0.827 ± 0.153        | 0.866 ± 0.136        | 0.854 ± 0.158        | 0.859 ± 0.131        | 0.854 ± 0.136        | 0.862 ± 0.100        | <b>0.880 ± 0.113</b> | 0.799 ± 0.090        | 0.772 ± 0.158        | 0.783 ± 0.112        |                      |
| glass5                         | 0.786 ± 0.143        | 0.774 ± 0.139        | 0.800 ± 0.134        | 0.800 ± 0.134        | 0.785 ± 0.143        | 0.826 ± 0.200        | 0.786 ± 0.143        | 0.786 ± 0.143        | 0.751 ± 0.133        | <b>0.848 ± 0.154</b> | 0.823 ± 0.153        |
| page-blocks-1-3-vs-4           | 0.891 ± 0.135        | 0.759 ± 0.097        | <b>0.896 ± 0.113</b> | 0.895 ± 0.133        | 0.889 ± 0.144        | 0.777 ± 0.061        | 0.872 ± 0.141        | 0.891 ± 0.135        | 0.799 ± 0.091        | 0.853 ± 0.081        | 0.804 ± 0.168        |
| yeast-0-5-6-7-9-vs-4           | 0.732 ± 0.057        | 0.716 ± 0.046        | 0.749 ± 0.047        | 0.734 ± 0.060        | 0.730 ± 0.065        | <b>0.753 ± 0.037</b> | 0.733 ± 0.048        | 0.729 ± 0.058        | 0.679 ± 0.098        | 0.691 ± 0.057        | 0.678 ± 0.087        |
| yeast-1-2-8-vs-7               | 0.557 ± 0.067        | 0.510 ± 0.119        | 0.563 ± 0.075        | 0.553 ± 0.075        | 0.567 ± 0.071        | <b>0.624 ± 0.106</b> | 0.553 ± 0.090        | 0.564 ± 0.056        | 0.452 ± 0.120        | 0.143 ± 0.028        | 0.510 ± 0.082        |
| yeast-1-4-5-8-vs-7             | 0.510 ± 0.079        | 0.480 ± 0.091        | 0.495 ± 0.076        | 0.498 ± 0.064        | 0.507 ± 0.087        | <b>0.540 ± 0.073</b> | 0.487 ± 0.065        | 0.510 ± 0.079        | 0.428 ± 0.156        | 0.099 ± 0.027        | 0.533 ± 0.085        |
| yeast-1-vs-7                   | 0.672 ± 0.048        | 0.657 ± 0.060        | 0.675 ± 0.045        | <b>0.675 ± 0.050</b> | 0.627 ± 0.090        | 0.661 ± 0.077        | 0.664 ± 0.048        | 0.671 ± 0.049        | 0.504 ± 0.109        | 0.099 ± 0.168        | 0.529 ± 0.175        |
| yeast-2-vs-4                   | 0.863 ± 0.044        | 0.855 ± 0.046        | 0.868 ± 0.044        | <b>0.869 ± 0.051</b> | 0.864 ± 0.052        | 0.865 ± 0.037        | 0.862 ± 0.053        | 0.863 ± 0.044        | 0.837 ± 0.037        | 0.282 ± 0.380        | 0.846 ± 0.060        |
| yeast-2-vs-8                   | 0.705 ± 0.063        | 0.737 ± 0.069        | 0.718 ± 0.058        | 0.727 ± 0.059        | 0.704 ± 0.062        | <b>0.767 ± 0.086</b> | 0.705 ± 0.101        | 0.705 ± 0.063        | 0.718 ± 0.109        | 0.184 ± 0.184        | 0.650 ± 0.111        |
| yeast4                         | 0.749 ± 0.040        | 0.718 ± 0.045        | 0.754 ± 0.049        | 0.753 ± 0.038        | 0.742 ± 0.042        | <b>0.784 ± 0.039</b> | 0.749 ± 0.030        | 0.749 ± 0.040        | 0.627 ± 0.044        | 0.113 ± 0.022        | 0.709 ± 0.135        |
| yeast5                         | 0.925 ± 0.030        | 0.922 ± 0.031        | 0.926 ± 0.030        | 0.926 ± 0.030        | 0.928 ± 0.029        | <b>0.940 ± 0.025</b> | 0.926 ± 0.030        | 0.925 ± 0.030        | 0.893 ± 0.073        | 0.142 ± 0.009        | 0.818 ± 0.237        |
| yeast6                         | 0.832 ± 0.060        | 0.828 ± 0.057        | 0.838 ± 0.065        | 0.830 ± 0.060        | 0.833 ± 0.060        | <b>0.860 ± 0.035</b> | 0.831 ± 0.063        | 0.832 ± 0.060        | 0.717 ± 0.079        | 0.186 ± 0.134        | 0.802 ± 0.050        |
| cleveland-0-vs-4               | 0.632 ± 0.136        | 0.590 ± 0.134        | 0.662 ± 0.149        | 0.674 ± 0.147        | 0.629 ± 0.131        | <b>0.833 ± 0.062</b> | 0.652 ± 0.136        | 0.652 ± 0.136        | 0.678 ± 0.066        | 0.594 ± 0.159        | 0.590 ± 0.228        |
| ecoli-0-1-4-7-vs-2-3-5-6       | 0.865 ± 0.036        | 0.840 ± 0.023        | 0.860 ± 0.034        | 0.859 ± 0.022        | 0.863 ± 0.038        | <b>0.881 ± 0.035</b> | 0.865 ± 0.041        | 0.865 ± 0.036        | 0.697 ± 0.103        | 0.358 ± 0.360        | 0.825 ± 0.085        |
| ecoli-1-vs-2-3-5               | 0.844 ± 0.048        | 0.855 ± 0.051        | 0.854 ± 0.051        | 0.852 ± 0.050        | 0.846 ± 0.048        | <b>0.881 ± 0.055</b> | 0.849 ± 0.051        | 0.843 ± 0.048        | 0.754 ± 0.157        | 0.503 ± 0.416        | 0.809 ± 0.059        |
| ecoli-0-2-6-7-vs-3-5           | 0.820 ± 0.064        | 0.826 ± 0.072        | 0.825 ± 0.066        | 0.830 ± 0.065        | 0.841 ± 0.073        | <b>0.865 ± 0.058</b> | 0.821 ± 0.070        | 0.820 ± 0.064        | 0.810 ± 0.064        | 0.525 ± 0.348        | 0.843 ± 0.060        |
| ecoli-0-6-7-vs-3-5             | 0.834 ± 0.065        | 0.838 ± 0.067        | 0.830 ± 0.065        | 0.845 ± 0.070        | 0.844 ± 0.072        | <b>0.862 ± 0.068</b> | 0.833 ± 0.071        | 0.834 ± 0.065        | 0.832 ± 0.060        | 0.552 ± 0.332        | 0.843 ± 0.059        |
| ecoli-0-6-7-vs-2               | 0.832 ± 0.049        | 0.854 ± 0.049        | 0.854 ± 0.050        | 0.850 ± 0.049        | 0.850 ± 0.048        | <b>0.883 ± 0.050</b> | 0.850 ± 0.049        | 0.853 ± 0.048        | 0.851 ± 0.051        | 0.470 ± 0.323        | 0.872 ± 0.103        |
| glass-0-1-4-6-vs-2             | 0.678 ± 0.149        | 0.582 ± 0.248        | <b>0.680 ± 0.158</b> | 0.657 ± 0.186        | 0.588 ± 0.240        | 0.570 ± 0.132        | 0.678 ± 0.179        | 0.677 ± 0.149        | 0.568 ± 0.127        | 0.590 ± 0.141        | 0.577 ± 0.173        |
| glass-0-1-5-vs-2               | 0.675 ± 0.079        | 0.609 ± 0.103        | 0.682 ± 0.078        | <b>0.690 ± 0.089</b> | 0.627 ± 0.098        | 0.494 ± 0.090        | 0.660 ± 0.088        | 0.675 ± 0.079        | 0.642 ± 0.088        | 0.469 ± 0.296        | 0.615 ± 0.128        |
| yeast-0-2-5-6-vs-3-7-8-9       | 0.766 ± 0.034        | 0.749 ± 0.057        | 0.764 ± 0.036        | 0.775 ± 0.026        | 0.756 ± 0.043        | <b>0.779 ± 0.036</b> | 0.767 ± 0.035        | 0.768 ± 0.033        | 0.714 ± 0.063        | 0.494 ± 0.145        | 0.749 ± 0.060        |
| yeast-0-5-5-9-vs-7-8           | <b>0.680 ± 0.044</b> | 0.548 ± 0.060        | 0.672 ± 0.045        | 0.671 ± 0.057        | 0.672 ± 0.051        | 0.610 ± 0.087        | 0.670 ± 0.042        | 0.679 ± 0.045        | 0.604 ± 0.093        | 0.160 ± 0.139        | 0.565 ± 0.089        |
| abalone-17-vs-1-8-9-10         | 0.808 ± 0.023        | 0.709 ± 0.053        | 0.802 ± 0.027        | 0.803 ± 0.038        | 0.797 ± 0.032        | <b>0.816 ± 0.028</b> | 0.810 ± 0.027        | 0.806 ± 0.022        | 0.616 ± 0.119        | 0.703 ± 0.104        | 0.734 ± 0.131        |
| abalone-19-vs-10-11-12-13      | 0.582 ± 0.101        | 0.445 ± 0.129        | 0.588 ± 0.098        | 0.589 ± 0.091        | 0.571 ± 0.092        | <b>0.617 ± 0.114</b> | 0.574 ± 0.106        | 0.582 ± 0.101        | 0.556 ± 0.162        | 0.550 ± 0.116        | 0.529 ± 0.136        |
| abalone-20-vs-8-9-10           | 0.798 ± 0.059        | 0.747 ± 0.055        | 0.794 ± 0.050        | 0.784 ± 0.058        | 0.776 ± 0.063        | <b>0.880 ± 0.055</b> | 0.778 ± 0.069        | 0.789 ± 0.059        | 0.687 ± 0.164        | 0.721 ± 0.129        | 0.666 ± 0.163        |
| abalone-21-vs-2                | 0.757 ± 0.171        | 0.741 ± 0.173        | 0.756 ± 0.170        | 0.765 ± 0.172        | 0.756 ± 0.177        | <b>0.824 ± 0.085</b> | 0.757 ± 0.171        | 0.757 ± 0.171        | 0.713 ± 0.211        | 0.690 ± 0.160        | 0.709 ± 0.210        |
| flav-F                         | 0.723 ± 0.050        | 0.630 ± 0.068        | 0.717 ± 0.055        | 0.728 ± 0.060        | 0.707 ± 0.054        | <b>0.766 ± 0.057</b> | 0.722 ± 0.056        | 0.723 ± 0.050        | 0.641 ± 0.114        | 0.413 ± 0.119        | 0.706 ± 0.096        |
| kddcup-buffer-overflow-vs-back | 0.993 ± 0.014        | 0.997 ± 0.010        | 0.993 ± 0.014        | 0.993 ± 0.014        | 0.993 ± 0.014        | <b>1.000 ± 0.000</b> | 0.993 ± 0.014        | 0.993 ± 0.014        | 0.997 ± 0.010        | 0.997 ± 0.010        | 0.997 ± 0.010        |
| kddcup-rootkit-innp-vs-back    | <b>0.977 ± 0.023</b> | <b>0.977 ± 0.023</b> | <b>0.977 ± 0.023</b> | <b>0.977 ± 0.023</b> | <b>0.977 ± 0.023</b> | <b>0.977 ± 0.023</b> | 0.977 ± 0.031        | <b>0.977 ± 0.023</b> | 0.970 ± 0.045        | 0.976 ± 0.045        | 0.976 ± 0.045        |
| kr-vs-karozo-vs-aignt          | 0.934 ± 0.055        | 0.930 ± 0.061        | 0.934 ± 0.055        | 0.934 ± 0.055        | 0.930 ± 0.061        | <b>0.948 ± 0.054</b> | 0.930 ± 0.061        | 0.934 ± 0.055        | 0.835 ± 0.083        | 0.697 ± 0.043        | 0.817 ± 0.120        |
| poker-8-9-vs-6                 | 0.512 ± 0.141        | 0.402 ± 0.185        | 0.499 ± 0.129        | 0.493 ± 0.126        | 0.480 ± 0.152        | <b>0.624 ± 0.119</b> | 0.499 ± 0.103        | 0.512 ± 0.141        | 0.572 ± 0.118        | 0.527 ± 0.103        | 0.479 ± 0.119        |
| poker-8-9-vs-6                 | 0.711 ± 0.092        | 0.666 ± 0.072        | 0.711 ± 0.092        | 0.695 ± 0.080        | 0.674 ± 0.100        | 0.934 ± 0.059        | 0.689 ± 0.154        | 0.711 ± 0.092        | 0.977 ± 0.044        | <b>0.985 ± 0.040</b> | 0.977 ± 0.044        |
| poker-8-vs-6                   | 0.746 ± 0.101        | 0.645 ± 0.091        | 0.746 ± 0.101        | 0.755 ± 0.089        | 0.692 ± 0.118        | <b>0.966 ± 0.056</b> | 0.755 ± 0.089        | 0.746 ± 0.101        | 0.840 ± 0.152        | 0.839 ± 0.153        | 0.808 ± 0.174        |
| poker-9-vs-7                   | 0.432 ± 0.296        | 0.432 ± 0.296        | 0.432 ± 0.296        | 0.398 ± 0.340        | 0.501 ± 0.341        | 0.391 ± 0.267        | 0.432 ± 0.296        | 0.432 ± 0.296        | <b>0.613 ± 0.333</b> | 0.554 ± 0.307        | 0.485 ± 0.340        |
| winequality-red-3-vs-2         | 0.221 ± 0.221        | 0.222 ± 0.222        | 0.221 ± 0.221        | 0.221 ± 0.221        | 0.221 ± 0.221        | <b>0.452 ± 0.171</b> | 0.266 ± 0.217        | 0.221 ± 0.221        | 0.249 ± 0.266        | 0.354 ± 0.244        | 0.296 ± 0.258        |
| winequality-red-4              | 0.385 ± 0.058        | 0.528 ± 0.054        | 0.576 ± 0.057        | <b>0.594 ± 0.057</b> | 0.559 ± 0.055        | 0.533 ± 0.057        | 0.589 ± 0.055        | 0.584 ± 0.058        | 0.425 ± 0.101        | 0.581 ± 0.054        | 0.569 ± 0.072        |
| winequality-red-8-vs-6-7       | 0.410 ± 0.167        | 0.410 ± 0.167        | 0.409 ± 0.167        | 0.323 ± 0.226        | 0.347 ± 0.197        | 0.377 ± 0.154        | 0.377 ± 0.154        | 0.410 ± 0.167        | 0.366 ± 0.211        | <b>0.424 ± 0.183</b> | 0.385 ± 0.169        |
| winequality-red-8-vs-6         | 0.517 ± 0.061        | 0.517 ± 0.061        | 0.517 ± 0.061        | 0.530 ± 0.060        | 0.547 ± 0.114        | 0.537 ± 0.056        | 0.517 ± 0.061        | <b>0.575 ± 0.075</b> | 0.560 ± 0.104        | 0.518 ± 0.091        |                      |
| winequality-white-3-vs-2       | 0.382 ± 0.169        | 0.228 ± 0.197        | 0.368 ± 0.165        | 0.374 ± 0.154        | 0.287 ± 0.161        | <b>0.624 ± 0.061</b> | 0.364 ± 0.157        | 0.382 ± 0.169        | 0.331 ± 0.175        | 0.461 ± 0.114        | 0.444 ± 0.113        |
| winequality-white-3-vs-7       | 0.246 ± 0.209        | 0.194 ± 0.199        | 0.292 ± 0.217        | 0.292 ± 0.216        | 0.297 ± 0.165        | <b>0.713 ± 0.105</b> | 0.278 ± 0.194        | 0.246 ± 0.209        | 0.395 ± 0.175        | 0.485 ± 0.246        | 0.428 ± 0.206        |
| winequality-white-9-vs-4       | 0.777 ± 0.168        | 0.777 ± 0.168        | 0.777 ± 0.168        | 0.441 ± 0.452        | <b>0.777 ± 0.168</b> | 0.437 ± 0.449        | 0.777 ± 0.168        | 0.777 ± 0.168        | 0.553 ± 0.373        | 0.553 ± 0.373        | 0.553 ± 0.373        |
| zoo-3                          | 0.297 ± 0.377        | 0.297 ± 0.377        | 0.297 ± 0.377        | 0.240 ± 0.373        | 0.297 ± 0.377        | 0.238 ± 0.372        | 0.297 ± 0.377        | 0.297 ± 0.377        | <b>0.359 ± 0.313</b> | <b>0.359 ± 0.313</b> | <b>0.359 ± 0.313</b> |
| ecoli1                         | 0.884 ± 0.027        | 0.884 ± 0.020        | 0.885 ± 0.020        | 0.883 ± 0.020        | 0.883 ± 0.024        | <b>0.888 ± 0.015</b> | 0.880 ± 0.022        | 0.884 ± 0.026        | 0.874 ± 0.033        | 0.227 ± 0.328        | 0.884 ± 0.015        |
| ecoli2                         | 0.940 ± 0.025        | 0.931 ± 0.017        | 0.940 ± 0.025        | 0.939 ± 0.027        | 0.938 ± 0.026        | 0.938 ± 0.021        | <b>0.942 ± 0.022</b> | 0.938 ± 0.026        | 0.857 ± 0.086        | 0.309 ± 0.346        | 0.893 ± 0.033        |
| ecoli3                         | 0.888 ± 0.023        | 0.892 ± 0.026        | 0.886 ± 0.023        | <b>0.893 ± 0.018</b> | 0.893 ± 0.022        | 0.893 ± 0.019        | 0.886 ± 0.021        | 0.892 ± 0.022        | 0.854 ± 0.064        | 0.324 ± 0.356        | 0.751 ± 0.209        |
| glass0                         | 0.772 ± 0.041        | <b>0.787 ± 0.020</b> | 0.779 ± 0.040        | 0.768 ± 0.041        | 0.787 ± 0.038        | 0.762 ± 0.037        | 0.786 ± 0.036        | 0.771 ± 0.037        | 0.723 ± 0.039        | 0.674 ± 0.112        | 0.738 ± 0.064        |
| glass1                         | <b>0.694 ± 0.041</b> | 0.677 ± 0.048        | 0.680 ± 0.047        | 0.686 ± 0.036        | 0.691 ± 0.048        | 0.662 ± 0.044        | 0.687 ± 0.043        | 0.694 ± 0.047        | 0.673 ± 0.074        | 0.474 ± 0.093        | 0.655 ± 0.045        |
| haberman                       | 0.584 ± 0.042        | <b>0.606 ± 0.052</b> | 0.596 ± 0.038        | 0.575 ± 0.055        | 0.589 ± 0.060        | 0.597 ± 0.046        | 0.596 ± 0.043        | 0.583 ± 0.046        | 0.573 ± 0.062        | 0.536 ± 0.105        | 0.605 ± 0.059        |
| page-blocks0                   | 0.931 ± 0.008        | 0.897 ± 0.009        | 0.931 ± 0.007        | 0.922 ± 0.010        | 0.931 ± 0.008        | 0.838 ± 0.019        | 0.930 ± 0.009        | <b>0.931 ± 0.008</b> | 0.875 ± 0.037        | 0.888 ± 0.026        | 0.878 ± 0.031        |
| ptms                           | 0.726 ± 0.030        | 0.715 ± 0.030        | 0.728 ± 0.024        | 0.725 ± 0.022        | 0.730 ± 0.025        | 0.728 ± 0.017        | <b>0.731 ± 0.028</b> | 0.727 ± 0.032        | 0.692 ± 0.048        | 0.639 ± 0.039        | 0.720 ± 0.023        |
| vehicle1                       | 0.786 ± 0.026        | 0.741 ± 0.027        | 0.787 ± 0.026        | 0.787 ± 0.019        | 0.796 ± 0.015        | 0.789 ± 0.024        | 0.789 ± 0.018        | 0.789 ± 0.024        | 0.662 ± 0.070        | <b>0.798 ± 0.017</b> | 0.774 ± 0.042        |
| vehicle5                       | 0.786 ± 0.020        | 0.728 ± 0.020        | 0.786 ± 0.016        | <b>0.793 ± 0.024</b> | 0.788 ± 0.016        | 0.786 ± 0.021        | 0.786 ± 0.017        | 0.787 ± 0.019        | 0.591 ± 0.047        | 0.782 ± 0.029        | 0.755 ± 0.050        |
| yeast1                         | 0.710 ± 0.012        | 0                    |                      |                      |                      |                      |                      |                      |                      |                      |                      |

Table 6. KNN – Precision

| Dataset name                  | SMOTE                | polynom-fit-SMOTE    | Lee                  | SMOBD                | G-SMOTE              | LVQ-SMOTE            | Assembled-SMOTE      | SMOTE-TonekLinks     | JFOTS_pr             | JFOTS_rc             | JFOTS_prom           |
|-------------------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| abalone19                     | 0.023 ± 0.017        | 0.019 ± 0.018        | 0.023 ± 0.016        | 0.023 ± 0.017        | <b>0.026 ± 0.018</b> | 0.020 ± 0.011        | 0.023 ± 0.015        | 0.023 ± 0.017        | 0.025 ± 0.030        | 0.002 ± 0.005        | 0.008 ± 0.005        |
| abalone18                     | 0.244 ± 0.036        | 0.278 ± 0.044        | 0.230 ± 0.029        | 0.233 ± 0.033        | 0.259 ± 0.042        | 0.275 ± 0.045        | 0.243 ± 0.034        | 0.246 ± 0.038        | <b>0.597 ± 0.184</b> | 0.176 ± 0.130        | 0.410 ± 0.242        |
| ecoli-0-1-3-7-vs-2-6          | 0.378 ± 0.110        | 0.413 ± 0.150        | 0.381 ± 0.119        | 0.371 ± 0.113        | 0.414 ± 0.151        | 0.354 ± 0.099        | 0.374 ± 0.111        | 0.378 ± 0.110        | 0.315 ± 0.136        | 0.303 ± 0.082        | <b>0.425 ± 0.239</b> |
| glass-0-1-6-vs-2              | 0.278 ± 0.099        | 0.240 ± 0.046        | 0.271 ± 0.085        | 0.272 ± 0.084        | 0.277 ± 0.066        | 0.211 ± 0.052        | <b>0.288 ± 0.094</b> | 0.273 ± 0.093        | 0.239 ± 0.051        | 0.194 ± 0.128        | 0.277 ± 0.091        |
| glass-0-1-6-vs-2              | 0.689 ± 0.156        | 0.689 ± 0.156        | 0.686 ± 0.148        | 0.686 ± 0.191        | 0.664 ± 0.174        | 0.505 ± 0.214        | 0.676 ± 0.152        | 0.689 ± 0.156        | 0.575 ± 0.197        | 0.438 ± 0.241        | 0.538 ± 0.289        |
| glass2                        | 0.182 ± 0.110        | 0.180 ± 0.114        | 0.176 ± 0.109        | 0.180 ± 0.102        | 0.181 ± 0.113        | 0.170 ± 0.080        | 0.170 ± 0.104        | 0.176 ± 0.105        | <b>0.205 ± 0.103</b> | 0.154 ± 0.136        | 0.179 ± 0.075        |
| glass1                        | 0.558 ± 0.133        | <b>0.582 ± 0.119</b> | 0.532 ± 0.120        | 0.545 ± 0.141        | 0.550 ± 0.141        | 0.508 ± 0.135        | 0.556 ± 0.128        | 0.558 ± 0.133        | 0.560 ± 0.133        | 0.366 ± 0.203        | 0.539 ± 0.190        |
| glass5                        | 0.637 ± 0.131        | <b>0.670 ± 0.149</b> | 0.657 ± 0.165        | 0.637 ± 0.131        | 0.669 ± 0.157        | 0.408 ± 0.138        | 0.637 ± 0.131        | 0.637 ± 0.131        | 0.582 ± 0.190        | 0.547 ± 0.221        | 0.505 ± 0.201        |
| page-blocks1-3-vs-4           | 0.778 ± 0.098        | 0.748 ± 0.095        | 0.768 ± 0.123        | <b>0.781 ± 0.110</b> | 0.774 ± 0.132        | 0.729 ± 0.119        | 0.778 ± 0.113        | 0.778 ± 0.098        | 0.740 ± 0.166        | 0.590 ± 0.203        | 0.757 ± 0.131        |
| yeast-0-5-6-7-9-vs-4          | 0.303 ± 0.042        | 0.315 ± 0.037        | 0.307 ± 0.037        | 0.319 ± 0.040        | 0.316 ± 0.049        | 0.331 ± 0.053        | 0.308 ± 0.045        | <b>0.472 ± 0.122</b> | 0.000 ± 0.000        | 0.323 ± 0.138        | 0.323 ± 0.138        |
| yeast-1-2-8-9-vs-7            | 0.096 ± 0.018        | 0.118 ± 0.023        | 0.094 ± 0.017        | 0.093 ± 0.016        | 0.114 ± 0.036        | 0.099 ± 0.022        | 0.094 ± 0.018        | 0.095 ± 0.017        | <b>0.346 ± 0.235</b> | 0.000 ± 0.000        | 0.184 ± 0.210        |
| yeast-1-4-5-8-vs-7            | 0.091 ± 0.016        | 0.093 ± 0.032        | 0.092 ± 0.019        | 0.086 ± 0.025        | 0.084 ± 0.028        | 0.080 ± 0.022        | 0.089 ± 0.017        | 0.091 ± 0.016        | <b>0.096 ± 0.007</b> | 0.000 ± 0.000        | 0.037 ± 0.046        |
| yeast-1-vs-7                  | 0.202 ± 0.027        | 0.216 ± 0.037        | 0.201 ± 0.020        | 0.201 ± 0.027        | 0.213 ± 0.042        | 0.192 ± 0.024        | 0.188 ± 0.035        | 0.200 ± 0.027        | <b>0.363 ± 0.136</b> | 0.000 ± 0.000        | 0.255 ± 0.303        |
| yeast-2-vs-4                  | 0.668 ± 0.074        | 0.609 ± 0.085        | 0.645 ± 0.072        | 0.645 ± 0.053        | 0.634 ± 0.070        | 0.616 ± 0.076        | 0.647 ± 0.078        | 0.672 ± 0.073        | <b>0.848 ± 0.653</b> | 0.226 ± 0.347        | 0.724 ± 0.088        |
| yeast-2-vs-8                  | 0.271 ± 0.084        | 0.500 ± 0.084        | 0.261 ± 0.088        | 0.260 ± 0.075        | 0.347 ± 0.101        | 0.309 ± 0.042        | 0.256 ± 0.075        | 0.270 ± 0.085        | <b>0.661 ± 0.293</b> | 0.100 ± 0.300        | 0.503 ± 0.168        |
| yeast4                        | 0.200 ± 0.029        | 0.215 ± 0.030        | 0.202 ± 0.033        | 0.207 ± 0.035        | 0.217 ± 0.034        | 0.172 ± 0.020        | 0.211 ± 0.033        | 0.200 ± 0.029        | <b>0.430 ± 0.080</b> | 0.000 ± 0.000        | 0.295 ± 0.141        |
| yeast5                        | 0.504 ± 0.073        | 0.529 ± 0.071        | 0.499 ± 0.070        | 0.496 ± 0.060        | 0.522 ± 0.068        | 0.382 ± 0.060        | 0.493 ± 0.062        | 0.503 ± 0.074        | <b>0.641 ± 0.145</b> | 0.000 ± 0.000        | 0.505 ± 0.200        |
| yeast6                        | 0.225 ± 0.035        | 0.277 ± 0.041        | 0.228 ± 0.039        | 0.221 ± 0.038        | 0.264 ± 0.038        | 0.150 ± 0.027        | 0.224 ± 0.040        | 0.226 ± 0.035        | <b>0.475 ± 0.126</b> | 0.000 ± 0.000        | 0.392 ± 0.132        |
| development-0-vs-4            | 0.596 ± 0.150        | 0.584 ± 0.121        | 0.589 ± 0.154        | 0.574 ± 0.121        | <b>0.653 ± 0.105</b> | 0.634 ± 0.123        | 0.600 ± 0.131        | 0.596 ± 0.150        | 0.491 ± 0.152        | 0.386 ± 0.239        | 0.355 ± 0.228        |
| ecoli-0-1-4-7-vs-2-3-5-6      | 0.554 ± 0.092        | 0.619 ± 0.087        | 0.551 ± 0.075        | 0.572 ± 0.082        | 0.559 ± 0.090        | 0.532 ± 0.085        | 0.545 ± 0.103        | 0.559 ± 0.092        | <b>0.751 ± 0.091</b> | 0.142 ± 0.182        | 0.564 ± 0.210        |
| ecoli-0-1-vs-2-3-5            | 0.729 ± 0.155        | 0.756 ± 0.148        | 0.701 ± 0.141        | 0.724 ± 0.150        | 0.773 ± 0.164        | 0.669 ± 0.162        | 0.691 ± 0.134        | 0.729 ± 0.155        | <b>0.801 ± 0.152</b> | 0.367 ± 0.340        | 0.642 ± 0.218        |
| ecoli-0-2-6-7-vs-3-5          | 0.579 ± 0.118        | 0.612 ± 0.110        | 0.576 ± 0.136        | 0.630 ± 0.140        | 0.586 ± 0.125        | 0.527 ± 0.104        | 0.577 ± 0.126        | 0.575 ± 0.117        | <b>0.828 ± 0.124</b> | 0.172 ± 0.163        | 0.687 ± 0.187        |
| ecoli-0-6-7-vs-3-5            | 0.613 ± 0.140        | 0.645 ± 0.128        | 0.607 ± 0.156        | 0.685 ± 0.164        | 0.614 ± 0.117        | 0.591 ± 0.126        | 0.609 ± 0.132        | 0.619 ± 0.133        | <b>0.806 ± 0.092</b> | 0.287 ± 0.337        | 0.678 ± 0.260        |
| ecoli-0-6-7-vs-2              | 0.642 ± 0.203        | 0.670 ± 0.189        | 0.642 ± 0.199        | 0.655 ± 0.204        | 0.665 ± 0.188        | 0.575 ± 0.140        | 0.645 ± 0.210        | 0.645 ± 0.201        | <b>0.816 ± 0.149</b> | 0.216 ± 0.312        | 0.773 ± 0.162        |
| glass-0-1-4-6-vs-2            | 0.237 ± 0.080        | <b>0.241 ± 0.085</b> | 0.231 ± 0.091        | 0.230 ± 0.085        | 0.230 ± 0.101        | 0.203 ± 0.063        | 0.231 ± 0.091        | 0.235 ± 0.081        | 0.117 ± 0.071        | 0.136 ± 0.130        | 0.120 ± 0.079        |
| glass-0-1-5-vs-2              | 0.226 ± 0.048        | 0.235 ± 0.065        | 0.227 ± 0.048        | 0.226 ± 0.059        | <b>0.246 ± 0.087</b> | 0.204 ± 0.049        | 0.239 ± 0.056        | 0.225 ± 0.049        | 0.235 ± 0.085        | 0.200 ± 0.148        | 0.204 ± 0.126        |
| yeast-0-2-5-6-vs-3-7-8-9      | 0.532 ± 0.027        | 0.368 ± 0.033        | 0.330 ± 0.023        | 0.336 ± 0.033        | 0.356 ± 0.025        | 0.379 ± 0.058        | 0.332 ± 0.033        | 0.334 ± 0.028        | <b>0.534 ± 0.137</b> | 0.187 ± 0.205        | 0.464 ± 0.090        |
| yeast-0-5-5-9-vs-7-8          | 0.252 ± 0.043        | 0.281 ± 0.053        | 0.250 ± 0.042        | 0.245 ± 0.046        | 0.283 ± 0.042        | <b>0.285 ± 0.060</b> | 0.241 ± 0.030        | 0.252 ± 0.041        | 0.292 ± 0.191        | 0.040 ± 0.120        | 0.188 ± 0.099        |
| abalone-17-vs-7-8-9-10        | 0.190 ± 0.032        | 0.281 ± 0.044        | 0.191 ± 0.030        | 0.187 ± 0.028        | 0.231 ± 0.043        | 0.210 ± 0.032        | 0.194 ± 0.033        | 0.190 ± 0.033        | <b>0.325 ± 0.063</b> | 0.156 ± 0.115        | 0.147 ± 0.111        |
| abalone-19-vs-10-11-12-13     | 0.047 ± 0.012        | <b>0.056 ± 0.018</b> | 0.049 ± 0.012        | 0.049 ± 0.014        | 0.048 ± 0.025        | 0.047 ± 0.017        | 0.044 ± 0.014        | 0.047 ± 0.012        | 0.056 ± 0.036        | 0.016 ± 0.015        | 0.035 ± 0.036        |
| abalone-20-vs-8-9-10          | 0.164 ± 0.028        | 0.130 ± 0.051        | 0.169 ± 0.033        | 0.171 ± 0.031        | 0.166 ± 0.049        | 0.118 ± 0.029        | 0.167 ± 0.034        | 0.161 ± 0.028        | <b>0.284 ± 0.154</b> | 0.041 ± 0.052        | 0.188 ± 0.149        |
| abalone-21-vs-2               | 0.440 ± 0.119        | 0.520 ± 0.162        | 0.418 ± 0.108        | 0.412 ± 0.104        | 0.485 ± 0.165        | 0.393 ± 0.120        | 0.400 ± 0.098        | 0.437 ± 0.122        | 0.421 ± 0.200        | 0.318 ± 0.268        | <b>0.566 ± 0.187</b> |
| flame-F                       | 0.202 ± 0.038        | 0.209 ± 0.028        | 0.198 ± 0.040        | 0.202 ± 0.041        | 0.209 ± 0.039        | 0.195 ± 0.031        | 0.206 ± 0.046        | 0.197 ± 0.032        | <b>0.369 ± 0.253</b> | 0.150 ± 0.320        | 0.234 ± 0.139        |
| kddcup-bufferoverflow-vs-back | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | 0.394 ± 0.019        | 0.994 ± 0.019        | 0.994 ± 0.019        |
| kddcup-rookite-innp-vs-back   | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> |
| kevs-vs-keros-vs-night        | 0.730 ± 0.153        | <b>0.765 ± 0.172</b> | 0.723 ± 0.157        | 0.741 ± 0.152        | 0.758 ± 0.164        | 0.539 ± 0.083        | 0.740 ± 0.155        | 0.730 ± 0.153        | 0.550 ± 0.324        | 0.000 ± 0.000        | 0.506 ± 0.375        |
| poker-8-9-vs-2                | 0.065 ± 0.026        | <b>0.091 ± 0.037</b> | 0.066 ± 0.029        | 0.064 ± 0.029        | 0.055 ± 0.045        | 0.053 ± 0.018        | 0.060 ± 0.027        | 0.065 ± 0.026        | 0.052 ± 0.064        | 0.017 ± 0.035        | 0.045 ± 0.057        |
| poker-8-9-vs-6                | 0.428 ± 0.060        | 0.466 ± 0.080        | 0.426 ± 0.058        | 0.435 ± 0.064        | 0.505 ± 0.050        | 0.360 ± 0.065        | 0.434 ± 0.092        | 0.428 ± 0.060        | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> |
| poker-8-vs-6                  | 0.310 ± 0.074        | 0.341 ± 0.111        | 0.308 ± 0.073        | 0.297 ± 0.072        | 0.350 ± 0.102        | 0.267 ± 0.049        | 0.314 ± 0.085        | 0.310 ± 0.074        | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | 0.878 ± 0.300        |
| poker-9-vs-7                  | 0.497 ± 0.228        | 0.507 ± 0.234        | 0.495 ± 0.226        | 0.523 ± 0.267        | 0.550 ± 0.268        | 0.652 ± 0.273        | 0.532 ± 0.241        | 0.497 ± 0.228        | 0.597 ± 0.459        | <b>0.698 ± 0.389</b> | 0.391 ± 0.382        |
| winequality-red-3-vs-2        | 0.081 ± 0.045        | 0.095 ± 0.058        | 0.081 ± 0.045        | 0.080 ± 0.045        | 0.091 ± 0.051        | <b>0.161 ± 0.098</b> | 0.088 ± 0.050        | 0.081 ± 0.045        | 0.063 ± 0.074        | 0.008 ± 0.023        | 0.059 ± 0.053        |
| winequality-red-4             | 0.082 ± 0.015        | 0.080 ± 0.023        | 0.081 ± 0.018        | 0.080 ± 0.012        | 0.096 ± 0.025        | 0.085 ± 0.023        | 0.084 ± 0.015        | 0.082 ± 0.015        | <b>0.116 ± 0.063</b> | 0.054 ± 0.055        | 0.082 ± 0.037        |
| winequality-red-8-vs-6-7      | 0.031 ± 0.024        | 0.040 ± 0.029        | 0.033 ± 0.023        | 0.033 ± 0.024        | 0.042 ± 0.026        | 0.040 ± 0.030        | 0.035 ± 0.020        | 0.031 ± 0.024        | 0.041 ± 0.033        | 0.040 ± 0.049        | <b>0.049 ± 0.039</b> |
| winequality-red-8-vs-6        | 0.090 ± 0.019        | 0.108 ± 0.036        | 0.087 ± 0.023        | 0.089 ± 0.019        | 0.092 ± 0.038        | 0.094 ± 0.036        | 0.097 ± 0.037        | 0.090 ± 0.019        | 0.099 ± 0.049        | 0.082 ± 0.054        | <b>0.125 ± 0.080</b> |
| winequality-white-3-9-vs-2    | 0.068 ± 0.019        | 0.097 ± 0.030        | 0.066 ± 0.017        | 0.066 ± 0.017        | 0.082 ± 0.027        | 0.136 ± 0.074        | 0.060 ± 0.016        | 0.068 ± 0.019        | <b>0.158 ± 0.284</b> | 0.024 ± 0.019        | 0.091 ± 0.061        |
| winequality-white-3-vs-7      | 0.112 ± 0.065        | 0.100 ± 0.065        | 0.111 ± 0.066        | 0.105 ± 0.067        | 0.207 ± 0.270        | <b>0.414 ± 0.245</b> | 0.114 ± 0.068        | 0.112 ± 0.065        | 0.147 ± 0.101        | 0.110 ± 0.076        | 0.105 ± 0.062        |
| winequality-white-9-vs-4      | 0.514 ± 0.337        | <b>0.536 ± 0.319</b> | 0.514 ± 0.337        | 0.421 ± 0.392        | 0.516 ± 0.335        | 0.465 ± 0.373        | 0.514 ± 0.337        | 0.514 ± 0.337        | 0.165 ± 0.129        | 0.165 ± 0.129        | 0.165 ± 0.129        |
| zoo-0-460                     | <b>0.460 ± 0.260</b> | <b>0.460 ± 0.260</b> | <b>0.460 ± 0.260</b> | 0.367 ± 0.354        | <b>0.460 ± 0.260</b> | 0.367 ± 0.354        | <b>0.460 ± 0.260</b> | <b>0.460 ± 0.260</b> | 0.253 ± 0.238        | 0.253 ± 0.238        | 0.253 ± 0.238        |
| ecoli1                        | 0.700 ± 0.057        | <b>0.713 ± 0.065</b> | 0.694 ± 0.047        | 0.710 ± 0.041        | 0.700 ± 0.054        | 0.700 ± 0.056        | 0.691 ± 0.046        | 0.697 ± 0.055        | 0.646 ± 0.041        | 0.139 ± 0.280        | 0.693 ± 0.064        |
| ecoli2                        | 0.692 ± 0.080        | <b>0.721 ± 0.089</b> | 0.687 ± 0.100        | 0.693 ± 0.088        | 0.727 ± 0.078        | 0.669 ± 0.064        | 0.689 ± 0.090        | 0.690 ± 0.079        | 0.637 ± 0.148        | 0.193 ± 0.309        | 0.648 ± 0.109        |
| ecoli3                        | 0.475 ± 0.036        | 0.482 ± 0.036        | 0.473 ± 0.024        | 0.478 ± 0.043        | 0.477 ± 0.041        | 0.424 ± 0.034        | 0.476 ± 0.035        | 0.473 ± 0.037        | <b>0.539 ± 0.072</b> | 0.113 ± 0.180        | 0.478 ± 0.181        |
| glass0                        | 0.608 ± 0.053        | 0.611 ± 0.056        | 0.599 ± 0.038        | 0.606 ± 0.043        | 0.610 ± 0.047        | 0.608 ± 0.055        | 0.616 ± 0.050        | 0.614 ± 0.054        | 0.611 ± 0.034        | 0.508 ± 0.204        | <b>0.632 ± 0.081</b> |
| glass1                        | 0.614 ± 0.061        | 0.620 ± 0.068        | 0.633 ± 0.070        | <b>0.634 ± 0.053</b> | 0.626 ± 0.059        | 0.633 ± 0.042        | 0.616 ± 0.048        | 0.616 ± 0.064        | 0.602 ± 0.070        | 0.444 ± 0.196        | 0.564 ± 0.063        |
| haberman                      | 0.366 ± 0.033        | 0.400 ± 0.035        | 0.348 ± 0.032        | 0.355 ± 0.015        | 0.359 ± 0.040        | 0.362 ± 0.029        | 0.348 ± 0.021        | 0.364 ± 0.035        | <b>0.435 ± 0.005</b> | 0.308 ± 0.120        | 0.420 ± 0.102        |
| page-blocks0                  | 0.733 ± 0.025        | 0.804 ± 0.021        | 0.732 ± 0.026        | 0.750 ± 0.029        | 0.738 ± 0.016        | <b>0.855 ± 0.012</b> | 0.728 ± 0.025        | 0.732 ± 0.024        | 0.824 ± 0.055        | 0.757 ± 0.034        | 0.771 ± 0.055        |
| ptms                          | 0.549 ± 0.026        | 0.586 ± 0.019        | 0.554 ± 0.013        | 0.552 ± 0.019        | 0.549 ± 0.022        | 0.569 ± 0.027        | 0.553 ± 0.019        | 0.556 ± 0.029        | <b>0.601 ± 0.031</b> | 0.491 ± 0.075        | 0.577 ± 0.036        |
| vehicle1                      | 0.476 ± 0.020        | <b>0.516 ± 0.027</b> | 0.476 ± 0.023        | 0.490 ± 0.021        | 0.485 ± 0.018        | 0.496 ± 0.029        | 0.487 ± 0.022        | 0.477 ± 0.021        | 0.505 ± 0.036        | 0.93 ± 0.029         | 0.85 ± 0.032         |
| vehicle2                      | 0.470 ± 0.028        | 0.474 ± 0.037        | 0.473 ± 0.026        | 0.471 ± 0.028        | 0.475 ± 0.024        | 0.470 ± 0.029        | 0.467 ± 0.026        | 0.468 ± 0.           |                      |                      |                      |

Table 7. CART – Recall

| Dataset name                  | SMOTE                | polynom-fit-SMOTE    | Lee                  | SMOBD                | G-SMOTE              | LVQ-SMOTE            | Assembled-SMOTE      | SMOTE-TonekLinks     | JFOTS_pr             | JFOTS_rc             | JFOTS_prom           |
|-------------------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| abalone19                     | 0.162 ± 0.089        | 0.019 ± 0.029        | 0.131 ± 0.081        | 0.169 ± 0.089        | 0.112 ± 0.104        | 0.131 ± 0.099        | 0.150 ± 0.102        | 0.162 ± 0.089        | 0.025 ± 0.041        | <b>0.319 ± 0.111</b> | 0.312 ± 0.357        |
| abalone19-18                  | 0.410 ± 0.123        | 0.261 ± 0.078        | 0.429 ± 0.119        | 0.452 ± 0.068        | 0.367 ± 0.068        | <b>0.486 ± 0.170</b> | 0.381 ± 0.077        | 0.419 ± 0.131        | 0.362 ± 0.086        | 0.352 ± 0.248        | 0.295 ± 0.120        |
| ecoli-0-1-3-7-vs-2-6          | 0.600 ± 0.232        | <b>0.650 ± 0.128</b> | 0.600 ± 0.232        | 0.600 ± 0.232        | <b>0.650 ± 0.128</b> | 0.575 ± 0.199        | 0.600 ± 0.232        | 0.600 ± 0.232        | 0.417 ± 0.211        | 0.250 ± 0.183        | 0.450 ± 0.221        |
| glass0-1-6-vs-2               | 0.367 ± 0.114        | 0.244 ± 0.088        | 0.435 ± 0.125        | 0.375 ± 0.137        | 0.318 ± 0.126        | 0.369 ± 0.187        | 0.364 ± 0.211        | 0.365 ± 0.108        | 0.382 ± 0.206        | <b>0.450 ± 0.301</b> | 0.308 ± 0.115        |
| glass0-1-6-vs-2               | 0.735 ± 0.273        | 0.735 ± 0.273        | 0.735 ± 0.273        | 0.735 ± 0.273        | 0.610 ± 0.369        | <b>0.805 ± 0.272</b> | 0.735 ± 0.273        | 0.555 ± 0.306        | <b>0.805 ± 0.313</b> | 0.500 ± 0.322        |                      |
| glass2                        | 0.275 ± 0.223        | 0.233 ± 0.160        | 0.239 ± 0.199        | 0.312 ± 0.182        | 0.274 ± 0.216        | 0.318 ± 0.230        | 0.239 ± 0.175        | 0.300 ± 0.232        | 0.251 ± 0.158        | <b>0.479 ± 0.285</b> | 0.331 ± 0.175        |
| glass2                        | 0.740 ± 0.165        | 0.707 ± 0.109        | 0.740 ± 0.165        | 0.724 ± 0.164        | <b>0.755 ± 0.151</b> | 0.681 ± 0.187        | 0.740 ± 0.165        | 0.740 ± 0.165        | 0.610 ± 0.222        | 0.600 ± 0.146        | 0.381 ± 0.219        |
| glass5                        | 0.720 ± 0.316        | 0.720 ± 0.316        | 0.720 ± 0.316        | 0.720 ± 0.316        | 0.745 ± 0.327        | <b>0.890 ± 0.221</b> | 0.720 ± 0.316        | 0.690 ± 0.309        | 0.815 ± 0.266        | 0.610 ± 0.314        |                      |
| page-blocks1-3-vs-4           | 0.943 ± 0.119        | 0.907 ± 0.124        | 0.906 ± 0.137        | 0.936 ± 0.137        | 0.860 ± 0.128        | 0.943 ± 0.105        | <b>0.971 ± 0.065</b> | 0.943 ± 0.119        | 0.814 ± 0.129        | 0.793 ± 0.176        | 0.857 ± 0.172        |
| yeast-0-5-6-7-9-vs-4          | 0.493 ± 0.131        | 0.436 ± 0.101        | 0.524 ± 0.107        | 0.482 ± 0.125        | 0.442 ± 0.085        | 0.573 ± 0.119        | 0.470 ± 0.090        | 0.509 ± 0.088        | 0.401 ± 0.107        | <b>0.980 ± 0.020</b> | 0.444 ± 0.124        |
| yeast-1-2-8-vs-7              | 0.247 ± 0.060        | 0.200 ± 0.089        | 0.260 ± 0.063        | 0.233 ± 0.100        | 0.253 ± 0.107        | 0.420 ± 0.133        | 0.247 ± 0.052        | 0.280 ± 0.088        | 0.180 ± 0.099        | <b>1.000 ± 0.000</b> | 0.207 ± 0.159        |
| yeast-1-4-5-8-vs-7            | 0.167 ± 0.095        | 0.173 ± 0.053        | 0.167 ± 0.124        | 0.147 ± 0.083        | 0.153 ± 0.112        | 0.193 ± 0.101        | 0.200 ± 0.060        | 0.153 ± 0.085        | 0.073 ± 0.076        | <b>1.000 ± 0.000</b> | 0.253 ± 0.251        |
| yeast-1-vs-7                  | 0.320 ± 0.111        | 0.320 ± 0.102        | 0.307 ± 0.120        | 0.367 ± 0.109        | 0.287 ± 0.116        | 0.487 ± 0.099        | 0.340 ± 0.105        | 0.313 ± 0.099        | 0.213 ± 0.093        | <b>0.760 ± 0.398</b> | 0.440 ± 0.285        |
| yeast-2-vs-4                  | 0.741 ± 0.098        | 0.718 ± 0.114        | 0.769 ± 0.093        | 0.762 ± 0.137        | 0.754 ± 0.112        | <b>0.796 ± 0.091</b> | 0.773 ± 0.093        | 0.729 ± 0.078        | 0.668 ± 0.103        | 0.775 ± 0.310        | 0.651 ± 0.076        |
| yeast-2-vs-8                  | 0.530 ± 0.185        | 0.550 ± 0.136        | 0.600 ± 0.228        | 0.610 ± 0.181        | 0.550 ± 0.150        | 0.580 ± 0.108        | 0.540 ± 0.128        | 0.550 ± 0.180        | 0.520 ± 0.098        | <b>0.940 ± 0.120</b> | 0.510 ± 0.104        |
| yeast4                        | 0.401 ± 0.096        | 0.306 ± 0.066        | 0.428 ± 0.123        | 0.428 ± 0.102        | 0.307 ± 0.079        | 0.511 ± 0.110        | 0.394 ± 0.165        | 0.405 ± 0.100        | 0.387 ± 0.100        | <b>0.980 ± 0.020</b> | 0.243 ± 0.113        |
| yeast5                        | 0.736 ± 0.149        | 0.705 ± 0.137        | 0.705 ± 0.129        | 0.732 ± 0.139        | 0.723 ± 0.132        | 0.795 ± 0.098        | 0.750 ± 0.117        | 0.741 ± 0.155        | 0.695 ± 0.100        | <b>1.000 ± 0.000</b> | 0.664 ± 0.179        |
| yeast6                        | 0.494 ± 0.143        | 0.413 ± 0.091        | 0.483 ± 0.140        | 0.528 ± 0.133        | 0.510 ± 0.099        | 0.608 ± 0.106        | 0.516 ± 0.122        | 0.495 ± 0.137        | 0.381 ± 0.115        | <b>0.978 ± 0.067</b> | 0.394 ± 0.102        |
| cleaveland-0-vs-4             | <b>0.681 ± 0.119</b> | 0.517 ± 0.264        | 0.624 ± 0.209        | 0.610 ± 0.175        | 0.550 ± 0.257        | 0.555 ± 0.096        | 0.652 ± 0.140        | <b>0.681 ± 0.119</b> | 0.574 ± 0.170        | 0.629 ± 0.127        | 0.445 ± 0.161        |
| ecoli-0-1-4-7-vs-2-3-5-6      | 0.648 ± 0.154        | 0.634 ± 0.089        | 0.696 ± 0.090        | 0.640 ± 0.139        | 0.601 ± 0.135        | <b>0.750 ± 0.092</b> | 0.702 ± 0.104        | 0.675 ± 0.169        | 0.464 ± 0.219        | 0.143 ± 0.186        | 0.540 ± 0.155        |
| ecoli-0-1-vs-2-3-5            | 0.642 ± 0.129        | 0.608 ± 0.129        | 0.550 ± 0.093        | 0.625 ± 0.093        | <b>0.758 ± 0.137</b> | 0.617 ± 0.113        | 0.650 ± 0.128        | 0.558 ± 0.190        | 0.333 ± 0.296        | 0.575 ± 0.169        |                      |
| ecoli-0-2-6-7-vs-3-5          | 0.655 ± 0.106        | 0.609 ± 0.135        | 0.682 ± 0.117        | 0.700 ± 0.163        | 0.709 ± 0.121        | <b>0.755 ± 0.122</b> | 0.618 ± 0.127        | 0.655 ± 0.106        | 0.582 ± 0.116        | 0.182 ± 0.244        | 0.655 ± 0.121        |
| ecoli-0-6-7-vs-3-5            | 0.655 ± 0.140        | 0.627 ± 0.103        | 0.682 ± 0.124        | 0.691 ± 0.130        | 0.718 ± 0.155        | <b>0.764 ± 0.136</b> | 0.655 ± 0.121        | 0.655 ± 0.140        | 0.582 ± 0.136        | 0.327 ± 0.315        | 0.582 ± 0.183        |
| ecoli-0-6-7-vs-2              | 0.720 ± 0.125        | 0.710 ± 0.151        | 0.700 ± 0.118        | 0.720 ± 0.125        | 0.700 ± 0.126        | <b>0.760 ± 0.102</b> | 0.690 ± 0.104        | 0.720 ± 0.125        | 0.730 ± 0.168        | 0.670 ± 0.332        | 0.700 ± 0.200        |
| glass0-1-4-6-vs-2             | 0.272 ± 0.108        | 0.222 ± 0.157        | 0.310 ± 0.148        | 0.272 ± 0.131        | 0.318 ± 0.143        | 0.447 ± 0.163        | 0.211 ± 0.112        | 0.235 ± 0.129        | 0.192 ± 0.148        | <b>0.494 ± 0.347</b> | 0.358 ± 0.269        |
| glass0-1-5-vs-2               | 0.482 ± 0.146        | 0.303 ± 0.122        | 0.461 ± 0.180        | 0.550 ± 0.213        | 0.364 ± 0.138        | 0.407 ± 0.188        | 0.411 ± 0.159        | 0.457 ± 0.129        | 0.293 ± 0.123        | <b>0.596 ± 0.295</b> | 0.325 ± 0.205        |
| yeast-0-2-5-6-vs-3-7-8-9      | 0.322 ± 0.078        | 0.492 ± 0.104        | 0.560 ± 0.076        | 0.518 ± 0.056        | 0.513 ± 0.068        | 0.550 ± 0.102        | 0.514 ± 0.069        | 0.499 ± 0.075        | 0.356 ± 0.126        | <b>0.633 ± 0.151</b> | 0.342 ± 0.061        |
| yeast-0-5-9-vs-7-8            | 0.336 ± 0.086        | 0.356 ± 0.083        | 0.380 ± 0.095        | 0.386 ± 0.090        | 0.552 ± 0.087        | 0.412 ± 0.088        | 0.368 ± 0.066        | 0.400 ± 0.067        | 0.176 ± 0.118        | <b>0.932 ± 0.204</b> | 0.320 ± 0.174        |
| abalone-17-vs-5-8-9-10        | 0.334 ± 0.089        | 0.310 ± 0.069        | 0.331 ± 0.090        | 0.366 ± 0.093        | 0.321 ± 0.090        | <b>0.390 ± 0.046</b> | 0.334 ± 0.082        | 0.331 ± 0.077        | 0.290 ± 0.110        | 0.272 ± 0.224        | 0.334 ± 0.187        |
| abalone-19-vs-10-11-12-13     | 0.181 ± 0.090        | 0.062 ± 0.048        | 0.181 ± 0.110        | 0.169 ± 0.084        | 0.131 ± 0.113        | 0.262 ± 0.111        | 0.175 ± 0.083        | 0.188 ± 0.062        | 0.075 ± 0.083        | <b>0.312 ± 0.310</b> | 0.188 ± 0.163        |
| abalone-20-vs-8-9-10          | 0.423 ± 0.105        | 0.185 ± 0.130        | 0.377 ± 0.126        | 0.392 ± 0.100        | 0.277 ± 0.143        | <b>0.638 ± 0.119</b> | 0.392 ± 0.123        | 0.423 ± 0.105        | 0.262 ± 0.110        | 0.392 ± 0.258        | 0.269 ± 0.147        |
| abalone-21-vs-2               | 0.486 ± 0.257        | 0.329 ± 0.144        | 0.429 ± 0.192        | 0.414 ± 0.234        | 0.500 ± 0.146        | <b>0.629 ± 0.146</b> | 0.414 ± 0.225        | 0.500 ± 0.265        | 0.443 ± 0.259        | 0.314 ± 0.237        | 0.314 ± 0.167        |
| flaw-F                        | 0.149 ± 0.073        | 0.187 ± 0.062        | 0.173 ± 0.093        | 0.192 ± 0.081        | 0.210 ± 0.049        | 0.195 ± 0.074        | 0.187 ± 0.100        | 0.191 ± 0.075        | 0.386 ± 0.181        | <b>0.949 ± 0.052</b> | 0.416 ± 0.208        |
| kddcup-bufferoverflow-vs-back | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> |
| kddcup-rootkit-innp-vs-back   | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> |
| kr-vs-karozs-vs-right         | 0.925 ± 0.101        | 0.932 ± 0.103        | 0.932 ± 0.103        | 0.932 ± 0.103        | <b>0.939 ± 0.083</b> | 0.938 ± 0.141        | 0.909 ± 0.116        | 0.925 ± 0.101        | 0.570 ± 0.186        | 0.733 ± 0.071        | 0.777 ± 0.127        |
| poker-8-9-vs-6                | 0.175 ± 0.078        | 0.135 ± 0.100        | 0.160 ± 0.063        | 0.175 ± 0.067        | 0.111 ± 0.102        | 0.215 ± 0.140        | 0.113 ± 0.056        | 0.175 ± 0.078        | 0.072 ± 0.098        | <b>0.219 ± 0.097</b> | 0.156 ± 0.217        |
| poker-8-9-vs-6                | 0.383 ± 0.172        | 0.654 ± 0.277        | 0.358 ± 0.186        | 0.308 ± 0.161        | 0.513 ± 0.278        | 0.294 ± 0.188        | 0.333 ± 0.208        | 0.383 ± 0.172        | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> |
| poker-8-vs-6                  | 0.376 ± 0.197        | 0.378 ± 0.324        | 0.414 ± 0.246        | 0.375 ± 0.189        | 0.389 ± 0.192        | 0.363 ± 0.311        | 0.364 ± 0.193        | 0.376 ± 0.197        | <b>0.863 ± 0.169</b> | <b>0.863 ± 0.169</b> | 0.672 ± 0.319        |
| poker-9-vs-7                  | 0.150 ± 0.166        | 0.125 ± 0.125        | 0.150 ± 0.166        | 0.150 ± 0.166        | 0.200 ± 0.187        | 0.250 ± 0.250        | 0.150 ± 0.166        | <b>0.400 ± 0.406</b> | 0.325 ± 0.317        | 0.275 ± 0.305        |                      |
| winequality-red-3-vs-2        | 0.060 ± 0.092        | 0.080 ± 0.133        | 0.040 ± 0.080        | 0.060 ± 0.092        | 0.080 ± 0.183        | <b>0.160 ± 0.120</b> | 0.080 ± 0.133        | 0.060 ± 0.092        | 0.060 ± 0.092        | 0.100 ± 0.100        | 0.140 ± 0.128        |
| winequality-red-4             | 0.182 ± 0.101        | 0.121 ± 0.062        | <b>0.234 ± 0.069</b> | 0.223 ± 0.077        | 0.186 ± 0.075        | 0.223 ± 0.079        | 0.177 ± 0.038        | 0.182 ± 0.104        | 0.113 ± 0.064        | 0.207 ± 0.126        | 0.151 ± 0.071        |
| winequality-red-8-vs-6        | 0.278 ± 0.114        | 0.256 ± 0.132        | 0.267 ± 0.102        | 0.267 ± 0.142        | 0.200 ± 0.097        | 0.300 ± 0.122        | <b>0.322 ± 0.126</b> | 0.278 ± 0.114        | 0.200 ± 0.083        | 0.167 ± 0.134        | 0.178 ± 0.124        |
| winequality-white-3-9-vs-2    | 0.183 ± 0.129        | 0.120 ± 0.098        | 0.128 ± 0.106        | 0.145 ± 0.113        | 0.097 ± 0.121        | <b>0.338 ± 0.117</b> | 0.120 ± 0.073        | 0.183 ± 0.129        | 0.079 ± 0.061        | 0.049 ± 0.040        | 0.072 ± 0.042        |
| winequality-white-3-vs-7      | 0.120 ± 0.087        | 0.140 ± 0.120        | 0.190 ± 0.130        | 0.180 ± 0.138        | 0.210 ± 0.094        | <b>0.510 ± 0.176</b> | 0.090 ± 0.094        | 0.120 ± 0.087        | 0.120 ± 0.060        | 0.190 ± 0.158        | 0.170 ± 0.135        |
| winequality-white-9-vs-4      | <b>0.467 ± 0.332</b> | 0.367 ± 0.208        | <b>0.467 ± 0.332</b> | <b>0.467 ± 0.332</b> | <b>0.467 ± 0.332</b> | 0.417 ± 0.281        | <b>0.467 ± 0.332</b> | <b>0.467 ± 0.332</b> | 0.183 ± 0.229        | 0.183 ± 0.229        | 0.183 ± 0.229        |
| zoo-3                         | 0.383 ± 0.380        | 0.283 ± 0.248        | 0.383 ± 0.308        | 0.367 ± 0.306        | 0.333 ± 0.325        | <b>0.517 ± 0.293</b> | 0.333 ± 0.236        | 0.383 ± 0.380        | 0.317 ± 0.311        | 0.317 ± 0.311        | 0.317 ± 0.311        |
| ecoli1                        | 0.775 ± 0.123        | 0.728 ± 0.088        | 0.747 ± 0.104        | 0.754 ± 0.091        | 0.765 ± 0.097        | 0.806 ± 0.090        | 0.733 ± 0.113        | 0.809 ± 0.084        | 0.620 ± 0.122        | <b>0.821 ± 0.309</b> | 0.694 ± 0.102        |
| ecoli2                        | 0.773 ± 0.070        | 0.728 ± 0.078        | 0.758 ± 0.064        | 0.755 ± 0.089        | 0.769 ± 0.060        | <b>0.827 ± 0.085</b> | 0.773 ± 0.102        | 0.769 ± 0.069        | 0.627 ± 0.158        | 0.662 ± 0.391        | 0.715 ± 0.125        |
| ecoli3                        | 0.743 ± 0.096        | 0.726 ± 0.106        | 0.706 ± 0.096        | 0.743 ± 0.076        | 0.740 ± 0.093        | <b>0.774 ± 0.071</b> | 0.751 ± 0.075        | 0.743 ± 0.048        | 0.671 ± 0.092        | 0.611 ± 0.127        | 0.666 ± 0.121        |
| glass1                        | 0.666 ± 0.047        | 0.668 ± 0.078        | 0.687 ± 0.110        | 0.679 ± 0.073        | 0.647 ± 0.094        | 0.674 ± 0.074        | 0.682 ± 0.091        | 0.645 ± 0.056        | 0.571 ± 0.160        | <b>0.853 ± 0.132</b> | 0.579 ± 0.069        |
| haberman                      | 0.445 ± 0.078        | 0.468 ± 0.059        | 0.417 ± 0.101        | 0.360 ± 0.087        | 0.407 ± 0.106        | 0.442 ± 0.065        | 0.397 ± 0.113        | <b>0.449 ± 0.092</b> | 0.361 ± 0.080        | 0.281 ± 0.097        | 0.324 ± 0.084        |
| page-blocks0                  | 0.865 ± 0.026        | 0.820 ± 0.019        | 0.861 ± 0.022        | 0.858 ± 0.015        | 0.841 ± 0.020        | 0.823 ± 0.018        | <b>0.869 ± 0.024</b> | 0.864 ± 0.017        | 0.836 ± 0.026        | 0.815 ± 0.028        | 0.807 ± 0.035        |
| ptm                           | 0.588 ± 0.050        | 0.584 ± 0.044        | 0.572 ± 0.045        | 0.581 ± 0.039        | 0.582 ± 0.039        | <b>0.611 ± 0.038</b> | 0.565 ± 0.036        | 0.590 ± 0.039        | 0.564 ± 0.043        | 0.472 ± 0.103        | 0.582 ± 0.048        |
| vehicle1                      | 0.519 ± 0.058        | 0.519 ± 0.044        | 0.543 ± 0.085        | 0.527 ± 0.055        | 0.522 ± 0.061        | <b>0.579 ± 0.047</b> | 0.543 ± 0.053        | 0.537 ± 0.044        | 0.512 ± 0.044        | 0.506 ± 0.042        | 0.523 ± 0.073        |
| vehicle2                      | 0.534 ± 0.046        | 0.558 ± 0.040        | 0.504 ± 0.044        | 0.559 ± 0.058        | 0.533 ± 0.039        | <b>0.576 ± 0.035</b> | 0.537 ± 0.054        | 0.535 ± 0.028        | 0.516 ± 0.063        | 0.548 ± 0.040        | 0.514 ± 0.064        |
| yeast1                        | 0.531 ± 0.031        | 0.526 ± 0.029        | 0.537 ± 0.035        | 0.537 ± 0.027        | 0.540 ± 0.037        | 0.550 ± 0.040        | 0.538 ± 0.031        | 0.514 ± 0.019        | 0.468 ± 0.091        | <b>1.000 ± 0.000</b> | 0.538 ± 0.134        |
| yeast3                        | 0.772 ± 0.056        | 0.704 ± 0.061        | 0.773 ± 0.044        | 0.746 ± 0.028        | 0.735 ± 0.045        | 0.778 ± 0.061        | 0.751 ± 0.060        | 0.778 ± 0.057        | 0.689 ± 0.058        | <b>0.994 ± 0.006</b> |                      |

Table 8. SVM – Recall

| Dataset name                   | SMOTE                | polynom-ft-SMOTE     | Lee                  | SMOBD                | G-SMOTE              | LVQ-SMOTE            | Assembled-SMOTE      | SMOTE-TonekLinks     | JFOTS_pr             | JFOTS_rc             | JFOTS_prom           |
|--------------------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| abalone19                      | 0.300 ± 0.131        | 0.194 ± 0.099        | 0.300 ± 0.121        | 0.312 ± 0.137        | 0.306 ± 0.132        | 0.456 ± 0.119        | 0.300 ± 0.131        | 0.300 ± 0.131        | 0.475 ± 0.211        | 0.637 ± 0.276        | <b>0.663 ± 0.179</b> |
| abalone18                      | 0.590 ± 0.107        | 0.448 ± 0.077        | 0.610 ± 0.073        | 0.614 ± 0.081        | 0.586 ± 0.107        | 0.648 ± 0.083        | 0.595 ± 0.071        | 0.590 ± 0.107        | 0.395 ± 0.154        | <b>0.681 ± 0.088</b> | 0.438 ± 0.184        |
| ecoli-0-1-3-7-vs-2-6           | 0.700 ± 0.155        | 0.700 ± 0.155        | 0.700 ± 0.155        | 0.700 ± 0.155        | 0.700 ± 0.155        | 0.725 ± 0.179        | 0.700 ± 0.155        | 0.700 ± 0.155        | 0.742 ± 0.248        | 0.742 ± 0.248        | <b>0.775 ± 0.211</b> |
| glass-0-1-6-vs-2               | 0.629 ± 0.196        | 0.504 ± 0.167        | 0.654 ± 0.175        | 0.643 ± 0.138        | 0.511 ± 0.184        | 0.394 ± 0.208        | 0.643 ± 0.129        | 0.629 ± 0.196        | 0.635 ± 0.163        | <b>0.815 ± 0.203</b> | 0.589 ± 0.151        |
| glass-0-1-6-vs-2               | 0.650 ± 0.201        | 0.590 ± 0.234        | 0.650 ± 0.201        | 0.650 ± 0.201        | 0.590 ± 0.234        | 0.720 ± 0.290        | 0.650 ± 0.201        | 0.590 ± 0.234        | 0.590 ± 0.258        | <b>0.805 ± 0.313</b> | 0.665 ± 0.300        |
| glass2                         | 0.458 ± 0.275        | 0.415 ± 0.259        | 0.471 ± 0.274        | 0.449 ± 0.273        | 0.472 ± 0.278        | 0.539 ± 0.297        | 0.471 ± 0.285        | 0.458 ± 0.275        | 0.482 ± 0.281        | <b>0.764 ± 0.264</b> | 0.569 ± 0.267        |
| glass5                         | <b>0.802 ± 0.195</b> | 0.721 ± 0.238        | 0.786 ± 0.225        | 0.771 ± 0.250        | 0.769 ± 0.214        | 0.798 ± 0.233        | 0.769 ± 0.171        | <b>0.802 ± 0.195</b> | 0.660 ± 0.140        | 0.752 ± 0.101        | 0.640 ± 0.179        |
| glass5                         | 0.645 ± 0.217        | 0.625 ± 0.211        | 0.665 ± 0.203        | 0.665 ± 0.203        | 0.645 ± 0.217        | 0.755 ± 0.298        | 0.645 ± 0.217        | 0.645 ± 0.217        | 0.600 ± 0.210        | <b>0.795 ± 0.258</b> | 0.770 ± 0.273        |
| page-blocks1-3-vs-4            | 0.836 ± 0.228        | 0.593 ± 0.143        | 0.843 ± 0.223        | 0.843 ± 0.223        | 0.836 ± 0.237        | 0.836 ± 0.098        | 0.807 ± 0.233        | 0.836 ± 0.228        | 0.750 ± 0.215        | <b>0.879 ± 0.150</b> | 0.729 ± 0.280        |
| yeast-0-5-6-7-9-vs-4           | 0.604 ± 0.098        | 0.556 ± 0.066        | 0.635 ± 0.087        | 0.600 ± 0.097        | 0.600 ± 0.101        | 0.639 ± 0.065        | 0.604 ± 0.082        | 0.600 ± 0.099        | 0.440 ± 0.135        | <b>0.980 ± 0.020</b> | 0.543 ± 0.140        |
| yeast-1-2-8-9-vs-7             | 0.380 ± 0.090        | 0.393 ± 0.101        | 0.373 ± 0.100        | 0.380 ± 0.090        | 0.447 ± 0.149        | 0.380 ± 0.112        | 0.387 ± 0.078        | 0.293 ± 0.205        | <b>1.000 ± 0.000</b> | 0.400 ± 0.219        | 0.387 ± 0.078        |
| yeast-1-4-5-8-vs-7             | 0.327 ± 0.101        | 0.280 ± 0.107        | 0.307 ± 0.100        | 0.313 ± 0.090        | 0.320 ± 0.107        | 0.353 ± 0.099        | 0.300 ± 0.095        | 0.327 ± 0.101        | 0.293 ± 0.177        | <b>1.000 ± 0.000</b> | 0.533 ± 0.240        |
| yeast-1-vs-7                   | 0.540 ± 0.076        | 0.467 ± 0.089        | 0.547 ± 0.085        | 0.547 ± 0.078        | 0.467 ± 0.140        | 0.520 ± 0.115        | 0.533 ± 0.079        | 0.540 ± 0.076        | 0.320 ± 0.157        | <b>0.973 ± 0.080</b> | 0.547 ± 0.286        |
| yeast-2-vs-4                   | 0.781 ± 0.088        | 0.761 ± 0.088        | 0.792 ± 0.088        | 0.792 ± 0.088        | 0.792 ± 0.108        | 0.788 ± 0.068        | 0.781 ± 0.101        | 0.781 ± 0.088        | 0.531 ± 0.111        | <b>0.978 ± 0.120</b> | 0.749 ± 0.107        |
| yeast-2-vs-8                   | 0.550 ± 0.120        | 0.550 ± 0.102        | 0.570 ± 0.110        | 0.530 ± 0.100        | 0.610 ± 0.137        | 0.560 ± 0.162        | 0.560 ± 0.120        | 0.550 ± 0.120        | 0.560 ± 0.162        | <b>0.940 ± 0.120</b> | 0.510 ± 0.164        |
| yeast4                         | 0.619 ± 0.071        | 0.550 ± 0.066        | 0.628 ± 0.087        | 0.623 ± 0.066        | 0.604 ± 0.074        | 0.689 ± 0.077        | 0.600 ± 0.054        | 0.619 ± 0.071        | 0.420 ± 0.097        | <b>0.980 ± 0.020</b> | 0.595 ± 0.215        |
| yeast5                         | 0.882 ± 0.058        | 0.873 ± 0.060        | 0.882 ± 0.058        | 0.882 ± 0.058        | 0.886 ± 0.055        | 0.936 ± 0.051        | 0.882 ± 0.058        | 0.882 ± 0.058        | 0.823 ± 0.136        | <b>1.000 ± 0.000</b> | 0.845 ± 0.140        |
| yeast6                         | 0.727 ± 0.109        | 0.716 ± 0.101        | 0.739 ± 0.119        | 0.727 ± 0.107        | 0.726 ± 0.107        | 0.824 ± 0.073        | 0.727 ± 0.118        | 0.727 ± 0.109        | 0.531 ± 0.111        | <b>0.978 ± 0.067</b> | 0.675 ± 0.085        |
| cleveand4-vs-4                 | 0.448 ± 0.177        | 0.369 ± 0.163        | 0.464 ± 0.203        | 0.481 ± 0.199        | 0.417 ± 0.169        | <b>0.719 ± 0.104</b> | 0.448 ± 0.177        | 0.448 ± 0.177        | 0.495 ± 0.104        | 0.502 ± 0.228        | 0.438 ± 0.211        |
| ecoli-0-1-4-7-vs-2-3-5-6       | 0.771 ± 0.066        | 0.717 ± 0.041        | 0.765 ± 0.066        | 0.758 ± 0.037        | 0.772 ± 0.072        | <b>0.826 ± 0.069</b> | 0.779 ± 0.071        | 0.771 ± 0.066        | 0.540 ± 0.273        | 0.788 ± 0.152        | 0.726 ± 0.135        |
| ecoli-0-1-vs-2-3-5             | 0.733 ± 0.090        | 0.750 ± 0.091        | 0.750 ± 0.091        | 0.750 ± 0.091        | 0.733 ± 0.090        | 0.825 ± 0.115        | 0.750 ± 0.091        | 0.733 ± 0.090        | 0.608 ± 0.179        | <b>0.833 ± 0.139</b> | 0.717 ± 0.107        |
| ecoli-0-2-6-7-vs-3-5           | 0.700 ± 0.108        | 0.700 ± 0.122        | 0.709 ± 0.114        | 0.709 ± 0.106        | 0.736 ± 0.125        | <b>0.809 ± 0.125</b> | 0.700 ± 0.122        | 0.700 ± 0.108        | 0.673 ± 0.101        | 0.764 ± 0.153        | 0.764 ± 0.109        |
| ecoli-0-6-7-vs-3-5             | 0.718 ± 0.111        | 0.718 ± 0.111        | 0.718 ± 0.111        | 0.736 ± 0.118        | 0.736 ± 0.125        | <b>0.800 ± 0.134</b> | 0.718 ± 0.125        | 0.718 ± 0.111        | 0.709 ± 0.106        | 0.764 ± 0.153        | 0.764 ± 0.116        |
| ecoli-0-6-7-vs-2               | 0.750 ± 0.092        | 0.750 ± 0.092        | 0.750 ± 0.092        | 0.750 ± 0.092        | 0.830 ± 0.110        | 0.750 ± 0.092        | 0.750 ± 0.092        | 0.750 ± 0.092        | 0.740 ± 0.092        | <b>0.870 ± 0.149</b> | 0.790 ± 0.181        |
| glass-0-1-4-6-vs-2             | 0.568 ± 0.209        | 0.456 ± 0.262        | 0.592 ± 0.235        | 0.553 ± 0.274        | 0.471 ± 0.243        | 0.411 ± 0.185        | 0.589 ± 0.267        | 0.568 ± 0.209        | 0.561 ± 0.263        | <b>0.869 ± 0.165</b> | 0.658 ± 0.313        |
| glass-0-1-5-vs-2               | 0.554 ± 0.135        | 0.433 ± 0.142        | 0.565 ± 0.130        | 0.578 ± 0.159        | 0.453 ± 0.132        | 0.290 ± 0.098        | 0.532 ± 0.150        | 0.554 ± 0.135        | 0.562 ± 0.205        | <b>0.811 ± 0.155</b> | 0.572 ± 0.203        |
| yeast-0-2-5-6-vs-3-7-8-9       | 0.635 ± 0.064        | 0.388 ± 0.087        | 0.635 ± 0.056        | 0.651 ± 0.057        | 0.621 ± 0.065        | 0.657 ± 0.061        | 0.643 ± 0.063        | 0.637 ± 0.062        | 0.592 ± 0.074        | <b>0.729 ± 0.078</b> | 0.621 ± 0.096        |
| yeast-0-5-5-vs-7-8             | 0.560 ± 0.082        | 0.316 ± 0.070        | 0.556 ± 0.081        | 0.556 ± 0.095        | 0.548 ± 0.084        | 0.428 ± 0.123        | 0.552 ± 0.071        | 0.560 ± 0.082        | 0.512 ± 0.172        | <b>0.976 ± 0.072</b> | 0.504 ± 0.140        |
| abalone-17-vs-7-8-10           | 0.717 ± 0.043        | 0.528 ± 0.079        | 0.707 ± 0.047        | 0.707 ± 0.069        | 0.693 ± 0.054        | 0.724 ± 0.056        | 0.721 ± 0.052        | 0.714 ± 0.041        | 0.410 ± 0.174        | <b>0.793 ± 0.109</b> | 0.717 ± 0.159        |
| abalone-19-vs-10-11-12-13      | 0.419 ± 0.158        | 0.231 ± 0.125        | 0.425 ± 0.155        | 0.425 ± 0.142        | 0.387 ± 0.136        | 0.463 ± 0.163        | 0.406 ± 0.164        | 0.419 ± 0.158        | 0.412 ± 0.233        | <b>0.694 ± 0.141</b> | 0.488 ± 0.214        |
| abalone-20-vs-8-9-10           | 0.654 ± 0.099        | 0.577 ± 0.086        | 0.662 ± 0.086        | 0.646 ± 0.099        | 0.631 ± 0.108        | 0.823 ± 0.103        | 0.638 ± 0.114        | 0.654 ± 0.099        | 0.523 ± 0.238        | <b>0.838 ± 0.086</b> | 0.546 ± 0.221        |
| abalone-21-vs-2                | 0.614 ± 0.239        | 0.589 ± 0.243        | 0.614 ± 0.239        | 0.629 ± 0.241        | 0.614 ± 0.248        | <b>0.700 ± 0.135</b> | 0.614 ± 0.239        | 0.614 ± 0.239        | 0.614 ± 0.293        | 0.571 ± 0.221        | 0.557 ± 0.289        |
| flav-F                         | 0.604 ± 0.093        | 0.419 ± 0.095        | 0.600 ± 0.097        | 0.609 ± 0.105        | 0.577 ± 0.090        | 0.674 ± 0.117        | 0.600 ± 0.095        | 0.604 ± 0.093        | 0.525 ± 0.200        | <b>0.949 ± 0.052</b> | 0.605 ± 0.163        |
| kidcup-buffer-overflow-vs-back | 0.987 ± 0.027        | 0.993 ± 0.020        | 0.987 ± 0.027        | 0.987 ± 0.027        | 0.987 ± 0.027        | <b>1.000 ± 0.000</b> | 0.987 ± 0.027        | 0.987 ± 0.027        | 0.993 ± 0.020        | 0.993 ± 0.020        | 0.993 ± 0.020        |
| kidcup-rookit-innp-vs-back     | <b>0.955 ± 0.045</b> | <b>0.955 ± 0.045</b> | <b>0.955 ± 0.045</b> | <b>0.955 ± 0.045</b> | <b>0.955 ± 0.045</b> | <b>0.955 ± 0.045</b> | 0.945 ± 0.060        | <b>0.955 ± 0.045</b> | <b>0.955 ± 0.045</b> | <b>0.955 ± 0.045</b> | <b>0.955 ± 0.045</b> |
| kr-vs-k-zero-vs-eight          | 0.880 ± 0.102        | 0.872 ± 0.113        | 0.880 ± 0.102        | 0.880 ± 0.102        | 0.872 ± 0.113        | <b>0.918 ± 0.099</b> | 0.872 ± 0.113        | 0.880 ± 0.102        | 0.752 ± 0.146        | 0.733 ± 0.071        | 0.753 ± 0.195        |
| poker-8-9-vs-2                 | 0.297 ± 0.142        | 0.201 ± 0.135        | 0.280 ± 0.126        | 0.272 ± 0.121        | 0.263 ± 0.155        | 0.452 ± 0.167        | 0.273 ± 0.105        | 0.297 ± 0.142        | 0.397 ± 0.160        | <b>0.480 ± 0.180</b> | 0.333 ± 0.194        |
| poker-8-9-vs-4                 | 0.514 ± 0.127        | 0.449 ± 0.095        | 0.514 ± 0.127        | 0.489 ± 0.107        | 0.465 ± 0.132        | 0.888 ± 0.112        | 0.499 ± 0.172        | 0.514 ± 0.127        | 0.960 ± 0.084        | <b>0.975 ± 0.075</b> | 0.960 ± 0.084        |
| poker-8-vs-6                   | 0.567 ± 0.146        | 0.425 ± 0.118        | 0.567 ± 0.146        | 0.575 ± 0.131        | 0.493 ± 0.161        | <b>0.944 ± 0.102</b> | 0.575 ± 0.131        | 0.567 ± 0.146        | 0.740 ± 0.245        | 0.900 ± 0.213        | 0.694 ± 0.250        |
| poker-9-vs-7                   | 0.275 ± 0.208        | 0.250 ± 0.194        | 0.275 ± 0.208        | 0.275 ± 0.208        | 0.275 ± 0.261        | 0.375 ± 0.280        | 0.225 ± 0.175        | 0.275 ± 0.208        | <b>0.500 ± 0.296</b> | 0.425 ± 0.275        | 0.375 ± 0.301        |
| winequality-red-3-vs-2         | 0.100 ± 0.100        | 0.100 ± 0.100        | 0.100 ± 0.100        | 0.100 ± 0.100        | 0.100 ± 0.100        | <b>0.240 ± 0.120</b> | 0.120 ± 0.098        | 0.100 ± 0.100        | 0.140 ± 0.180        | <b>0.240 ± 0.196</b> | 0.120 ± 0.160        |
| winequality-red-4              | 0.393 ± 0.088        | 0.309 ± 0.063        | 0.392 ± 0.084        | 0.404 ± 0.084        | 0.351 ± 0.069        | 0.313 ± 0.062        | 0.397 ± 0.084        | 0.393 ± 0.088        | 0.250 ± 0.150        | <b>0.652 ± 0.151</b> | 0.412 ± 0.097        |
| winequality-red-8-vs-6         | 0.289 ± 0.074        | 0.267 ± 0.054        | 0.289 ± 0.074        | 0.289 ± 0.074        | 0.300 ± 0.071        | 0.344 ± 0.136        | 0.311 ± 0.067        | 0.289 ± 0.074        | 0.378 ± 0.102        | <b>0.444 ± 0.217</b> | 0.333 ± 0.149        |
| winequality-white-3-9-vs-2     | 0.181 ± 0.109        | 0.085 ± 0.093        | 0.174 ± 0.123        | 0.174 ± 0.102        | 0.112 ± 0.081        | <b>0.410 ± 0.087</b> | 0.166 ± 0.106        | 0.181 ± 0.109        | 0.167 ± 0.113        | 0.372 ± 0.212        | 0.248 ± 0.145        |
| winequality-white-3-vs-7       | 0.110 ± 0.104        | 0.090 ± 0.087        | 0.110 ± 0.143        | 0.140 ± 0.143        | 0.120 ± 0.087        | <b>0.530 ± 0.155</b> | 0.120 ± 0.098        | 0.110 ± 0.104        | 0.210 ± 0.145        | 0.370 ± 0.290        | 0.260 ± 0.191        |
| winequality-white-9-vs-4       | <b>0.633 ± 0.267</b> | <b>0.633 ± 0.267</b> | <b>0.633 ± 0.267</b> | 0.400 ± 0.436        | <b>0.633 ± 0.267</b> | 0.400 ± 0.436        | <b>0.633 ± 0.267</b> | <b>0.633 ± 0.267</b> | 0.483 ± 0.361        | 0.483 ± 0.361        | 0.483 ± 0.361        |
| ecol1                          | 0.896 ± 0.050        | 0.839 ± 0.035        | 0.891 ± 0.047        | 0.883 ± 0.040        | 0.883 ± 0.040        | 0.925 ± 0.027        | 0.886 ± 0.047        | 0.896 ± 0.050        | 0.904 ± 0.073        | <b>0.967 ± 0.062</b> | 0.891 ± 0.046        |
| ecol2                          | 0.915 ± 0.054        | 0.892 ± 0.073        | 0.915 ± 0.054        | 0.912 ± 0.057        | 0.912 ± 0.057        | 0.923 ± 0.042        | 0.919 ± 0.047        | 0.912 ± 0.057        | 0.838 ± 0.080        | <b>0.935 ± 0.106</b> | 0.877 ± 0.066        |
| ecol3                          | 0.880 ± 0.054        | 0.869 ± 0.056        | 0.880 ± 0.054        | 0.880 ± 0.047        | 0.891 ± 0.054        | 0.920 ± 0.038        | 0.874 ± 0.050        | 0.886 ± 0.051        | 0.816 ± 0.122        | <b>0.954 ± 0.035</b> | 0.752 ± 0.171        |
| glass0                         | 0.860 ± 0.064        | 0.811 ± 0.063        | 0.863 ± 0.063        | 0.877 ± 0.070        | 0.866 ± 0.063        | 0.869 ± 0.055        | 0.874 ± 0.056        | 0.866 ± 0.063        | 0.894 ± 0.066        | <b>0.951 ± 0.057</b> | 0.826 ± 0.106        |
| glass1                         | 0.758 ± 0.078        | 0.771 ± 0.098        | 0.745 ± 0.081        | 0.745 ± 0.105        | 0.763 ± 0.096        | 0.674 ± 0.159        | 0.750 ± 0.102        | 0.753 ± 0.078        | 0.711 ± 0.159        | <b>0.945 ± 0.034</b> | 0.739 ± 0.072        |
| haberman                       | 0.475 ± 0.121        | 0.440 ± 0.081        | 0.479 ± 0.097        | 0.484 ± 0.122        | 0.492 ± 0.129        | 0.458 ± 0.104        | 0.494 ± 0.067        | 0.470 ± 0.122        | 0.408 ± 0.097        | <b>0.562 ± 0.139</b> | 0.495 ± 0.088        |
| page-blocks0                   | 0.916 ± 0.019        | 0.824 ± 0.018        | 0.914 ± 0.017        | 0.891 ± 0.023        | 0.915 ± 0.019        | 0.719 ± 0.033        | 0.915 ± 0.020        | 0.916 ± 0.019        | 0.830 ± 0.088        | <b>0.963 ± 0.015</b> | 0.810 ± 0.071        |
| ptms                           | 0.708 ± 0.047        | 0.635 ± 0.057        | 0.705 ± 0.049        | 0.694 ± 0.037        | 0.707 ± 0.036        | 0.688 ± 0.024        | 0.711 ± 0.051        | 0.712 ± 0.044        | 0.565 ± 0.030        | <b>0.844 ± 0.038</b> | 0.674 ± 0.063        |
| vehicle1                       | 0.825 ± 0.086        | 0.655 ± 0.058        | 0.827 ± 0.077        | 0.822 ± 0.078        | 0.836 ± 0.058        | 0.830 ± 0.080        | 0.821 ± 0.067        | 0.831 ± 0.084        | 0.515 ± 0.139        | <b>0.897 ± 0.038</b> | 0.796 ± 0.122        |
| vehicle1                       | 0.845 ± 0.056        | 0.648 ± 0.053        | 0.850 ± 0.053        | 0.866 ± 0.056        | 0.848 ± 0.040        | 0.844 ± 0.052        | 0.845 ± 0.040        | 0.847 ± 0.055        | 0.390 ± 0.075        | <b>0.881 ± 0.068</b> | 0.799 ± 0.137        |
| yeast1                         | 0.716 ± 0.033        | 0.544 ± 0.029        | 0.758 ± 0.024        | 0.724 ± 0.043        | 0.705 ± 0.040        | 0.668 ± 0.016        | 0.715 ± 0.038        | 0.717 ± 0.033        | 0.536 ± 0.134        | <b>1.000 ± 0.000</b> | 0.749 ± 0.141        |
| yeast3                         | 0.843 ± 0.050        | 0.802 ± 0.053        | 0.845 ± 0.045        | 0.842 ± 0.059        | 0.833 ± 0.047        | 0.853 ± 0.041        | 0.849 ± 0.052        | 0.843 ± 0.050        | 0.761 ± 0.046        | <b>0.994 ± 0.006</b> | 0.826 ±              |



Table 9. KNN – AUC

| Dataset name                   | SMOTE                | polynom-fit-SMOTE    | Lee                  | SMOBD                | G-SMOTE              | LVQ-SMOTE            | Assembled-SMOTE      | SMOTE-TonekLinks     | JFOTS_pr             | JFOTS_rc      | JFOTS_prom    |
|--------------------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|---------------|---------------|
| abalone19                      | 0.568 ± 0.069        | 0.519 ± 0.028        | 0.568 ± 0.069        | 0.567 ± 0.069        | 0.549 ± 0.043        | 0.554 ± 0.047        | 0.565 ± 0.062        | <b>0.568 ± 0.069</b> | 0.520 ± 0.030        | 0.497 ± 0.011 | 0.520 ± 0.032 |
| abalone18                      | 0.719 ± 0.033        | 0.704 ± 0.044        | 0.704 ± 0.034        | 0.709 ± 0.040        | 0.700 ± 0.048        | 0.692 ± 0.053        | 0.714 ± 0.041        | <b>0.720 ± 0.033</b> | 0.645 ± 0.066        | 0.572 ± 0.063 | 0.627 ± 0.058 |
| ecoli-0-1-3-7-vs-2-6           | 0.834 ± 0.075        | <b>0.835 ± 0.076</b> | 0.834 ± 0.074        | 0.833 ± 0.074        | <b>0.835 ± 0.076</b> | 0.833 ± 0.076        | 0.834 ± 0.075        | 0.834 ± 0.075        | 0.800 ± 0.108        | 0.800 ± 0.106 | 0.820 ± 0.096 |
| glass0-1-6-vs-2                | 0.718 ± 0.086        | 0.682 ± 0.045        | 0.713 ± 0.081        | 0.714 ± 0.084        | 0.700 ± 0.056        | 0.657 ± 0.063        | <b>0.725 ± 0.082</b> | 0.717 ± 0.085        | 0.638 ± 0.040        | 0.606 ± 0.086 | 0.660 ± 0.084 |
| glass0-1-6-vs-2                | 0.914 ± 0.097        | <b>0.915 ± 0.098</b> | 0.914 ± 0.097        | 0.911 ± 0.098        | 0.894 ± 0.135        | 0.881 ± 0.120        | 0.914 ± 0.097        | 0.914 ± 0.097        | 0.878 ± 0.118        | 0.842 ± 0.192 | 0.801 ± 0.162 |
| glass0-1-6-vs-2                | 0.630 ± 0.134        | 0.653 ± 0.137        | 0.637 ± 0.151        | <b>0.644 ± 0.141</b> | 0.630 ± 0.135        | 0.627 ± 0.112        | 0.635 ± 0.145        | 0.628 ± 0.133        | 0.640 ± 0.098        | 0.583 ± 0.096 | 0.596 ± 0.080 |
| glass0                         | 0.901 ± 0.057        | <b>0.903 ± 0.068</b> | 0.876 ± 0.056        | 0.885 ± 0.056        | 0.879 ± 0.071        | 0.863 ± 0.038        | 0.892 ± 0.048        | 0.901 ± 0.057        | 0.818 ± 0.061        | 0.752 ± 0.141 | 0.755 ± 0.062 |
| glass0                         | 0.931 ± 0.110        | <b>0.933 ± 0.110</b> | 0.921 ± 0.116        | 0.931 ± 0.110        | 0.922 ± 0.108        | 0.862 ± 0.108        | 0.931 ± 0.110        | 0.931 ± 0.110        | 0.821 ± 0.114        | 0.867 ± 0.136 | 0.831 ± 0.130 |
| page-blocks-1-3-vs-0           | <b>0.983 ± 0.023</b> | 0.978 ± 0.024        | 0.982 ± 0.023        | <b>0.983 ± 0.023</b> | 0.949 ± 0.095        | 0.980 ± 0.016        | 0.979 ± 0.025        | <b>0.983 ± 0.023</b> | 0.850 ± 0.104        | 0.835 ± 0.086 | 0.888 ± 0.110 |
| yeast-0-5-6-7-9-vs-4           | 0.727 ± 0.045        | <b>0.740 ± 0.038</b> | 0.730 ± 0.040        | 0.733 ± 0.043        | 0.729 ± 0.053        | 0.731 ± 0.045        | 0.718 ± 0.035        | 0.725 ± 0.043        | 0.671 ± 0.068        | 0.498 ± 0.002 | 0.643 ± 0.072 |
| yeast-1-2-8-9-vs-7             | 0.672 ± 0.048        | <b>0.685 ± 0.045</b> | 0.668 ± 0.040        | 0.663 ± 0.040        | 0.649 ± 0.065        | 0.660 ± 0.052        | 0.667 ± 0.051        | 0.672 ± 0.048        | 0.586 ± 0.044        | 0.500 ± 0.000 | 0.567 ± 0.049 |
| yeast-1-4-5-8-vs-7             | 0.611 ± 0.040        | <b>0.614 ± 0.044</b> | 0.594 ± 0.052        | 0.571 ± 0.051        | 0.577 ± 0.042        | 0.605 ± 0.039        | 0.611 ± 0.038        | 0.611 ± 0.038        | 0.536 ± 0.036        | 0.500 ± 0.000 | 0.521 ± 0.048 |
| yeast-1-vs-7                   | 0.723 ± 0.036        | 0.723 ± 0.042        | 0.726 ± 0.035        | <b>0.732 ± 0.042</b> | 0.702 ± 0.055        | 0.690 ± 0.033        | 0.701 ± 0.051        | 0.722 ± 0.035        | 0.608 ± 0.035        | 0.409 ± 0.002 | 0.575 ± 0.076 |
| yeast-2-vs-4                   | 0.873 ± 0.030        | 0.863 ± 0.035        | 0.869 ± 0.033        | 0.871 ± 0.030        | 0.873 ± 0.029        | 0.861 ± 0.034        | <b>0.875 ± 0.027</b> | 0.874 ± 0.030        | 0.842 ± 0.048        | 0.603 ± 0.158 | 0.830 ± 0.047 |
| yeast-2-vs-8                   | 0.802 ± 0.051        | <b>0.810 ± 0.046</b> | 0.794 ± 0.045        | 0.801 ± 0.053        | 0.803 ± 0.044        | 0.806 ± 0.057        | 0.798 ± 0.051        | 0.801 ± 0.050        | 0.772 ± 0.051        | 0.534 ± 0.105 | 0.802 ± 0.062 |
| yeast4                         | 0.729 ± 0.025        | 0.733 ± 0.034        | 0.729 ± 0.027        | 0.729 ± 0.027        | 0.713 ± 0.033        | 0.727 ± 0.045        | <b>0.735 ± 0.039</b> | 0.729 ± 0.025        | 0.692 ± 0.034        | 0.500 ± 0.000 | 0.640 ± 0.051 |
| yeast5                         | 0.929 ± 0.036        | 0.920 ± 0.035        | 0.925 ± 0.036        | 0.922 ± 0.035        | 0.910 ± 0.034        | <b>0.933 ± 0.049</b> | 0.929 ± 0.034        | 0.929 ± 0.036        | 0.865 ± 0.054        | 0.500 ± 0.000 | 0.817 ± 0.129 |
| yeast6                         | 0.814 ± 0.044        | 0.816 ± 0.038        | 0.815 ± 0.044        | 0.813 ± 0.044        | 0.812 ± 0.046        | <b>0.829 ± 0.035</b> | 0.809 ± 0.043        | 0.814 ± 0.044        | 0.733 ± 0.073        | 0.500 ± 0.000 | 0.775 ± 0.039 |
| cleveand-0-vs-4                | 0.876 ± 0.009        | 0.868 ± 0.036        | 0.881 ± 0.029        | 0.875 ± 0.068        | 0.873 ± 0.033        | 0.813 ± 0.009        | <b>0.883 ± 0.024</b> | 0.876 ± 0.009        | 0.738 ± 0.086        | 0.719 ± 0.135 | 0.711 ± 0.117 |
| ecoli-0-1-4-7-vs-2-3-5-6       | 0.883 ± 0.018        | 0.878 ± 0.024        | 0.880 ± 0.018        | 0.876 ± 0.018        | <b>0.884 ± 0.022</b> | 0.877 ± 0.028        | 0.882 ± 0.021        | 0.884 ± 0.018        | 0.730 ± 0.121        | 0.568 ± 0.099 | 0.803 ± 0.098 |
| ecoli-0-1-vs-2-3-5             | 0.884 ± 0.024        | <b>0.887 ± 0.026</b> | 0.878 ± 0.025        | 0.880 ± 0.025        | 0.879 ± 0.024        | 0.875 ± 0.042        | 0.886 ± 0.030        | 0.884 ± 0.024        | 0.821 ± 0.104        | 0.689 ± 0.160 | 0.820 ± 0.066 |
| ecoli-0-2-6-7-vs-3-5           | 0.839 ± 0.051        | 0.839 ± 0.051        | 0.842 ± 0.061        | 0.840 ± 0.053        | <b>0.843 ± 0.057</b> | 0.840 ± 0.038        | 0.838 ± 0.040        | 0.839 ± 0.050        | 0.810 ± 0.041        | 0.588 ± 0.122 | 0.840 ± 0.027 |
| ecoli-0-6-7-vs-3-5             | 0.851 ± 0.054        | 0.855 ± 0.053        | 0.854 ± 0.064        | <b>0.858 ± 0.050</b> | 0.847 ± 0.061        | 0.841 ± 0.052        | 0.851 ± 0.052        | 0.852 ± 0.053        | 0.813 ± 0.051        | 0.614 ± 0.143 | 0.799 ± 0.079 |
| ecoli-0-6-7-vs-2               | 0.866 ± 0.047        | 0.865 ± 0.056        | 0.867 ± 0.045        | 0.867 ± 0.053        | 0.870 ± 0.046        | <b>0.870 ± 0.036</b> | 0.865 ± 0.049        | 0.867 ± 0.048        | 0.830 ± 0.065        | 0.509 ± 0.123 | 0.865 ± 0.063 |
| glass0-1-1-4-6-vs-2            | <b>0.674 ± 0.098</b> | 0.665 ± 0.088        | 0.671 ± 0.103        | 0.673 ± 0.099        | 0.645 ± 0.101        | 0.624 ± 0.058        | 0.666 ± 0.105        | 0.669 ± 0.095        | 0.549 ± 0.071        | 0.582 ± 0.110 | 0.567 ± 0.085 |
| glass0-1-5-vs-2                | 0.676 ± 0.059        | 0.674 ± 0.055        | <b>0.684 ± 0.063</b> | 0.669 ± 0.065        | 0.667 ± 0.084        | 0.631 ± 0.060        | 0.683 ± 0.059        | 0.675 ± 0.060        | 0.657 ± 0.088        | 0.622 ± 0.128 | 0.595 ± 0.111 |
| yeast-0-2-5-6-vs-3-7-8-9       | 0.772 ± 0.031        | 0.768 ± 0.025        | <b>0.775 ± 0.028</b> | 0.772 ± 0.026        | 0.773 ± 0.030        | 0.764 ± 0.023        | 0.772 ± 0.031        | 0.773 ± 0.032        | 0.684 ± 0.075        | 0.533 ± 0.058 | 0.683 ± 0.036 |
| yeast-0-5-5-9-vs-7-8           | 0.679 ± 0.037        | 0.675 ± 0.035        | 0.679 ± 0.037        | 0.670 ± 0.043        | 0.678 ± 0.037        | <b>0.681 ± 0.050</b> | 0.669 ± 0.030        | 0.680 ± 0.038        | 0.569 ± 0.083        | 0.502 ± 0.011 | 0.561 ± 0.065 |
| abalone-17-vs-7-8-9-10         | 0.749 ± 0.046        | 0.719 ± 0.034        | <b>0.752 ± 0.045</b> | 0.745 ± 0.046        | 0.713 ± 0.044        | 0.739 ± 0.042        | 0.743 ± 0.044        | 0.749 ± 0.046        | 0.606 ± 0.033        | 0.582 ± 0.077 | 0.612 ± 0.072 |
| abalone-19-vs-10-11-12-13      | 0.583 ± 0.037        | 0.551 ± 0.025        | 0.587 ± 0.040        | <b>0.589 ± 0.047</b> | 0.554 ± 0.046        | 0.569 ± 0.045        | 0.570 ± 0.044        | 0.582 ± 0.037        | 0.535 ± 0.032        | 0.515 ± 0.033 | 0.523 ± 0.044 |
| abalone-20-vs-8-9-10           | 0.750 ± 0.055        | 0.692 ± 0.025        | 0.758 ± 0.062        | <b>0.761 ± 0.067</b> | 0.667 ± 0.058        | 0.709 ± 0.052        | 0.743 ± 0.082        | 0.746 ± 0.058        | 0.635 ± 0.056        | 0.549 ± 0.077 | 0.638 ± 0.049 |
| abalone-21-vs-2                | <b>0.830 ± 0.084</b> | 0.771 ± 0.079        | 0.815 ± 0.074        | 0.815 ± 0.076        | 0.797 ± 0.080        | 0.794 ± 0.065        | 0.822 ± 0.080        | 0.830 ± 0.084        | 0.703 ± 0.095        | 0.667 ± 0.121 | 0.710 ± 0.089 |
| flare-F                        | 0.693 ± 0.044        | 0.674 ± 0.035        | 0.690 ± 0.050        | 0.693 ± 0.044        | 0.671 ± 0.043        | 0.693 ± 0.036        | <b>0.694 ± 0.041</b> | 0.692 ± 0.044        | 0.552 ± 0.042        | 0.504 ± 0.009 | 0.566 ± 0.053 |
| kddcup-buffer-overflow-vs-back | 0.957 ± 0.047        | 0.957 ± 0.047        | 0.957 ± 0.047        | 0.957 ± 0.047        | 0.947 ± 0.050        | <b>0.960 ± 0.042</b> | 0.947 ± 0.043        | 0.957 ± 0.047        | 0.957 ± 0.045        | 0.957 ± 0.045 | 0.957 ± 0.045 |
| kddcup-rookite-innp-vs-back    | <b>0.973 ± 0.022</b> | 0.964 ± 0.040        | <b>0.973 ± 0.022</b> | <b>0.973 ± 0.022</b> | 0.955 ± 0.045        | 0.945 ± 0.027        | 0.955 ± 0.050        | <b>0.973 ± 0.022</b> | 0.961 ± 0.040        | 0.964 ± 0.040 | 0.964 ± 0.040 |
| kr-vs-k-zero-vs-eight          | 0.940 ± 0.050        | 0.930 ± 0.053        | 0.944 ± 0.050        | <b>0.944 ± 0.049</b> | 0.926 ± 0.061        | 0.944 ± 0.060        | 0.929 ± 0.060        | 0.940 ± 0.050        | 0.757 ± 0.163        | 0.500 ± 0.000 | 0.749 ± 0.175 |
| poker-8-9-vs-5                 | 0.609 ± 0.059        | 0.578 ± 0.036        | 0.617 ± 0.065        | 0.608 ± 0.062        | 0.548 ± 0.044        | <b>0.643 ± 0.048</b> | 0.614 ± 0.061        | 0.609 ± 0.059        | 0.546 ± 0.069        | 0.514 ± 0.036 | 0.550 ± 0.075 |
| poker-8-9-vs-6                 | 0.949 ± 0.040        | 0.912 ± 0.033        | 0.949 ± 0.039        | 0.949 ± 0.039        | 0.904 ± 0.053        | 0.976 ± 0.027        | 0.937 ± 0.031        | 0.949 ± 0.040        | <b>0.988 ± 0.038</b> | 0.976 ± 0.048 | 0.976 ± 0.048 |
| poker-8-9-vs-7                 | 0.942 ± 0.061        | 0.851 ± 0.057        | 0.942 ± 0.061        | 0.942 ± 0.061        | 0.875 ± 0.098        | <b>0.978 ± 0.018</b> | 0.932 ± 0.078        | 0.942 ± 0.061        | 0.906 ± 0.122        | 0.931 ± 0.113 | 0.864 ± 0.167 |
| poker-9-vs-7                   | 0.839 ± 0.152        | <b>0.839 ± 0.152</b> | 0.839 ± 0.152        | 0.816 ± 0.135        | 0.795 ± 0.125        | 0.828 ± 0.145        | 0.793 ± 0.152        | 0.839 ± 0.152        | 0.789 ± 0.233        | 0.806 ± 0.192 | 0.721 ± 0.197 |
| winequality-red-3-vs-2         | 0.584 ± 0.061        | 0.577 ± 0.053        | 0.584 ± 0.061        | 0.583 ± 0.061        | 0.578 ± 0.053        | <b>0.592 ± 0.064</b> | 0.575 ± 0.052        | 0.584 ± 0.061        | 0.543 ± 0.069        | 0.493 ± 0.033 | 0.560 ± 0.058 |
| winequality-red-4              | 0.597 ± 0.027        | 0.583 ± 0.043        | 0.596 ± 0.029        | 0.596 ± 0.021        | 0.588 ± 0.036        | 0.557 ± 0.024        | <b>0.602 ± 0.024</b> | 0.597 ± 0.026        | 0.540 ± 0.025        | 0.521 ± 0.038 | 0.558 ± 0.047 |
| winequality-red-8-vs-6-7       | 0.530 ± 0.064        | <b>0.543 ± 0.068</b> | 0.536 ± 0.063        | 0.537 ± 0.063        | 0.536 ± 0.055        | 0.530 ± 0.060        | 0.534 ± 0.055        | 0.531 ± 0.064        | 0.542 ± 0.058        | 0.534 ± 0.070 | 0.536 ± 0.045 |
| winequality-red-8-vs-6         | <b>0.635 ± 0.050</b> | 0.630 ± 0.052        | 0.624 ± 0.055        | 0.635 ± 0.051        | 0.595 ± 0.050        | 0.600 ± 0.052        | 0.632 ± 0.043        | 0.635 ± 0.050        | 0.593 ± 0.064        | 0.584 ± 0.077 | 0.616 ± 0.088 |
| winequality-white-3-9-vs-2     | <b>0.618 ± 0.030</b> | 0.613 ± 0.033        | 0.617 ± 0.035        | 0.617 ± 0.034        | 0.573 ± 0.029        | 0.602 ± 0.053        | 0.599 ± 0.034        | <b>0.618 ± 0.030</b> | 0.547 ± 0.046        | 0.518 ± 0.029 | 0.575 ± 0.054 |
| winequality-white-3-vs-7       | 0.630 ± 0.086        | 0.573 ± 0.064        | 0.633 ± 0.092        | 0.619 ± 0.094        | 0.577 ± 0.058        | <b>0.644 ± 0.064</b> | 0.630 ± 0.090        | 0.630 ± 0.086        | 0.585 ± 0.074        | 0.509 ± 0.089 | 0.570 ± 0.054 |
| winequality-white-9-vs-4       | 0.878 ± 0.091        | <b>0.882 ± 0.095</b> | 0.878 ± 0.091        | 0.766 ± 0.164        | 0.879 ± 0.092        | 0.774 ± 0.172        | 0.878 ± 0.091        | 0.878 ± 0.091        | 0.726 ± 0.177        | 0.726 ± 0.177 | 0.726 ± 0.177 |
| zoo-0                          | <b>0.827 ± 0.157</b> | <b>0.827 ± 0.157</b> | <b>0.827 ± 0.157</b> | 0.717 ± 0.191        | <b>0.827 ± 0.157</b> | 0.692 ± 0.167        | <b>0.827 ± 0.157</b> | <b>0.827 ± 0.157</b> | 0.630 ± 0.130        | 0.630 ± 0.130 | 0.630 ± 0.130 |
| ecoli1                         | 0.864 ± 0.026        | 0.863 ± 0.019        | 0.868 ± 0.030        | <b>0.871 ± 0.024</b> | 0.870 ± 0.026        | 0.864 ± 0.028        | 0.863 ± 0.033        | 0.867 ± 0.023        | 0.802 ± 0.055        | 0.563 ± 0.127 | 0.840 ± 0.047 |
| ecoli2                         | 0.915 ± 0.028        | <b>0.922 ± 0.025</b> | 0.913 ± 0.027        | 0.914 ± 0.027        | 0.919 ± 0.029        | 0.911 ± 0.021        | 0.914 ± 0.027        | 0.915 ± 0.028        | 0.837 ± 0.086        | 0.584 ± 0.138 | 0.863 ± 0.061 |
| ecoli3                         | 0.866 ± 0.019        | 0.857 ± 0.022        | <b>0.868 ± 0.015</b> | 0.859 ± 0.025        | 0.854 ± 0.035        | 0.851 ± 0.028        | 0.861 ± 0.018        | 0.865 ± 0.015        | 0.800 ± 0.053        | 0.575 ± 0.119 | 0.749 ± 0.100 |
| glass0                         | 0.791 ± 0.035        | 0.799 ± 0.036        | 0.786 ± 0.034        | 0.794 ± 0.028        | 0.797 ± 0.027        | 0.787 ± 0.041        | 0.800 ± 0.030        | <b>0.800 ± 0.034</b> | 0.778 ± 0.047        | 0.700 ± 0.116 | 0.778 ± 0.050 |
| glass1                         | 0.738 ± 0.047        | <b>0.749 ± 0.053</b> | 0.745 ± 0.044        | 0.748 ± 0.037        | 0.739 ± 0.042        | 0.740 ± 0.031        | 0.736 ± 0.030        | 0.738 ± 0.031        | 0.698 ± 0.068        | 0.531 ± 0.081 | 0.685 ± 0.054 |
| haberman                       | 0.601 ± 0.034        | <b>0.616 ± 0.036</b> | 0.587 ± 0.044        | 0.588 ± 0.016        | 0.588 ± 0.039        | 0.587 ± 0.030        | 0.584 ± 0.029        | 0.599 ± 0.030        | 0.600 ± 0.024        | 0.535 ± 0.074 | 0.599 ± 0.054 |
| page-blocks0                   | 0.929 ± 0.010        | 0.911 ± 0.012        | 0.928 ± 0.012        | 0.921 ± 0.012        | 0.924 ± 0.011        | 0.887 ± 0.016        | <b>0.931 ± 0.009</b> | 0.930 ± 0.010        | 0.895 ± 0.018        | 0.905 ± 0.012 | 0.899 ± 0.015 |
| ptms                           | 0.655 ± 0.021        | <b>0.708 ± 0.018</b> | 0.686 ± 0.013        | 0.687 ± 0.016        | 0.682 ± 0.017        | 0.690 ± 0.021        | 0.693 ± 0.017        | 0.693 ± 0.024        | 0.686 ± 0.020        | 0.616 ± 0.053 | 0.692 ± 0.021 |
| vehicle1                       | 0.723 ± 0.026        | <b>0.740 ± 0.017</b> | 0.720 ± 0.024        | 0.736 ± 0.025        | 0.725 ± 0.019        | 0.720 ± 0.022        | 0.731 ± 0.022        | 0.724 ± 0.027        | 0.667 ± 0.022        | 0.716 ± 0.030 | 0.699 ± 0.027 |
| vehicle3                       | 0.708 ± 0.018        | 0.700 ± 0.029        | 0.712 ± 0.019        | <b>0.718 ± 0.025</b> | 0.710 ± 0.017        | 0.692 ± 0.023        | 0.712 ± 0.020        | 0.706 ± 0.020        | 0.656 ± 0.019        | 0.696 ± 0.023 | 0             |

Table 10. CART – BAC

| Dataset name                  | SMOTE                | polynom-fit-SMOTE    | Lee                  | SMOBD                | G-SMOTE              | LVQ-SMOTE            | Assembled-SMOTE      | SMOTE-TonekLinks     | JFOTS_pr             | JFOTS_rc             | JFOTS_prom           |
|-------------------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| abalone19                     | 0.561 ± 0.042        | 0.503 ± 0.015        | 0.546 ± 0.038        | <b>0.565 ± 0.042</b> | 0.545 ± 0.052        | 0.537 ± 0.051        | 0.555 ± 0.047        | 0.561 ± 0.042        | 0.505 ± 0.019        | 0.540 ± 0.045        | 0.547 ± 0.070        |
| abalone19-18                  | 0.605 ± 0.059        | 0.609 ± 0.040        | 0.672 ± 0.051        | <b>0.685 ± 0.051</b> | 0.653 ± 0.033        | 0.684 ± 0.082        | 0.649 ± 0.058        | 0.607 ± 0.062        | 0.655 ± 0.041        | 0.561 ± 0.075        | 0.613 ± 0.061        |
| ecoli-0-1-3-7-vs-2-6          | 0.790 ± 0.115        | <b>0.815 ± 0.063</b> | 0.790 ± 0.115        | 0.790 ± 0.115        | <b>0.815 ± 0.063</b> | 0.776 ± 0.100        | 0.790 ± 0.115        | 0.790 ± 0.115        | 0.694 ± 0.110        | 0.609 ± 0.088        | 0.713 ± 0.115        |
| glass0-1-6-vs-2               | 0.570 ± 0.054        | <b>0.663 ± 0.054</b> | 0.642 ± 0.063        | 0.609 ± 0.057        | 0.588 ± 0.108        | 0.633 ± 0.108        | 0.628 ± 0.055        | 0.653 ± 0.106        | 0.576 ± 0.043        | 0.608 ± 0.052        |                      |
| glass0-1-6-vs-2               | 0.800 ± 0.133        | 0.858 ± 0.133        | 0.860 ± 0.133        | 0.794 ± 0.185        | <b>0.894 ± 0.133</b> | 0.860 ± 0.133        | 0.860 ± 0.133        | 0.765 ± 0.151        | 0.883 ± 0.154        | 0.763 ± 0.158        |                      |
| glass2                        | 0.591 ± 0.121        | 0.563 ± 0.077        | 0.577 ± 0.111        | 0.610 ± 0.101        | 0.599 ± 0.108        | 0.582 ± 0.130        | 0.575 ± 0.094        | 0.606 ± 0.124        | 0.580 ± 0.076        | 0.550 ± 0.077        | <b>0.610 ± 0.091</b> |
| glass5                        | 0.854 ± 0.086        | 0.835 ± 0.053        | 0.854 ± 0.087        | 0.845 ± 0.086        | <b>0.857 ± 0.082</b> | 0.808 ± 0.090        | 0.853 ± 0.090        | 0.797 ± 0.109        | 0.764 ± 0.140        | 0.770 ± 0.114        |                      |
| glass5                        | 0.851 ± 0.154        | 0.849 ± 0.153        | 0.851 ± 0.154        | 0.851 ± 0.154        | 0.862 ± 0.160        | <b>0.935 ± 0.107</b> | 0.851 ± 0.154        | 0.851 ± 0.154        | 0.836 ± 0.150        | 0.805 ± 0.127        | 0.791 ± 0.156        |
| page-blocks1-3-vs-4           | 0.909 ± 0.059        | 0.940 ± 0.060        | 0.966 ± 0.068        | 0.964 ± 0.068        | 0.972 ± 0.063        | 0.962 ± 0.059        | <b>0.983 ± 0.052</b> | 0.969 ± 0.059        | 0.902 ± 0.062        | 0.884 ± 0.100        | 0.924 ± 0.089        |
| yeast-0-5-6-7-9-vs-4          | 0.696 ± 0.057        | 0.680 ± 0.048        | <b>0.713 ± 0.047</b> | 0.694 ± 0.056        | 0.677 ± 0.039        | 0.712 ± 0.055        | 0.688 ± 0.037        | 0.662 ± 0.046        | 0.496 ± 0.008        | 0.675 ± 0.058        |                      |
| yeast-1-2-8-9-vs-7            | 0.588 ± 0.028        | 0.578 ± 0.047        | 0.590 ± 0.030        | 0.578 ± 0.047        | 0.599 ± 0.051        | <b>0.647 ± 0.062</b> | 0.586 ± 0.023        | 0.604 ± 0.044        | 0.554 ± 0.057        | 0.511 ± 0.004        | 0.561 ± 0.041        |
| yeast-1-4-5-8-vs-7            | 0.532 ± 0.049        | <b>0.554 ± 0.026</b> | 0.535 ± 0.064        | 0.523 ± 0.045        | 0.537 ± 0.053        | 0.518 ± 0.041        | 0.551 ± 0.029        | 0.526 ± 0.048        | 0.506 ± 0.033        | 0.505 ± 0.003        | 0.538 ± 0.056        |
| yeast-1-vs-7                  | 0.613 ± 0.057        | 0.623 ± 0.049        | 0.601 ± 0.067        | 0.635 ± 0.052        | 0.598 ± 0.055        | <b>0.650 ± 0.038</b> | 0.616 ± 0.048        | 0.609 ± 0.053        | 0.584 ± 0.046        | 0.511 ± 0.029        | 0.599 ± 0.068        |
| yeast-2-vs-4                  | 0.845 ± 0.046        | 0.840 ± 0.055        | 0.865 ± 0.043        | 0.861 ± 0.068        | 0.854 ± 0.053        | 0.862 ± 0.041        | <b>0.865 ± 0.042</b> | 0.839 ± 0.037        | 0.815 ± 0.050        | 0.583 ± 0.141        | 0.810 ± 0.033        |
| yeast-2-vs-8                  | 0.730 ± 0.089        | 0.762 ± 0.068        | 0.775 ± 0.104        | <b>0.778 ± 0.084</b> | 0.760 ± 0.070        | 0.751 ± 0.045        | 0.747 ± 0.065        | 0.756 ± 0.049        | 0.520 ± 0.031        | 0.743 ± 0.049        |                      |
| yeast4                        | 0.675 ± 0.044        | 0.637 ± 0.032        | 0.689 ± 0.061        | 0.690 ± 0.049        | 0.633 ± 0.041        | <b>0.719 ± 0.055</b> | 0.674 ± 0.083        | 0.678 ± 0.046        | 0.676 ± 0.050        | 0.497 ± 0.009        | 0.606 ± 0.055        |
| yeast5                        | 0.862 ± 0.073        | 0.846 ± 0.068        | 0.846 ± 0.064        | 0.859 ± 0.068        | 0.855 ± 0.065        | <b>0.878 ± 0.049</b> | 0.868 ± 0.057        | 0.864 ± 0.076        | 0.841 ± 0.048        | 0.510 ± 0.001        | 0.777 ± 0.113        |
| yeast6                        | 0.730 ± 0.066        | 0.692 ± 0.047        | 0.725 ± 0.067        | 0.747 ± 0.062        | 0.743 ± 0.047        | <b>0.768 ± 0.051</b> | 0.742 ± 0.059        | 0.731 ± 0.064        | 0.736 ± 0.058        | 0.521 ± 0.033        | 0.687 ± 0.050        |
| cleveand0-vs-4                | <b>0.814 ± 0.055</b> | 0.731 ± 0.129        | 0.785 ± 0.103        | 0.782 ± 0.083        | 0.750 ± 0.127        | 0.745 ± 0.048        | 0.801 ± 0.063        | <b>0.814 ± 0.055</b> | 0.756 ± 0.084        | 0.736 ± 0.097        | 0.690 ± 0.070        |
| ecoli-0-1-4-7-vs-2-3-5-6      | 0.792 ± 0.071        | 0.794 ± 0.048        | 0.822 ± 0.039        | 0.790 ± 0.069        | 0.776 ± 0.066        | 0.822 ± 0.050        | <b>0.827 ± 0.054</b> | 0.806 ± 0.077        | 0.721 ± 0.104        | 0.550 ± 0.083        | 0.745 ± 0.084        |
| ecoli-0-2-6-7-vs-3-5          | 0.799 ± 0.045        | 0.787 ± 0.062        | 0.809 ± 0.054        | 0.822 ± 0.075        | <b>0.829 ± 0.057</b> | 0.827 ± 0.063        | 0.778 ± 0.066        | 0.802 ± 0.047        | 0.773 ± 0.057        | 0.566 ± 0.120        | 0.804 ± 0.060        |
| ecoli-0-6-7-vs-3-5            | 0.795 ± 0.069        | 0.794 ± 0.048        | 0.810 ± 0.052        | 0.813 ± 0.063        | 0.832 ± 0.070        | <b>0.834 ± 0.060</b> | 0.790 ± 0.056        | 0.796 ± 0.069        | 0.773 ± 0.056        | 0.594 ± 0.147        | 0.767 ± 0.098        |
| ecoli-0-6-7-vs-2              | 0.849 ± 0.068        | 0.840 ± 0.074        | 0.828 ± 0.068        | 0.839 ± 0.071        | 0.837 ± 0.064        | 0.842 ± 0.041        | 0.825 ± 0.060        | 0.839 ± 0.070        | <b>0.850 ± 0.078</b> | 0.574 ± 0.127        | 0.835 ± 0.094        |
| glass0-1-4-6-vs-2             | 0.595 ± 0.051        | 0.560 ± 0.082        | 0.610 ± 0.072        | 0.591 ± 0.062        | 0.613 ± 0.070        | <b>0.638 ± 0.077</b> | 0.558 ± 0.066        | 0.576 ± 0.062        | 0.558 ± 0.071        | 0.557 ± 0.034        | 0.569 ± 0.069        |
| glass0-1-5-vs-2               | 0.689 ± 0.067        | 0.597 ± 0.068        | 0.677 ± 0.082        | <b>0.713 ± 0.110</b> | 0.631 ± 0.069        | 0.605 ± 0.090        | 0.649 ± 0.079        | 0.678 ± 0.062        | 0.598 ± 0.070        | 0.536 ± 0.072        | 0.561 ± 0.088        |
| yeast-0-2-5-6-vs-3-7-8-9      | 0.713 ± 0.037        | 0.712 ± 0.051        | <b>0.735 ± 0.038</b> | 0.714 ± 0.027        | 0.717 ± 0.033        | 0.728 ± 0.046        | 0.709 ± 0.037        | 0.700 ± 0.034        | 0.646 ± 0.062        | 0.541 ± 0.061        | 0.643 ± 0.035        |
| yeast-0-5-5-9-vs-7-8          | 0.598 ± 0.035        | <b>0.638 ± 0.041</b> | 0.621 ± 0.044        | 0.623 ± 0.050        | 0.614 ± 0.049        | 0.629 ± 0.050        | 0.615 ± 0.028        | 0.630 ± 0.031        | 0.550 ± 0.059        | 0.512 ± 0.016        | 0.563 ± 0.054        |
| abalone-17-vs-3-8-9-10        | 0.644 ± 0.041        | 0.642 ± 0.033        | 0.643 ± 0.042        | 0.660 ± 0.045        | 0.645 ± 0.045        | <b>0.667 ± 0.024</b> | 0.646 ± 0.039        | 0.642 ± 0.036        | 0.633 ± 0.055        | 0.569 ± 0.057        | 0.603 ± 0.051        |
| abalone-19-vs-10-11-12-13     | 0.556 ± 0.041        | 0.517 ± 0.024        | 0.556 ± 0.050        | 0.548 ± 0.035        | 0.541 ± 0.055        | <b>0.576 ± 0.050</b> | 0.557 ± 0.034        | 0.560 ± 0.028        | 0.523 ± 0.039        | 0.514 ± 0.041        | 0.527 ± 0.058        |
| abalone-20-vs-8-9-10          | 0.696 ± 0.050        | 0.584 ± 0.065        | 0.674 ± 0.065        | 0.682 ± 0.050        | 0.630 ± 0.071        | <b>0.769 ± 0.061</b> | 0.681 ± 0.059        | 0.696 ± 0.050        | 0.621 ± 0.054        | 0.589 ± 0.042        | 0.606 ± 0.068        |
| abalone-21-vs-2               | 0.726 ± 0.121        | 0.655 ± 0.074        | 0.699 ± 0.092        | 0.691 ± 0.116        | 0.736 ± 0.075        | <b>0.790 ± 0.070</b> | 0.692 ± 0.105        | 0.734 ± 0.126        | 0.712 ± 0.125        | 0.614 ± 0.092        | 0.649 ± 0.081        |
| flame-F                       | 0.558 ± 0.035        | 0.581 ± 0.030        | 0.570 ± 0.045        | 0.578 ± 0.038        | 0.588 ± 0.025        | 0.580 ± 0.034        | 0.576 ± 0.048        | 0.577 ± 0.035        | 0.636 ± 0.083        | 0.575 ± 0.068        | <b>0.666 ± 0.078</b> |
| kddcup-bufferoverflow-vs-back | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> |
| kddcup-rookits-innp-vs-back   | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | 0.982 ± 0.036        | 0.982 ± 0.036        | 0.982 ± 0.036        |
| kr-vs-karozs-vs-right         | 0.961 ± 0.050        | 0.965 ± 0.051        | 0.965 ± 0.052        | 0.965 ± 0.051        | <b>0.968 ± 0.042</b> | 0.966 ± 0.071        | 0.954 ± 0.058        | 0.961 ± 0.050        | 0.771 ± 0.082        | 0.702 ± 0.042        | 0.858 ± 0.115        |
| poker-8-9-vs-6                | 0.572 ± 0.039        | 0.558 ± 0.049        | 0.566 ± 0.032        | 0.572 ± 0.032        | 0.545 ± 0.051        | <b>0.585 ± 0.070</b> | 0.543 ± 0.028        | 0.572 ± 0.039        | 0.531 ± 0.048        | 0.517 ± 0.054        | 0.522 ± 0.031        |
| poker-8-9-vs-6                | 0.680 ± 0.087        | 0.824 ± 0.141        | 0.670 ± 0.096        | 0.644 ± 0.084        | 0.750 ± 0.143        | 0.628 ± 0.096        | 0.657 ± 0.105        | 0.680 ± 0.087        | 0.999 ± 0.001        | 0.999 ± 0.001        | <b>0.999 ± 0.001</b> |
| poker-8-vs-6                  | 0.685 ± 0.101        | 0.685 ± 0.163        | 0.703 ± 0.123        | 0.685 ± 0.095        | 0.691 ± 0.098        | 0.669 ± 0.162        | 0.677 ± 0.140        | 0.685 ± 0.101        | <b>0.931 ± 0.085</b> | <b>0.931 ± 0.084</b> | 0.832 ± 0.165        |
| poker-9-vs-7                  | 0.564 ± 0.082        | 0.564 ± 0.063        | 0.564 ± 0.082        | 0.562 ± 0.084        | 0.586 ± 0.095        | 0.613 ± 0.127        | 0.563 ± 0.081        | <b>0.688 ± 0.209</b> | 0.647 ± 0.162        | 0.621 ± 0.158        |                      |
| winequality-red-3-vs-2        | 0.516 ± 0.043        | 0.529 ± 0.066        | 0.506 ± 0.049        | 0.518 ± 0.045        | 0.528 ± 0.089        | <b>0.565 ± 0.056</b> | 0.525 ± 0.064        | 0.516 ± 0.043        | 0.519 ± 0.047        | 0.528 ± 0.049        | 0.557 ± 0.062        |
| winequality-red-4             | 0.552 ± 0.048        | 0.528 ± 0.030        | <b>0.576 ± 0.029</b> | 0.572 ± 0.036        | 0.564 ± 0.040        | 0.571 ± 0.036        | 0.548 ± 0.017        | 0.552 ± 0.050        | 0.537 ± 0.031        | 0.531 ± 0.031        | 0.547 ± 0.038        |
| winequality-red-8-vs-6-7      | 0.543 ± 0.041        | 0.557 ± 0.050        | 0.550 ± 0.039        | <b>0.562 ± 0.051</b> | 0.556 ± 0.054        | 0.555 ± 0.043        | 0.545 ± 0.048        | 0.543 ± 0.041        | 0.544 ± 0.043        | 0.529 ± 0.053        | 0.539 ± 0.039        |
| winequality-red-8-vs-6        | 0.609 ± 0.052        | 0.608 ± 0.064        | 0.605 ± 0.046        | 0.603 ± 0.067        | 0.579 ± 0.047        | 0.614 ± 0.058        | <b>0.630 ± 0.056</b> | 0.609 ± 0.052        | 0.577 ± 0.044        | 0.566 ± 0.063        | 0.571 ± 0.058        |
| winequality-white-3-9-vs-2    | 0.566 ± 0.063        | 0.544 ± 0.047        | 0.540 ± 0.054        | 0.546 ± 0.056        | 0.533 ± 0.061        | <b>0.643 ± 0.056</b> | 0.535 ± 0.037        | 0.566 ± 0.063        | 0.528 ± 0.031        | 0.509 ± 0.019        | 0.525 ± 0.021        |
| winequality-white-3-vs-2      | 0.539 ± 0.045        | 0.557 ± 0.060        | 0.576 ± 0.061        | 0.567 ± 0.055        | 0.590 ± 0.046        | <b>0.737 ± 0.066</b> | 0.524 ± 0.047        | 0.539 ± 0.045        | 0.546 ± 0.032        | 0.578 ± 0.076        | 0.574 ± 0.066        |
| winequality-white-9-vs-4      | 0.722 ± 0.163        | 0.672 ± 0.100        | 0.721 ± 0.162        | 0.721 ± 0.162        | <b>0.722 ± 0.162</b> | 0.692 ± 0.141        | 0.721 ± 0.162        | 0.722 ± 0.163        | 0.573 ± 0.112        | 0.573 ± 0.112        | 0.573 ± 0.112        |
| zoo-3                         | 0.658 ± 0.189        | 0.608 ± 0.123        | 0.665 ± 0.158        | 0.650 ± 0.156        | 0.635 ± 0.160        | <b>0.738 ± 0.159</b> | 0.639 ± 0.122        | 0.658 ± 0.189        | 0.503 ± 0.127        | 0.509 ± 0.127        | 0.509 ± 0.127        |
| ecoli1                        | 0.841 ± 0.056        | 0.818 ± 0.039        | 0.827 ± 0.049        | 0.836 ± 0.039        | 0.837 ± 0.041        | 0.842 ± 0.033        | 0.822 ± 0.048        | <b>0.860 ± 0.041</b> | 0.751 ± 0.067        | 0.556 ± 0.105        | 0.798 ± 0.050        |
| ecoli2                        | 0.855 ± 0.028        | 0.858 ± 0.035        | 0.850 ± 0.033        | 0.852 ± 0.036        | 0.854 ± 0.029        | <b>0.866 ± 0.037</b> | 0.852 ± 0.041        | 0.855 ± 0.028        | 0.777 ± 0.083        | 0.578 ± 0.113        | 0.818 ± 0.056        |
| ecoli3                        | 0.745 ± 0.049        | 0.748 ± 0.065        | 0.768 ± 0.067        | 0.772 ± 0.049        | 0.766 ± 0.053        | <b>0.833 ± 0.049</b> | 0.775 ± 0.051        | 0.760 ± 0.050        | 0.554 ± 0.100        | 0.753 ± 0.110        |                      |
| glass0                        | 0.767 ± 0.036        | 0.770 ± 0.060        | 0.772 ± 0.038        | 0.787 ± 0.033        | 0.781 ± 0.041        | <b>0.802 ± 0.041</b> | 0.794 ± 0.040        | 0.774 ± 0.025        | 0.746 ± 0.051        | 0.673 ± 0.069        | 0.731 ± 0.068        |
| glass1                        | 0.719 ± 0.029        | <b>0.733 ± 0.031</b> | 0.727 ± 0.054        | 0.726 ± 0.058        | 0.714 ± 0.045        | 0.717 ± 0.046        | 0.726 ± 0.081        | 0.716 ± 0.033        | 0.676 ± 0.081        | 0.591 ± 0.058        | 0.658 ± 0.049        |
| haberman                      | 0.584 ± 0.035        | 0.567 ± 0.025        | 0.573 ± 0.041        | 0.563 ± 0.045        | 0.572 ± 0.052        | 0.577 ± 0.038        | 0.565 ± 0.055        | <b>0.596 ± 0.045</b> | 0.584 ± 0.025        | 0.536 ± 0.058        | 0.573 ± 0.052        |
| page-blocks0                  | 0.917 ± 0.012        | 0.898 ± 0.010        | 0.915 ± 0.010        | 0.914 ± 0.008        | 0.907 ± 0.009        | 0.900 ± 0.009        | <b>0.919 ± 0.011</b> | 0.917 ± 0.008        | 0.907 ± 0.013        | 0.895 ± 0.014        | 0.890 ± 0.019        |
| ptms                          | 0.665 ± 0.020        | 0.673 ± 0.023        | 0.660 ± 0.021        | 0.665 ± 0.015        | 0.663 ± 0.024        | <b>0.678 ± 0.027</b> | 0.658 ± 0.021        | 0.670 ± 0.025        | 0.659 ± 0.030        | 0.600 ± 0.041        | 0.665 ± 0.027        |
| vehicle1                      | 0.698 ± 0.024        | 0.698 ± 0.021        | 0.680 ± 0.032        | 0.671 ± 0.025        | 0.664 ± 0.028        | <b>0.685 ± 0.023</b> | 0.671 ± 0.024        | 0.676 ± 0.014        | 0.663 ± 0.019        | 0.655 ± 0.021        | 0.667 ± 0.032        |
| vehicle1                      | 0.666 ± 0.023        | <b>0.690 ± 0.023</b> | 0.655 ± 0.023        | 0.677 ± 0.028        | 0.671 ± 0.019        | 0.685 ± 0.014        | 0.674 ± 0.020        | 0.667 ± 0.013        | 0.662 ± 0.038        | 0.680 ± 0.023        | 0.666 ± 0.028        |
| yeast1                        | 0.643 ± 0.017        | <b>0.653 ± 0.017</b> | 0.653 ± 0.016        | 0.650 ± 0.011        | 0.649 ± 0.012        | 0.653 ± 0.017        | 0.652 ± 0.021        | 0.641 ± 0.009        | 0.610 ± 0.045        | 0.507 ± 0.002        | 0.588 ± 0.036        |
| yeast3                        | 0.864 ± 0.029        | 0.832 ± 0.033        | 0.863 ± 0.0          |                      |                      |                      |                      |                      |                      |                      |                      |

Table 11. SVM – BAC

| Dataset name                  | SMOTE                | polynom-fit-SMOTE    | Lee                  | SMOBD                | G-SMOTE              | LVQ-SMOTE            | Assembled-SMOTE      | SMOTE-TonekLinks     | JFOTS_pr             | JFOTS_rc             | JFOTS_prom    |
|-------------------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|---------------|
| absalone19                    | 0.593 ± 0.063        | 0.569 ± 0.048        | 0.593 ± 0.057        | 0.599 ± 0.065        | 0.602 ± 0.063        | <b>0.655 ± 0.056</b> | 0.593 ± 0.062        | 0.593 ± 0.063        | 0.620 ± 0.082        | 0.597 ± 0.083        | 0.610 ± 0.047 |
| absalone19                    | 0.740 ± 0.052        | 0.698 ± 0.036        | 0.745 ± 0.035        | 0.750 ± 0.042        | 0.738 ± 0.055        | <b>0.782 ± 0.043</b> | 0.739 ± 0.038        | 0.739 ± 0.051        | 0.678 ± 0.060        | 0.661 ± 0.091        | 0.668 ± 0.075 |
| ecoli-0-1-3-7-vs-2-6          | 0.845 ± 0.075        | 0.847 ± 0.078        | 0.838 ± 0.074        | 0.842 ± 0.076        | 0.845 ± 0.079        | 0.828 ± 0.078        | 0.844 ± 0.075        | 0.845 ± 0.075        | 0.840 ± 0.110        | <b>0.861 ± 0.092</b> |               |
| glass-0-1-6-vs-2              | 0.740 ± 0.099        | 0.697 ± 0.081        | <b>0.744 ± 0.090</b> | 0.740 ± 0.079        | 0.690 ± 0.076        | 0.622 ± 0.083        | 0.743 ± 0.072        | 0.740 ± 0.100        | 0.724 ± 0.090        | 0.673 ± 0.092        | 0.694 ± 0.065 |
| glass-0-1-6-vs-2              | 0.820 ± 0.098        | 0.792 ± 0.117        | 0.820 ± 0.098        | 0.820 ± 0.098        | 0.792 ± 0.116        | 0.843 ± 0.147        | 0.820 ± 0.098        | 0.784 ± 0.123        | <b>0.809 ± 0.153</b> | 0.808 ± 0.146        |               |
| glass2                        | 0.642 ± 0.143        | 0.638 ± 0.134        | 0.648 ± 0.140        | 0.637 ± 0.137        | 0.651 ± 0.137        | <b>0.677 ± 0.158</b> | 0.648 ± 0.146        | 0.641 ± 0.143        | 0.626 ± 0.130        | 0.631 ± 0.118        | 0.643 ± 0.119 |
| glass5                        | <b>0.892 ± 0.094</b> | 0.852 ± 0.116        | 0.883 ± 0.108        | 0.876 ± 0.121        | 0.876 ± 0.103        | 0.870 ± 0.111        | 0.876 ± 0.082        | <b>0.892 ± 0.094</b> | 0.821 ± 0.068        | 0.788 ± 0.142        | 0.810 ± 0.085 |
| glass5                        | 0.818 ± 0.106        | 0.809 ± 0.103        | 0.828 ± 0.099        | 0.828 ± 0.099        | 0.817 ± 0.106        | 0.854 ± 0.155        | 0.818 ± 0.106        | 0.818 ± 0.106        | 0.788 ± 0.098        | <b>0.870 ± 0.119</b> | 0.847 ± 0.117 |
| page-blocks1-3-vs-4           | 0.904 ± 0.111        | 0.791 ± 0.070        | <b>0.908 ± 0.112</b> | 0.907 ± 0.112        | 0.903 ± 0.119        | 0.796 ± 0.048        | 0.888 ± 0.116        | 0.904 ± 0.114        | 0.819 ± 0.074        | 0.862 ± 0.073        | 0.835 ± 0.124 |
| yeast-0-5-6-7-9-vs-4          | 0.749 ± 0.047        | 0.741 ± 0.037        | 0.762 ± 0.040        | 0.752 ± 0.049        | 0.747 ± 0.055        | <b>0.765 ± 0.030</b> | 0.749 ± 0.041        | 0.746 ± 0.047        | 0.696 ± 0.066        | 0.496 ± 0.008        | 0.706 ± 0.068 |
| yeast-1-2-8-9-vs-7            | 0.606 ± 0.041        | 0.594 ± 0.054        | 0.608 ± 0.050        | 0.605 ± 0.049        | 0.620 ± 0.049        | <b>0.673 ± 0.069</b> | 0.605 ± 0.053        | 0.610 ± 0.038        | 0.566 ± 0.052        | 0.511 ± 0.004        | 0.584 ± 0.039 |
| yeast-1-4-5-8-vs-7            | 0.571 ± 0.051        | 0.568 ± 0.051        | 0.564 ± 0.047        | 0.561 ± 0.037        | 0.577 ± 0.047        | <b>0.600 ± 0.034</b> | 0.557 ± 0.035        | 0.571 ± 0.050        | 0.543 ± 0.035        | 0.505 ± 0.003        | 0.576 ± 0.050 |
| yeast-1-vs-7                  | 0.690 ± 0.041        | 0.671 ± 0.046        | 0.691 ± 0.039        | <b>0.692 ± 0.043</b> | 0.664 ± 0.066        | 0.686 ± 0.064        | 0.683 ± 0.040        | 0.689 ± 0.041        | 0.596 ± 0.086        | 0.512 ± 0.030        | 0.630 ± 0.066 |
| yeast-2-vs-4                  | 0.870 ± 0.039        | 0.862 ± 0.040        | 0.873 ± 0.039        | <b>0.875 ± 0.045</b> | 0.871 ± 0.046        | 0.869 ± 0.034        | 0.868 ± 0.046        | 0.870 ± 0.038        | 0.848 ± 0.033        | 0.605 ± 0.174        | 0.855 ± 0.054 |
| yeast-2-vs-4                  | 0.736 ± 0.046        | 0.773 ± 0.051        | 0.747 ± 0.043        | 0.756 ± 0.040        | 0.738 ± 0.047        | <b>0.795 ± 0.064</b> | 0.740 ± 0.063        | 0.736 ± 0.046        | 0.756 ± 0.071        | 0.517 ± 0.025        | 0.692 ± 0.091 |
| yeast4                        | 0.765 ± 0.034        | 0.746 ± 0.032        | 0.769 ± 0.042        | 0.768 ± 0.032        | 0.750 ± 0.033        | <b>0.792 ± 0.032</b> | 0.757 ± 0.024        | 0.764 ± 0.034        | 0.688 ± 0.023        | 0.497 ± 0.009        | 0.744 ± 0.086 |
| yeast5                        | 0.927 ± 0.029        | 0.924 ± 0.030        | 0.927 ± 0.029        | 0.927 ± 0.029        | 0.930 ± 0.028        | <b>0.941 ± 0.024</b> | 0.927 ± 0.029        | 0.927 ± 0.029        | 0.900 ± 0.064        | 0.510 ± 0.001        | 0.860 ± 0.135 |
| yeast6                        | 0.843 ± 0.049        | 0.840 ± 0.046        | 0.848 ± 0.054        | 0.840 ± 0.049        | 0.844 ± 0.049        | <b>0.862 ± 0.034</b> | 0.842 ± 0.053        | 0.843 ± 0.049        | 0.756 ± 0.054        | 0.520 ± 0.031        | 0.816 ± 0.041 |
| cleveland-0-vs-4              | 0.719 ± 0.089        | 0.681 ± 0.082        | 0.728 ± 0.101        | 0.736 ± 0.099        | 0.704 ± 0.084        | <b>0.845 ± 0.052</b> | 0.719 ± 0.088        | 0.719 ± 0.089        | 0.718 ± 0.048        | 0.666 ± 0.101        | 0.680 ± 0.101 |
| ecoli-0-1-4-7-vs-2-3-5-6      | 0.872 ± 0.032        | 0.851 ± 0.020        | 0.867 ± 0.029        | 0.866 ± 0.019        | 0.870 ± 0.033        | <b>0.884 ± 0.033</b> | 0.871 ± 0.037        | 0.872 ± 0.032        | 0.758 ± 0.130        | 0.595 ± 0.135        | 0.836 ± 0.070 |
| ecoli-0-1-vs-2-3-5            | 0.854 ± 0.041        | 0.865 ± 0.044        | 0.863 ± 0.044        | 0.861 ± 0.043        | 0.856 ± 0.041        | <b>0.886 ± 0.047</b> | 0.858 ± 0.045        | 0.853 ± 0.041        | 0.793 ± 0.088        | 0.692 ± 0.199        | 0.820 ± 0.055 |
| ecoli-0-2-6-7-vs-3-5          | 0.834 ± 0.056        | 0.842 ± 0.061        | 0.838 ± 0.056        | 0.843 ± 0.056        | 0.853 ± 0.063        | <b>0.871 ± 0.050</b> | 0.835 ± 0.059        | 0.834 ± 0.056        | 0.827 ± 0.054        | 0.667 ± 0.149        | 0.851 ± 0.053 |
| ecoli-0-6-7-vs-3-5            | 0.846 ± 0.055        | 0.851 ± 0.056        | 0.843 ± 0.056        | 0.857 ± 0.059        | 0.856 ± 0.062        | <b>0.869 ± 0.060</b> | 0.846 ± 0.061        | 0.846 ± 0.055        | 0.845 ± 0.051        | 0.680 ± 0.159        | 0.852 ± 0.052 |
| ecoli-0-6-7-vs-2              | 0.861 ± 0.043        | 0.863 ± 0.043        | 0.863 ± 0.044        | 0.859 ± 0.043        | 0.860 ± 0.042        | <b>0.887 ± 0.047</b> | 0.859 ± 0.044        | 0.862 ± 0.042        | 0.861 ± 0.044        | 0.647 ± 0.163        | 0.884 ± 0.085 |
| glass-0-1-4-6-vs-2            | 0.710 ± 0.101        | 0.669 ± 0.128        | 0.713 ± 0.107        | 0.702 ± 0.131        | 0.665 ± 0.120        | 0.625 ± 0.090        | <b>0.716 ± 0.127</b> | 0.709 ± 0.101        | 0.609 ± 0.085        | 0.662 ± 0.083        | 0.631 ± 0.134 |
| glass-0-1-5-vs-2              | 0.696 ± 0.063        | 0.659 ± 0.067        | 0.701 ± 0.062        | <b>0.711 ± 0.071</b> | 0.671 ± 0.071        | 0.581 ± 0.049        | 0.685 ± 0.068        | 0.696 ± 0.063        | 0.673 ± 0.066        | 0.616 ± 0.162        | 0.641 ± 0.105 |
| yeast-0-2-5-6-vs-3-7-8-9      | 0.782 ± 0.026        | 0.775 ± 0.041        | 0.778 ± 0.032        | 0.788 ± 0.019        | 0.772 ± 0.038        | <b>0.791 ± 0.030</b> | 0.781 ± 0.029        | 0.783 ± 0.026        | 0.733 ± 0.062        | 0.559 ± 0.109        | 0.765 ± 0.050 |
| yeast-0-5-5-9-vs-7-8          | <b>0.696 ± 0.035</b> | 0.640 ± 0.032        | 0.687 ± 0.036        | 0.690 ± 0.045        | 0.689 ± 0.041        | 0.660 ± 0.035        | 0.692 ± 0.034        | 0.695 ± 0.036        | 0.634 ± 0.069        | 0.516 ± 0.027        | 0.588 ± 0.081 |
| absalone-17-vs-7-8-9-10       | 0.814 ± 0.021        | 0.742 ± 0.040        | 0.809 ± 0.024        | 0.810 ± 0.034        | 0.806 ± 0.028        | <b>0.823 ± 0.025</b> | 0.816 ± 0.024        | 0.813 ± 0.019        | 0.677 ± 0.073        | 0.722 ± 0.090        | 0.746 ± 0.114 |
| absalone-19-vs-10-11-12-13    | 0.633 ± 0.062        | 0.582 ± 0.058        | 0.637 ± 0.061        | 0.636 ± 0.052        | 0.629 ± 0.058        | <b>0.659 ± 0.075</b> | 0.629 ± 0.067        | 0.633 ± 0.062        | 0.631 ± 0.085        | 0.594 ± 0.058        | 0.572 ± 0.097 |
| absalone-20-vs-8-9-10         | 0.806 ± 0.048        | 0.775 ± 0.041        | 0.809 ± 0.043        | 0.802 ± 0.047        | 0.797 ± 0.051        | <b>0.884 ± 0.051</b> | 0.798 ± 0.055        | 0.806 ± 0.048        | 0.743 ± 0.109        | 0.742 ± 0.103        | 0.714 ± 0.111 |
| absalone-21-vs-2              | 0.798 ± 0.117        | 0.789 ± 0.120        | 0.798 ± 0.116        | 0.804 ± 0.117        | 0.799 ± 0.122        | <b>0.839 ± 0.070</b> | 0.798 ± 0.117        | 0.799 ± 0.117        | 0.771 ± 0.144        | 0.728 ± 0.125        | 0.771 ± 0.142 |
| flav-F                        | 0.738 ± 0.040        | 0.689 ± 0.046        | 0.732 ± 0.044        | 0.743 ± 0.049        | 0.725 ± 0.043        | <b>0.777 ± 0.047</b> | 0.738 ± 0.045        | 0.738 ± 0.040        | 0.681 ± 0.073        | 0.575 ± 0.068        | 0.727 ± 0.077 |
| kddcup-bufferoverflow-vs-back | 0.993 ± 0.013        | 0.997 ± 0.010        | 0.993 ± 0.013        | 0.993 ± 0.013        | 0.993 ± 0.013        | <b>1.000 ± 0.000</b> | 0.993 ± 0.013        | 0.993 ± 0.013        | 0.997 ± 0.010        | 0.997 ± 0.010        | 0.997 ± 0.010 |
| kddcup-rookite-innp-vs-back   | <b>0.977 ± 0.023</b> | <b>0.977 ± 0.023</b> | <b>0.977 ± 0.023</b> | <b>0.977 ± 0.023</b> | <b>0.977 ± 0.023</b> | <b>0.977 ± 0.023</b> | 0.977 ± 0.020        | <b>0.977 ± 0.023</b> | 0.977 ± 0.042        | 0.977 ± 0.042        | 0.977 ± 0.042 |
| kr-vs-k-zero-vs-eight         | 0.937 ± 0.052        | 0.934 ± 0.057        | 0.937 ± 0.052        | 0.937 ± 0.052        | 0.934 ± 0.057        | <b>0.950 ± 0.050</b> | 0.934 ± 0.057        | 0.937 ± 0.052        | 0.843 ± 0.076        | 0.701 ± 0.041        | 0.831 ± 0.108 |
| poker-8-9-vs-2                | 0.625 ± 0.067        | 0.588 ± 0.066        | 0.617 ± 0.058        | 0.613 ± 0.056        | 0.614 ± 0.073        | <b>0.677 ± 0.074</b> | 0.614 ± 0.047        | 0.625 ± 0.067        | 0.634 ± 0.079        | 0.562 ± 0.085        | 0.575 ± 0.073 |
| poker-8-9-vs-4                | 0.757 ± 0.064        | 0.724 ± 0.047        | 0.757 ± 0.064        | 0.744 ± 0.054        | 0.732 ± 0.066        | 0.937 ± 0.055        | 0.749 ± 0.086        | 0.757 ± 0.064        | 0.379 ± 0.041        | <b>0.986 ± 0.037</b> | 0.979 ± 0.041 |
| poker-8-vs-6                  | 0.783 ± 0.073        | 0.712 ± 0.059        | 0.783 ± 0.073        | 0.789 ± 0.066        | 0.746 ± 0.081        | <b>0.968 ± 0.051</b> | 0.789 ± 0.065        | 0.783 ± 0.073        | 0.869 ± 0.123        | 0.850 ± 0.107        | 0.831 ± 0.152 |
| poker-9-vs-7                  | 0.636 ± 0.104        | 0.636 ± 0.104        | 0.636 ± 0.104        | 0.636 ± 0.130        | 0.680 ± 0.135        | 0.611 ± 0.087        | 0.611 ± 0.087        | 0.636 ± 0.104        | <b>0.729 ± 0.163</b> | 0.686 ± 0.139        | 0.657 ± 0.151 |
| winequality-red-3-vs-2        | 0.540 ± 0.049        | 0.542 ± 0.050        | 0.539 ± 0.049        | 0.540 ± 0.049        | 0.541 ± 0.049        | <b>0.608 ± 0.057</b> | 0.550 ± 0.050        | 0.540 ± 0.049        | 0.539 ± 0.096        | 0.526 ± 0.117        | 0.516 ± 0.082 |
| winequality-red-4             | 0.638 ± 0.034        | 0.611 ± 0.029        | 0.632 ± 0.033        | <b>0.644 ± 0.035</b> | 0.625 ± 0.032        | 0.617 ± 0.029        | 0.641 ± 0.034        | 0.637 ± 0.033        | 0.548 ± 0.026        | 0.599 ± 0.051        | 0.609 ± 0.050 |
| winequality-red-5-vs-6        | 0.571 ± 0.054        | 0.550 ± 0.055        | 0.572 ± 0.054        | 0.571 ± 0.054        | 0.555 ± 0.062        | 0.541 ± 0.063        | 0.557 ± 0.048        | 0.571 ± 0.054        | 0.542 ± 0.067        | 0.518 ± 0.081        | 0.550 ± 0.060 |
| winequality-red-8-vs-6        | 0.614 ± 0.031        | 0.610 ± 0.024        | 0.615 ± 0.031        | 0.615 ± 0.030        | 0.625 ± 0.030        | 0.627 ± 0.056        | 0.625 ± 0.030        | 0.614 ± 0.031        | <b>0.637 ± 0.044</b> | 0.609 ± 0.096        | 0.622 ± 0.079 |
| winequality-white-3-9-vs-2    | 0.565 ± 0.051        | 0.529 ± 0.045        | 0.559 ± 0.057        | 0.560 ± 0.048        | 0.542 ± 0.039        | <b>0.685 ± 0.039</b> | 0.557 ± 0.051        | 0.565 ± 0.051        | 0.519 ± 0.064        | 0.528 ± 0.055        | 0.565 ± 0.055 |
| winequality-white-3-vs-7      | 0.533 ± 0.049        | 0.528 ± 0.041        | 0.549 ± 0.066        | 0.547 ± 0.067        | 0.546 ± 0.039        | <b>0.756 ± 0.077</b> | 0.539 ± 0.047        | 0.533 ± 0.049        | 0.561 ± 0.063        | 0.607 ± 0.121        | 0.594 ± 0.077 |
| winequality-white-9-vs-4      | 0.815 ± 0.134        | 0.815 ± 0.134        | 0.815 ± 0.134        | 0.699 ± 0.218        | <b>0.815 ± 0.134</b> | 0.695 ± 0.214        | 0.815 ± 0.134        | 0.815 ± 0.134        | 0.707 ± 0.175        | 0.707 ± 0.175        | 0.707 ± 0.175 |
| zoo-0                         | <b>0.611 ± 0.162</b> | <b>0.611 ± 0.162</b> | <b>0.611 ± 0.162</b> | 0.597 ± 0.163        | <b>0.611 ± 0.162</b> | 0.595 ± 0.161        | <b>0.611 ± 0.162</b> | <b>0.611 ± 0.162</b> | 0.547 ± 0.174        | 0.547 ± 0.174        | 0.547 ± 0.174 |
| ecoli1                        | 0.885 ± 0.027        | 0.886 ± 0.020        | 0.886 ± 0.020        | 0.884 ± 0.020        | 0.883 ± 0.021        | <b>0.889 ± 0.015</b> | 0.881 ± 0.022        | 0.884 ± 0.026        | 0.875 ± 0.033        | 0.576 ± 0.145        | 0.885 ± 0.015 |
| ecoli2                        | 0.940 ± 0.024        | 0.932 ± 0.014        | 0.941 ± 0.024        | 0.940 ± 0.026        | 0.939 ± 0.025        | 0.938 ± 0.021        | <b>0.942 ± 0.022</b> | 0.939 ± 0.025        | 0.860 ± 0.082        | 0.604 ± 0.146        | 0.894 ± 0.032 |
| ecoli3                        | 0.889 ± 0.022        | 0.893 ± 0.024        | 0.887 ± 0.022        | <b>0.894 ± 0.017</b> | 0.893 ± 0.021        | 0.893 ± 0.019        | 0.887 ± 0.021        | 0.892 ± 0.021        | 0.858 ± 0.056        | 0.602 ± 0.169        | 0.794 ± 0.122 |
| glass0                        | 0.779 ± 0.040        | 0.790 ± 0.020        | 0.785 ± 0.039        | 0.778 ± 0.037        | <b>0.793 ± 0.037</b> | 0.771 ± 0.032        | 0.792 ± 0.034        | 0.778 ± 0.036        | 0.742 ± 0.032        | 0.724 ± 0.065        | 0.751 ± 0.044 |
| glass1                        | 0.701 ± 0.038        | 0.690 ± 0.043        | 0.690 ± 0.038        | 0.696 ± 0.034        | <b>0.703 ± 0.040</b> | 0.677 ± 0.038        | 0.698 ± 0.039        | 0.701 ± 0.044        | 0.694 ± 0.062        | 0.598 ± 0.048        | 0.684 ± 0.029 |
| haberman                      | 0.611 ± 0.026        | <b>0.642 ± 0.035</b> | 0.619 ± 0.026        | 0.597 ± 0.031        | 0.611 ± 0.039        | 0.627 ± 0.027        | 0.614 ± 0.034        | 0.611 ± 0.028        | 0.613 ± 0.039        | 0.559 ± 0.092        | 0.622 ± 0.057 |
| page-blocks0                  | 0.931 ± 0.008        | 0.900 ± 0.008        | 0.931 ± 0.007        | 0.923 ± 0.009        | 0.932 ± 0.008        | 0.848 ± 0.016        | 0.930 ± 0.008        | <b>0.932 ± 0.008</b> | 0.879 ± 0.034        | 0.892 ± 0.025        | 0.882 ± 0.028 |
| ptms                          | 0.727 ± 0.030        | 0.722 ± 0.027        | 0.729 ± 0.023        | 0.726 ± 0.022        | 0.731 ± 0.025        | 0.730 ± 0.017        | <b>0.732 ± 0.028</b> | 0.728 ± 0.032        | 0.706 ± 0.018        | 0.666 ± 0.030        | 0.725 ± 0.022 |
| vehicle1                      | 0.789 ± 0.027        | 0.749 ± 0.023        | 0.790 ± 0.026        | 0.790 ± 0.020        | 0.798 ± 0.016        | 0.792 ± 0.023        | 0.791 ± 0.019        | 0.793 ± 0.025        | 0.695 ± 0.047        | <b>0.804 ± 0.018</b> | 0.779 ± 0.036 |
| vehicle2                      | 0.789 ± 0.022        | 0.734 ± 0.017        | 0.790 ± 0.018        | <b>0.797 ± 0.026</b> | 0.790 ± 0.016        | 0.789 ± 0.023        | 0.789 ± 0.018        | 0.790 ± 0.021        | 0.650 ± 0.021        | 0.789 ± 0.027        | 0.764 ± 0.038 |
| yeast1                        | 0.711 ± 0.013        |                      |                      |                      |                      |                      |                      |                      |                      |                      |               |

Table 12. KNN – G-mean

| Dataset name                   | SMOTE                | polynom-fit-SMOTE    | Lee                  | SMOBD                | G-SMOTE              | LVQ-SMOTE            | Assembled-SMOTE      | SMOTE-TomekLinks     | JFOTS_pr             | JFOTS_rc      | JFOTS_prom    |
|--------------------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|---------------|---------------|
| abalone19                      | 0.392 ± 0.183        | 0.189 ± 0.159        | 0.392 ± 0.183        | 0.392 ± 0.183        | 0.319 ± 0.174        | 0.390 ± 0.196        | 0.388 ± 0.176        | <b>0.392 ± 0.183</b> | 0.187 ± 0.161        | 0.049 ± 0.097 | 0.522 ± 0.183 |
| abalone18                      | 0.096 ± 0.043        | 0.666 ± 0.064        | 0.676 ± 0.047        | 0.681 ± 0.055        | 0.662 ± 0.069        | 0.649 ± 0.054        | 0.687 ± 0.056        | <b>0.696 ± 0.044</b> | 0.531 ± 0.118        | 0.331 ± 0.247 | 0.534 ± 0.088 |
| ecoli-0-1-3-7-vs-2-6           | 0.817 ± 0.096        | <b>0.818 ± 0.097</b> | 0.817 ± 0.096        | 0.816 ± 0.096        | 0.818 ± 0.097        | 0.816 ± 0.097        | 0.817 ± 0.096        | 0.817 ± 0.096        | 0.771 ± 0.135        | 0.771 ± 0.133 | 0.797 ± 0.117 |
| glass-0-1-6-vs-2               | 0.663 ± 0.056        | 0.697 ± 0.092        | 0.699 ± 0.094        | 0.679 ± 0.069        | 0.629 ± 0.089        | <b>0.709 ± 0.095</b> | 0.703 ± 0.095        | 0.703 ± 0.095        | 0.591 ± 0.066        | 0.456 ± 0.254 | 0.597 ± 0.145 |
| glass-0-1-6-vs-2               | 0.905 ± 0.110        | <b>0.906 ± 0.111</b> | 0.905 ± 0.110        | 0.904 ± 0.111        | 0.873 ± 0.175        | 0.963 ± 0.158        | 0.904 ± 0.110        | 0.905 ± 0.110        | 0.859 ± 0.157        | 0.767 ± 0.236 | 0.756 ± 0.213 |
| glass2                         | 0.543 ± 0.246        | 0.523 ± 0.291        | 0.522 ± 0.300        | 0.558 ± 0.255        | 0.513 ± 0.288        | 0.551 ± 0.222        | 0.520 ± 0.295        | 0.541 ± 0.245        | <b>0.562 ± 0.211</b> | 0.382 ± 0.282 | 0.598 ± 0.138 |
| glass3                         | 0.897 ± 0.063        | <b>0.898 ± 0.075</b> | 0.870 ± 0.063        | 0.880 ± 0.062        | 0.873 ± 0.077        | 0.858 ± 0.042        | 0.888 ± 0.054        | 0.897 ± 0.063        | 0.801 ± 0.083        | 0.643 ± 0.328 | 0.719 ± 0.090 |
| glass5                         | 0.917 ± 0.145        | <b>0.919 ± 0.146</b> | 0.906 ± 0.151        | 0.917 ± 0.145        | 0.908 ± 0.143        | 0.849 ± 0.125        | 0.917 ± 0.145        | 0.917 ± 0.145        | 0.791 ± 0.151        | 0.842 ± 0.172 | 0.802 ± 0.164 |
| page-blocks-1-3-vs-4           | <b>0.983 ± 0.023</b> | 0.978 ± 0.024        | 0.982 ± 0.023        | 0.983 ± 0.023        | 0.941 ± 0.118        | 0.980 ± 0.016        | 0.979 ± 0.026        | <b>0.983 ± 0.023</b> | 0.841 ± 0.125        | 0.821 ± 0.096 | 0.872 ± 0.134 |
| yeast-0-5-6-7-9-vs-4           | 0.714 ± 0.053        | <b>0.730 ± 0.045</b> | 0.717 ± 0.050        | 0.719 ± 0.050        | 0.713 ± 0.066        | 0.717 ± 0.054        | 0.702 ± 0.043        | 0.711 ± 0.052        | 0.599 ± 0.108        | 0.000 ± 0.000 | 0.579 ± 0.108 |
| yeast-1-2-8-9-vs-7             | 0.646 ± 0.063        | <b>0.654 ± 0.060</b> | 0.642 ± 0.054        | 0.634 ± 0.055        | 0.586 ± 0.124        | 0.621 ± 0.079        | 0.638 ± 0.067        | 0.646 ± 0.063        | 0.440 ± 0.097        | 0.000 ± 0.000 | 0.362 ± 0.188 |
| yeast-1-4-5-8-vs-7             | 0.573 ± 0.058        | <b>0.577 ± 0.060</b> | 0.543 ± 0.086        | 0.482 ± 0.092        | 0.519 ± 0.063        | 0.563 ± 0.062        | 0.573 ± 0.062        | 0.573 ± 0.062        | 0.297 ± 0.169        | 0.000 ± 0.000 | 0.292 ± 0.220 |
| yeast-1-vs-7                   | 0.715 ± 0.040        | 0.711 ± 0.049        | 0.717 ± 0.040        | <b>0.720 ± 0.047</b> | 0.682 ± 0.067        | 0.671 ± 0.040        | 0.688 ± 0.058        | 0.713 ± 0.039        | 0.489 ± 0.082        | 0.000 ± 0.000 | 0.314 ± 0.269 |
| yeast-2-vs-4                   | 0.868 ± 0.034        | 0.857 ± 0.039        | 0.864 ± 0.037        | 0.867 ± 0.034        | 0.869 ± 0.032        | 0.856 ± 0.037        | <b>0.870 ± 0.030</b> | 0.869 ± 0.034        | 0.828 ± 0.057        | 0.250 ± 0.382 | 0.816 ± 0.055 |
| yeast-2-vs-8                   | 0.789 ± 0.064        | 0.791 ± 0.059        | 0.782 ± 0.058        | 0.789 ± 0.065        | 0.788 ± 0.057        | <b>0.792 ± 0.068</b> | 0.787 ± 0.063        | 0.789 ± 0.063        | 0.745 ± 0.061        | 0.084 ± 0.251 | 0.779 ± 0.081 |
| yeast4                         | 0.702 ± 0.035        | 0.704 ± 0.046        | 0.702 ± 0.036        | 0.700 ± 0.038        | 0.675 ± 0.048        | 0.701 ± 0.059        | <b>0.708 ± 0.051</b> | 0.702 ± 0.034        | 0.575 ± 0.058        | 0.000 ± 0.000 | 0.539 ± 0.103 |
| yeast5                         | 0.927 ± 0.040        | 0.917 ± 0.039        | 0.922 ± 0.040        | 0.920 ± 0.038        | 0.907 ± 0.037        | <b>0.931 ± 0.052</b> | 0.927 ± 0.037        | 0.927 ± 0.040        | 0.854 ± 0.064        | 0.000 ± 0.000 | 0.753 ± 0.267 |
| yeast6                         | 0.802 ± 0.054        | 0.802 ± 0.047        | 0.802 ± 0.054        | 0.801 ± 0.054        | 0.797 ± 0.056        | <b>0.826 ± 0.038</b> | 0.795 ± 0.053        | 0.802 ± 0.054        | 0.680 ± 0.108        | 0.000 ± 0.000 | 0.747 ± 0.051 |
| clevaland-0-vs-4               | 0.869 ± 0.083        | 0.863 ± 0.039        | 0.878 ± 0.031        | 0.868 ± 0.082        | 0.867 ± 0.038        | 0.794 ± 0.087        | <b>0.880 ± 0.027</b> | 0.869 ± 0.083        | 0.698 ± 0.119        | 0.605 ± 0.313 | 0.635 ± 0.240 |
| ecoli-0-1-4-7-vs-2-3-5-6       | 0.882 ± 0.018        | 0.874 ± 0.026        | 0.878 ± 0.020        | 0.873 ± 0.020        | 0.882 ± 0.024        | 0.874 ± 0.030        | 0.880 ± 0.022        | <b>0.882 ± 0.019</b> | 0.672 ± 0.180        | 0.273 ± 0.300 | 0.784 ± 0.122 |
| ecoli-1-vs-2-3-5               | 0.880 ± 0.028        | <b>0.882 ± 0.030</b> | 0.873 ± 0.029        | 0.875 ± 0.029        | 0.874 ± 0.028        | 0.871 ± 0.045        | 0.882 ± 0.034        | 0.880 ± 0.028        | 0.786 ± 0.173        | 0.482 ± 0.307 | 0.808 ± 0.073 |
| ecoli-0-2-6-7-vs-3-5           | 0.831 ± 0.059        | 0.833 ± 0.068        | 0.831 ± 0.061        | 0.834 ± 0.065        | <b>0.834 ± 0.042</b> | 0.830 ± 0.057        | 0.830 ± 0.058        | 0.830 ± 0.058        | 0.789 ± 0.050        | 0.359 ± 0.298 | 0.831 ± 0.032 |
| ecoli-0-6-7-vs-3-5             | 0.844 ± 0.061        | 0.848 ± 0.060        | 0.847 ± 0.071        | <b>0.850 ± 0.059</b> | 0.838 ± 0.068        | 0.833 ± 0.057        | 0.844 ± 0.060        | 0.845 ± 0.060        | 0.792 ± 0.085        | 0.373 ± 0.344 | 0.780 ± 0.095 |
| ecoli-0-6-7-vs-2               | 0.869 ± 0.051        | 0.856 ± 0.066        | 0.860 ± 0.050        | 0.859 ± 0.063        | 0.863 ± 0.052        | <b>0.866 ± 0.039</b> | 0.859 ± 0.054        | 0.860 ± 0.053        | 0.812 ± 0.078        | 0.318 ± 0.533 | 0.854 ± 0.075 |
| glass-0-1-4-6-vs-2             | <b>0.636 ± 0.142</b> | 0.623 ± 0.134        | 0.628 ± 0.162        | 0.628 ± 0.160        | 0.587 ± 0.156        | 0.573 ± 0.087        | 0.617 ± 0.164        | 0.629 ± 0.139        | 0.393 ± 0.218        | 0.361 ± 0.314 | 0.403 ± 0.234 |
| glass-0-1-5-vs-2               | 0.662 ± 0.070        | 0.660 ± 0.063        | <b>0.673 ± 0.073</b> | 0.654 ± 0.077        | 0.638 ± 0.122        | 0.602 ± 0.078        | 0.669 ± 0.068        | 0.661 ± 0.070        | 0.619 ± 0.135        | 0.418 ± 0.323 | 0.494 ± 0.218 |
| yeast-0-2-5-6-vs-3-7-8-9       | 0.767 ± 0.036        | 0.760 ± 0.030        | <b>0.771 ± 0.031</b> | 0.768 ± 0.028        | 0.767 ± 0.034        | 0.755 ± 0.036        | 0.768 ± 0.035        | 0.768 ± 0.036        | 0.606 ± 0.146        | 0.219 ± 0.202 | 0.629 ± 0.056 |
| yeast-0-5-5-9-vs-7-8           | 0.662 ± 0.042        | 0.649 ± 0.043        | 0.662 ± 0.043        | 0.652 ± 0.050        | 0.657 ± 0.048        | 0.653 ± 0.065        | 0.650 ± 0.037        | <b>0.664 ± 0.044</b> | 0.429 ± 0.149        | 0.028 ± 0.084 | 0.386 ± 0.196 |
| abalone-17-vs-7-8-9-10         | 0.722 ± 0.061        | 0.672 ± 0.048        | <b>0.726 ± 0.060</b> | 0.717 ± 0.060        | 0.666 ± 0.062        | 0.706 ± 0.056        | 0.714 ± 0.059        | 0.721 ± 0.061        | 0.465 ± 0.072        | 0.387 ± 0.215 | 0.442 ± 0.233 |
| abalone-19-vs-10-11-12-13      | 0.492 ± 0.070        | 0.379 ± 0.064        | 0.498 ± 0.076        | <b>0.500 ± 0.091</b> | 0.385 ± 0.153        | 0.454 ± 0.085        | 0.462 ± 0.085        | 0.492 ± 0.070        | 0.300 ± 0.130        | 0.251 ± 0.128 | 0.291 ± 0.203 |
| abalone-20-vs-8-9-10           | 0.714 ± 0.080        | 0.580 ± 0.045        | 0.724 ± 0.088        | <b>0.726 ± 0.093</b> | 0.584 ± 0.099        | 0.601 ± 0.085        | 0.696 ± 0.120        | 0.708 ± 0.085        | 0.513 ± 0.128        | 0.198 ± 0.264 | 0.544 ± 0.115 |
| abalone-21-vs-2                | <b>0.810 ± 0.104</b> | 0.732 ± 0.107        | 0.793 ± 0.092        | 0.794 ± 0.093        | 0.768 ± 0.101        | 0.769 ± 0.082        | 0.801 ± 0.098        | 0.810 ± 0.104        | 0.625 ± 0.159        | 0.515 ± 0.290 | 0.633 ± 0.150 |
| flare-F                        | 0.651 ± 0.061        | 0.619 ± 0.057        | 0.647 ± 0.072        | 0.651 ± 0.063        | 0.614 ± 0.068        | <b>0.654 ± 0.053</b> | 0.653 ± 0.057        | 0.651 ± 0.062        | 0.286 ± 0.168        | 0.043 ± 0.085 | 0.328 ± 0.193 |
| kidcup-buffer-overflow-vs-back | 0.954 ± 0.051        | 0.954 ± 0.051        | 0.954 ± 0.051        | 0.954 ± 0.051        | 0.944 ± 0.054        | <b>0.958 ± 0.044</b> | 0.944 ± 0.046        | 0.954 ± 0.051        | 0.954 ± 0.048        | 0.954 ± 0.048 | 0.954 ± 0.048 |
| kidcup-rootkit-innp-vs-back    | <b>0.972 ± 0.023</b> | 0.962 ± 0.043        | <b>0.972 ± 0.023</b> | <b>0.972 ± 0.023</b> | 0.952 ± 0.049        | 0.943 ± 0.029        | 0.952 ± 0.055        | <b>0.972 ± 0.023</b> | 0.962 ± 0.042        | 0.962 ± 0.042 | 0.962 ± 0.042 |
| kr-vs-karoo-vs-ahglt           | 0.937 ± 0.052        | 0.926 ± 0.057        | 0.941 ± 0.052        | <b>0.941 ± 0.052</b> | 0.921 ± 0.067        | 0.941 ± 0.065        | 0.924 ± 0.066        | 0.937 ± 0.052        | 0.634 ± 0.339        | 0.000 ± 0.000 | 0.588 ± 0.303 |
| poker-8-9-vs-2                 | 0.486 ± 0.126        | 0.406 ± 0.091        | 0.498 ± 0.136        | 0.484 ± 0.129        | 0.294 ± 0.170        | <b>0.577 ± 0.084</b> | 0.492 ± 0.132        | 0.486 ± 0.126        | 0.226 ± 0.242        | 0.086 ± 0.173 | 0.215 ± 0.267 |
| poker-8-9-vs-6                 | 0.948 ± 0.042        | 0.908 ± 0.036        | 0.947 ± 0.041        | 0.947 ± 0.041        | 0.899 ± 0.060        | 0.976 ± 0.027        | 0.936 ± 0.032        | 0.948 ± 0.042        | <b>0.987 ± 0.040</b> | 0.974 ± 0.051 | 0.974 ± 0.051 |
| poker-8-vs-6                   | 0.940 ± 0.065        | 0.858 ± 0.067        | 0.940 ± 0.065        | 0.939 ± 0.065        | 0.860 ± 0.122        | <b>0.978 ± 0.018</b> | 0.929 ± 0.067        | 0.940 ± 0.065        | 0.889 ± 0.148        | 0.918 ± 0.138 | 0.788 ± 0.301 |
| poker-9-vs-7                   | 0.773 ± 0.290        | 0.773 ± 0.290        | 0.773 ± 0.290        | 0.773 ± 0.291        | 0.748 ± 0.276        | 0.723 ± 0.265        | 0.761 ± 0.284        | 0.773 ± 0.290        | 0.635 ± 0.441        | 0.719 ± 0.319 | 0.558 ± 0.393 |
| winequality-red-3-vs-2         | 0.388 ± 0.206        | 0.371 ± 0.193        | 0.388 ± 0.206        | 0.388 ± 0.206        | 0.371 ± 0.193        | <b>0.392 ± 0.208</b> | 0.371 ± 0.192        | 0.388 ± 0.206        | 0.239 ± 0.244        | 0.044 ± 0.132 | 0.324 ± 0.219 |
| winequality-red-4              | 0.525 ± 0.046        | 0.484 ± 0.086        | 0.523 ± 0.055        | 0.525 ± 0.039        | 0.482 ± 0.074        | 0.410 ± 0.056        | <b>0.535 ± 0.039</b> | 0.525 ± 0.046        | 0.331 ± 0.088        | 0.198 ± 0.190 | 0.415 ± 0.102 |
| winequality-red-5              | 0.332 ± 0.195        | 0.334 ± 0.202        | 0.345 ± 0.197        | 0.345 ± 0.197        | 0.334 ± 0.148        | 0.302 ± 0.179        | <b>0.356 ± 0.152</b> | 0.332 ± 0.195        | 0.296 ± 0.213        | 0.232 ± 0.246 | 0.328 ± 0.135 |
| winequality-red-8-vs-6         | <b>0.573 ± 0.083</b> | 0.555 ± 0.083        | 0.555 ± 0.089        | 0.573 ± 0.083        | 0.486 ± 0.100        | 0.496 ± 0.102        | 0.567 ± 0.074        | 0.573 ± 0.083        | 0.456 ± 0.174        | 0.403 ± 0.231 | 0.491 ± 0.201 |
| winequality-white-3-9-vs-2     | <b>0.533 ± 0.061</b> | 0.504 ± 0.069        | 0.532 ± 0.068        | 0.532 ± 0.067        | 0.415 ± 0.069        | 0.462 ± 0.111        | 0.496 ± 0.072        | <b>0.533 ± 0.061</b> | 0.295 ± 0.174        | 0.288 ± 0.164 | 0.390 ± 0.160 |
| winequality-white-3-vs-7       | 0.489 ± 0.240        | 0.360 ± 0.208        | 0.494 ± 0.254        | 0.465 ± 0.255        | 0.367 ± 0.201        | <b>0.502 ± 0.200</b> | 0.479 ± 0.264        | 0.489 ± 0.240        | 0.397 ± 0.214        | 0.420 ± 0.242 | 0.354 ± 0.196 |
| winequality-white-9-vs-4       | 0.865 ± 0.105        | <b>0.869 ± 0.109</b> | 0.865 ± 0.105        | 0.866 ± 0.105        | 0.865 ± 0.106        | 0.865 ± 0.351        | 0.865 ± 0.105        | 0.865 ± 0.105        | 0.567 ± 0.383        | 0.567 ± 0.383 | 0.567 ± 0.383 |
| zoo-3                          | <b>0.769 ± 0.280</b> | <b>0.769 ± 0.280</b> | <b>0.769 ± 0.280</b> | 0.545 ± 0.387        | <b>0.769 ± 0.280</b> | 0.516 ± 0.362        | <b>0.769 ± 0.280</b> | <b>0.769 ± 0.280</b> | 0.410 ± 0.343        | 0.410 ± 0.343 | 0.410 ± 0.343 |
| ecoli1                         | 0.863 ± 0.027        | 0.862 ± 0.021        | 0.867 ± 0.030        | <b>0.870 ± 0.025</b> | 0.869 ± 0.027        | 0.863 ± 0.030        | 0.862 ± 0.034        | 0.866 ± 0.023        | 0.793 ± 0.068        | 0.162 ± 0.325 | 0.837 ± 0.050 |
| ecoli2                         | 0.914 ± 0.029        | <b>0.921 ± 0.027</b> | 0.911 ± 0.029        | 0.913 ± 0.028        | 0.918 ± 0.030        | 0.911 ± 0.021        | 0.913 ± 0.027        | 0.914 ± 0.029        | 0.830 ± 0.094        | 0.229 ± 0.354 | 0.859 ± 0.067 |
| ecoli3                         | 0.865 ± 0.020        | 0.856 ± 0.023        | <b>0.867 ± 0.015</b> | 0.858 ± 0.026        | 0.852 ± 0.036        | 0.850 ± 0.029        | 0.860 ± 0.019        | 0.865 ± 0.016        | 0.786 ± 0.063        | 0.220 ± 0.339 | 0.680 ± 0.239 |
| glass0                         | 0.787 ± 0.035        | 0.794 ± 0.037        | 0.782 ± 0.033        | 0.789 ± 0.028        | 0.792 ± 0.027        | 0.785 ± 0.040        | 0.796 ± 0.030        | <b>0.796 ± 0.035</b> | 0.775 ± 0.048        | 0.649 ± 0.237 | 0.777 ± 0.051 |
| glass1                         | 0.736 ± 0.049        | <b>0.747 ± 0.053</b> | 0.743 ± 0.045        | 0.746 ± 0.039        | 0.737 ± 0.043        | 0.738 ± 0.033        | 0.735 ± 0.031        | 0.736 ± 0.033        | 0.683 ± 0.096        | 0.299 ± 0.233 | 0.682 ± 0.056 |
| haberman                       | 0.595 ± 0.037        | <b>0.601 ± 0.051</b> | 0.575 ± 0.053        | 0.580 ± 0.026        | 0.575 ± 0.050        | 0.570 ± 0.045        | 0.574 ± 0.038        | 0.594 ± 0.031        | 0.560 ± 0.031        | 0.468 ± 0.119 | 0.562 ± 0.070 |
| page-blocks0                   | 0.929 ± 0.010        | 0.909 ± 0.013        | 0.927 ± 0.012        | 0.920 ± 0.012        | 0.923 ± 0.011        | 0.881 ± 0.018        | <b>0.931 ± 0.009</b> | 0.929 ± 0.010        | 0.890 ± 0.020        | 0.903 ± 0.013 | 0.895 ± 0.016 |
| ptms                           | 0.684 ± 0.021        | <b>0.706 ± 0.019</b> | 0.684 ± 0.014        | 0.687 ± 0.016        | 0.681 ± 0.018        | 0.688 ± 0.022        | 0.686 ± 0.017        | 0.692 ± 0.024        | 0.676 ± 0.023        | 0.696 ± 0.058 | 0.689 ± 0.021 |
| vehicle1                       | 0.722 ± 0.026        | <b>0.739 ± 0.018</b> | 0.720 ± 0.024        | 0.735 ± 0.025        | 0.724 ± 0.019        | 0.718 ± 0.023        | 0.730 ± 0.023        | 0.723 ± 0.027        | 0.646 ± 0.030        | 0.714 ± 0.032 | 0.694 ± 0.032 |
| vehicle5                       | 0.707 ± 0.019        | 0.696 ± 0.030        | 0.711 ± 0.019        | <b>0.717 ± 0.025</b> | 0.708 ± 0.018        | 0.688 ± 0.024        | 0.711 ± 0.021        | 0.705 ± 0.020        | 0.619 ± 0.030        | 0.692 ± 0.026 | 0.693 ± 0.029 |

Table 13. CART – Precision

| Dataset name                  | SMOTE                | polynom-ft-SMOTE     | Lee                  | SMOBD                | G-SMOTE              | LVQ-SMOTE            | Assembled-SMOTE      | SMOTE-TonekLinks     | JFOTS_pr             | JFOTS_rc             | JFOTS_prom           |
|-------------------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| abalone19                     | 0.028 ± 0.014        | 0.013 ± 0.019        | 0.023 ± 0.014        | 0.031 ± 0.013        | <b>0.036 ± 0.035</b> | 0.018 ± 0.015        | 0.026 ± 0.012        | 0.028 ± 0.014        | 0.009 ± 0.015        | 0.011 ± 0.010        | 0.012 ± 0.008        |
| abalone18                     | 0.236 ± 0.058        | 0.222 ± 0.067        | 0.237 ± 0.070        | 0.256 ± 0.070        | 0.270 ± 0.050        | 0.196 ± 0.057        | 0.224 ± 0.048        | 0.230 ± 0.057        | <b>0.341 ± 0.078</b> | 0.147 ± 0.117        | 0.360 ± 0.116        |
| ecoli0-1-3-7-vs-2-6           | 0.438 ± 0.237        | <b>0.488 ± 0.186</b> | 0.438 ± 0.237        | 0.438 ± 0.237        | <b>0.488 ± 0.186</b> | 0.433 ± 0.240        | 0.438 ± 0.237        | 0.438 ± 0.237        | 0.363 ± 0.271        | 0.149 ± 0.124        | 0.363 ± 0.262        |
| glass0-1-6-vs-2               | 0.253 ± 0.080        | 0.222 ± 0.146        | 0.281 ± 0.059        | 0.284 ± 0.073        | 0.268 ± 0.116        | 0.168 ± 0.106        | 0.262 ± 0.128        | 0.254 ± 0.087        | <b>0.328 ± 0.180</b> | 0.180 ± 0.070        | 0.323 ± 0.238        |
| glass0-1-6-vs-2               | <b>0.759 ± 0.181</b> | 0.704 ± 0.145        | <b>0.759 ± 0.181</b> | 0.604 ± 0.280        | 0.747 ± 0.136        | <b>0.759 ± 0.181</b> | <b>0.759 ± 0.181</b> | 0.583 ± 0.228        | 0.534 ± 0.207        | 0.567 ± 0.342        | 0.583 ± 0.228        |
| glass2                        | 0.214 ± 0.174        | 0.174 ± 0.128        | 0.214 ± 0.185        | 0.237 ± 0.164        | <b>0.240 ± 0.221</b> | 0.143 ± 0.081        | 0.204 ± 0.153        | 0.228 ± 0.173        | 0.205 ± 0.141        | 0.151 ± 0.111        | 0.230 ± 0.130        |
| glass1                        | 0.610 ± 0.155        | 0.573 ± 0.117        | 0.614 ± 0.167        | 0.604 ± 0.160        | 0.580 ± 0.186        | 0.425 ± 0.122        | 0.612 ± 0.176        | 0.610 ± 0.155        | <b>0.677 ± 0.208</b> | 0.552 ± 0.321        | 0.489 ± 0.209        |
| glass5                        | 0.693 ± 0.211        | 0.620 ± 0.145        | 0.693 ± 0.211        | 0.693 ± 0.211        | 0.660 ± 0.184        | <b>0.734 ± 0.202</b> | 0.693 ± 0.211        | 0.693 ± 0.211        | 0.665 ± 0.150        | 0.710 ± 0.238        | 0.566 ± 0.220        |
| page-blocks1-3-vs-4           | <b>0.931 ± 0.030</b> | 0.865 ± 0.080        | 0.930 ± 0.031        | 0.906 ± 0.076        | 0.922 ± 0.046        | 0.777 ± 0.084        | 0.928 ± 0.035        | <b>0.931 ± 0.030</b> | 0.846 ± 0.085        | 0.719 ± 0.267        | 0.857 ± 0.136        |
| yeast0-5-6-7-9-vs-4           | 0.340 ± 0.051        | <b>0.377 ± 0.045</b> | 0.370 ± 0.062        | 0.354 ± 0.050        | 0.355 ± 0.072        | 0.290 ± 0.040        | 0.353 ± 0.044        | 0.348 ± 0.079        | 0.363 ± 0.042        | 0.096 ± 0.003        | 0.336 ± 0.066        |
| yeast-1-2-8-9-vs-7            | 0.101 ± 0.020        | <b>0.133 ± 0.063</b> | 0.101 ± 0.033        | 0.089 ± 0.030        | 0.130 ± 0.047        | 0.097 ± 0.023        | 0.098 ± 0.017        | 0.113 ± 0.033        | 0.106 ± 0.083        | 0.032 ± 0.000        | 0.122 ± 0.089        |
| yeast-1-4-5-8-vs-7            | 0.072 ± 0.044        | <b>0.112 ± 0.041</b> | 0.073 ± 0.053        | 0.065 ± 0.042        | 0.076 ± 0.048        | 0.050 ± 0.019        | 0.086 ± 0.025        | 0.070 ± 0.048        | 0.050 ± 0.066        | 0.044 ± 0.000        | 0.057 ± 0.042        |
| yeast-1-vs-7                  | 0.203 ± 0.070        | 0.234 ± 0.085        | 0.178 ± 0.082        | 0.214 ± 0.056        | 0.186 ± 0.085        | 0.169 ± 0.021        | 0.186 ± 0.051        | 0.198 ± 0.071        | <b>0.270 ± 0.120</b> | 0.055 ± 0.029        | 0.161 ± 0.079        |
| yeast-2-vs-4                  | 0.621 ± 0.047        | 0.673 ± 0.044        | 0.689 ± 0.044        | 0.677 ± 0.069        | 0.653 ± 0.079        | 0.559 ± 0.073        | 0.676 ± 0.055        | 0.619 ± 0.059        | 0.670 ± 0.058        | 0.259 ± 0.269        | <b>0.715 ± 0.093</b> |
| yeast-2-vs-8                  | 0.273 ± 0.116        | 0.518 ± 0.154        | 0.377 ± 0.161        | 0.346 ± 0.088        | 0.481 ± 0.131        | 0.259 ± 0.064        | 0.386 ± 0.144        | 0.287 ± 0.113        | <b>0.792 ± 0.202</b> | 0.044 ± 0.005        | 0.595 ± 0.269        |
| yeast4                        | 0.223 ± 0.033        | 0.258 ± 0.052        | 0.233 ± 0.056        | 0.240 ± 0.049        | 0.216 ± 0.059        | 0.202 ± 0.040        | 0.237 ± 0.092        | 0.226 ± 0.035        | <b>0.280 ± 0.077</b> | 0.034 ± 0.001        | 0.234 ± 0.110        |
| yeast5                        | 0.649 ± 0.091        | 0.624 ± 0.086        | 0.623 ± 0.089        | 0.618 ± 0.101        | 0.638 ± 0.056        | 0.393 ± 0.060        | 0.646 ± 0.077        | <b>0.655 ± 0.095</b> | 0.643 ± 0.099        | 0.030 ± 0.000        | 0.546 ± 0.191        |
| yeast6                        | 0.269 ± 0.050        | 0.272 ± 0.072        | 0.281 ± 0.096        | 0.280 ± 0.061        | <b>0.354 ± 0.070</b> | 0.171 ± 0.029        | 0.288 ± 0.081        | 0.273 ± 0.051        | 0.284 ± 0.082        | 0.025 ± 0.003        | 0.323 ± 0.092        |
| cleaveland0-vs-4              | <b>0.558 ± 0.149</b> | 0.419 ± 0.187        | 0.506 ± 0.173        | 0.542 ± 0.127        | 0.491 ± 0.209        | 0.451 ± 0.154        | 0.555 ± 0.136        | <b>0.558 ± 0.149</b> | 0.454 ± 0.115        | 0.454 ± 0.243        | 0.484 ± 0.267        |
| ecoli0-1-4-7-vs-2-3-5-6       | 0.502 ± 0.116        | 0.583 ± 0.115        | 0.583 ± 0.100        | 0.510 ± 0.109        | 0.536 ± 0.073        | 0.423 ± 0.111        | 0.589 ± 0.116        | 0.539 ± 0.140        | <b>0.674 ± 0.091</b> | 0.119 ± 0.161        | 0.537 ± 0.183        |
| ecoli0-1-vs-2-3-5             | 0.654 ± 0.151        | <b>0.708 ± 0.060</b> | 0.629 ± 0.069        | 0.579 ± 0.149        | 0.620 ± 0.134        | 0.530 ± 0.066        | 0.614 ± 0.178        | 0.611 ± 0.143        | 0.566 ± 0.125        | 0.337 ± 0.315        | 0.552 ± 0.137        |
| ecoli0-2-6-7-vs-3-5           | 0.581 ± 0.102        | <b>0.691 ± 0.140</b> | 0.566 ± 0.113        | 0.608 ± 0.128        | 0.606 ± 0.057        | 0.470 ± 0.121        | 0.547 ± 0.134        | 0.607 ± 0.110        | 0.666 ± 0.136        | 0.174 ± 0.221        | 0.634 ± 0.135        |
| ecoli0-6-7-vs-3-5             | 0.563 ± 0.149        | <b>0.746 ± 0.229</b> | 0.608 ± 0.165        | 0.586 ± 0.161        | 0.625 ± 0.123        | 0.510 ± 0.146        | 0.537 ± 0.145        | 0.570 ± 0.143        | 0.716 ± 0.165        | 0.277 ± 0.279        | 0.636 ± 0.236        |
| ecoli0-6-7-vs-2               | 0.697 ± 0.197        | 0.744 ± 0.157        | 0.676 ± 0.216        | 0.687 ± 0.224        | <b>0.775 ± 0.182</b> | 0.545 ± 0.136        | 0.688 ± 0.200        | 0.676 ± 0.205        | 0.764 ± 0.156        | 0.268 ± 0.302        | 0.758 ± 0.146        |
| glass0-1-4-6-vs-2             | 0.231 ± 0.080        | 0.164 ± 0.111        | 0.237 ± 0.096        | 0.219 ± 0.088        | <b>0.244 ± 0.101</b> | 0.192 ± 0.055        | 0.184 ± 0.099        | 0.201 ± 0.102        | 0.167 ± 0.127        | 0.130 ± 0.041        | 0.171 ± 0.090        |
| glass0-1-5-vs-2               | 0.335 ± 0.060        | 0.249 ± 0.137        | <b>0.392 ± 0.230</b> | 0.340 ± 0.138        | 0.317 ± 0.152        | 0.181 ± 0.077        | 0.300 ± 0.102        | 0.338 ± 0.098        | 0.281 ± 0.130        | 0.180 ± 0.098        | 0.173 ± 0.107        |
| yeast0-2-5-6-vs-3-7-8-9       | 0.377 ± 0.050        | <b>0.444 ± 0.067</b> | 0.409 ± 0.051        | 0.394 ± 0.055        | 0.416 ± 0.048        | 0.395 ± 0.052        | 0.373 ± 0.056        | 0.359 ± 0.046        | 0.409 ± 0.162        | 0.185 ± 0.168        | 0.414 ± 0.096        |
| yeast0-5-5-9-vs-7-8           | 0.296 ± 0.036        | <b>0.326 ± 0.058</b> | 0.237 ± 0.046        | 0.226 ± 0.055        | 0.240 ± 0.062        | 0.233 ± 0.062        | 0.220 ± 0.053        | 0.214 ± 0.044        | 0.220 ± 0.196        | 0.105 ± 0.014        | 0.188 ± 0.086        |
| abalone17-vs-7-8-9-10         | 0.162 ± 0.052        | 0.229 ± 0.038        | 0.160 ± 0.023        | 0.172 ± 0.037        | 0.205 ± 0.050        | 0.155 ± 0.033        | 0.176 ± 0.045        | 0.161 ± 0.053        | <b>0.238 ± 0.078</b> | 0.088 ± 0.070        | 0.139 ± 0.086        |
| abalone19-vs-10-11-12-13      | 0.049 ± 0.022        | 0.040 ± 0.031        | 0.047 ± 0.023        | 0.043 ± 0.015        | 0.050 ± 0.037        | 0.045 ± 0.017        | <b>0.055 ± 0.018</b> | 0.053 ± 0.016        | 0.043 ± 0.044        | 0.020 ± 0.013        | 0.039 ± 0.036        |
| abalone20-vs-8-9-10           | 0.155 ± 0.024        | 0.128 ± 0.097        | 0.151 ± 0.065        | 0.159 ± 0.042        | 0.169 ± 0.069        | 0.131 ± 0.033        | 0.161 ± 0.045        | 0.156 ± 0.024        | <b>0.180 ± 0.095</b> | 0.049 ± 0.032        | 0.140 ± 0.094        |
| abalone21-vs-2                | 0.278 ± 0.171        | 0.354 ± 0.197        | 0.272 ± 0.166        | 0.264 ± 0.191        | 0.382 ± 0.208        | 0.278 ± 0.121        | 0.281 ± 0.179        | 0.285 ± 0.173        | <b>0.425 ± 0.166</b> | 0.240 ± 0.210        | 0.399 ± 0.271        |
| flare-F                       | 0.155 ± 0.060        | <b>0.247 ± 0.080</b> | 0.175 ± 0.067        | 0.187 ± 0.051        | 0.224 ± 0.070        | 0.215 ± 0.094        | 0.177 ± 0.058        | 0.180 ± 0.044        | 0.177 ± 0.121        | 0.051 ± 0.018        | 0.201 ± 0.077        |
| kddcup-bufferoverflow-vs-back | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> |
| kddcup-rootkit-innp-vs-back   | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> |
| kr-vs-karozo-vs-aignt         | 0.881 ± 0.077        | 0.888 ± 0.067        | <b>0.911 ± 0.071</b> | 0.899 ± 0.065        | 0.895 ± 0.093        | 0.716 ± 0.119        | 0.901 ± 0.094        | 0.881 ± 0.077        | 0.645 ± 0.282        | 0.045 ± 0.016        | 0.595 ± 0.352        |
| poker-8-9-vs-2                | 0.066 ± 0.033        | <b>0.079 ± 0.065</b> | 0.066 ± 0.028        | 0.068 ± 0.024        | 0.059 ± 0.059        | 0.056 ± 0.034        | 0.049 ± 0.022        | 0.066 ± 0.031        | 0.061 ± 0.083        | 0.031 ± 0.042        | 0.052 ± 0.061        |
| poker-8-9-vs-4                | 0.247 ± 0.095        | 0.643 ± 0.299        | 0.345 ± 0.312        | 0.255 ± 0.299        | 0.469 ± 0.318        | 0.145 ± 0.125        | 0.274 ± 0.188        | 0.247 ± 0.095        | 0.938 ± 0.099        | 0.934 ± 0.107        | <b>0.947 ± 0.106</b> |
| poker-8-vs-6                  | 0.509 ± 0.330        | 0.375 ± 0.281        | 0.451 ± 0.263        | 0.420 ± 0.268        | 0.503 ± 0.308        | 0.315 ± 0.381        | 0.474 ± 0.347        | 0.509 ± 0.330        | 0.951 ± 0.114        | <b>0.967 ± 0.100</b> | 0.745 ± 0.303        |
| poker-9-vs-7                  | 0.166 ± 0.198        | 0.120 ± 0.126        | 0.166 ± 0.198        | 0.166 ± 0.198        | 0.199 ± 0.209        | 0.271 ± 0.320        | 0.148 ± 0.176        | 0.166 ± 0.198        | <b>0.341 ± 0.402</b> | 0.272 ± 0.317        | 0.278 ± 0.333        |
| winequality-red-3-vs-2        | 0.026 ± 0.045        | 0.073 ± 0.151        | 0.025 ± 0.060        | 0.042 ± 0.077        | 0.026 ± 0.061        | 0.070 ± 0.056        | 0.034 ± 0.059        | 0.026 ± 0.045        | 0.053 ± 0.101        | 0.053 ± 0.096        | <b>0.085 ± 0.088</b> |
| winequality-red-4             | 0.072 ± 0.035        | 0.060 ± 0.028        | 0.088 ± 0.016        | 0.090 ± 0.030        | <b>0.104 ± 0.048</b> | 0.086 ± 0.021        | 0.089 ± 0.012        | 0.071 ± 0.036        | 0.090 ± 0.049        | 0.049 ± 0.021        | 0.090 ± 0.047        |
| winequality-red-8-vs-6-7      | 0.060 ± 0.045        | 0.072 ± 0.045        | 0.060 ± 0.039        | <b>0.079 ± 0.044</b> | 0.074 ± 0.063        | 0.055 ± 0.025        | 0.061 ± 0.041        | 0.065 ± 0.047        | 0.050 ± 0.063        | 0.065 ± 0.037        | 0.057 ± 0.037        |
| winequality-red-8-vs-6        | 0.123 ± 0.048        | <b>0.201 ± 0.174</b> | 0.121 ± 0.041        | 0.116 ± 0.058        | 0.132 ± 0.087        | 0.107 ± 0.044        | 0.140 ± 0.054        | 0.123 ± 0.048        | 0.124 ± 0.075        | 0.105 ± 0.079        | 0.193 ± 0.276        |
| winequality-white-3-9-vs-2    | 0.059 ± 0.048        | 0.055 ± 0.038        | 0.047 ± 0.042        | 0.045 ± 0.038        | 0.054 ± 0.067        | <b>0.101 ± 0.029</b> | 0.041 ± 0.024        | 0.059 ± 0.048        | 0.059 ± 0.055        | 0.029 ± 0.029        | 0.065 ± 0.060        |
| winequality-white-3-vs-7      | 0.068 ± 0.047        | 0.111 ± 0.088        | 0.088 ± 0.054        | 0.085 ± 0.052        | 0.136 ± 0.052        | <b>0.252 ± 0.070</b> | 0.047 ± 0.044        | 0.068 ± 0.047        | 0.097 ± 0.056        | 0.122 ± 0.124        | 0.146 ± 0.113        |
| winequality-white-9-vs-4      | 0.377 ± 0.294        | 0.345 ± 0.283        | 0.360 ± 0.282        | <b>0.380 ± 0.277</b> | 0.368 ± 0.277        | 0.363 ± 0.280        | 0.360 ± 0.282        | 0.377 ± 0.294        | 0.167 ± 0.300        | 0.167 ± 0.300        | 0.167 ± 0.300        |
| zoo-3                         | 0.196 ± 0.192        | 0.170 ± 0.169        | 0.301 ± 0.296        | 0.274 ± 0.293        | 0.246 ± 0.300        | <b>0.579 ± 0.380</b> | 0.334 ± 0.365        | 0.196 ± 0.192        | 0.104 ± 0.163        | 0.104 ± 0.163        | 0.104 ± 0.163        |
| ecoli1                        | 0.715 ± 0.043        | 0.705 ± 0.047        | 0.708 ± 0.040        | <b>0.736 ± 0.048</b> | 0.718 ± 0.024        | 0.666 ± 0.041        | 0.712 ± 0.038        | 0.731 ± 0.043        | 0.698 ± 0.085        | 0.296 ± 0.203        | 0.678 ± 0.049        |
| ecoli2                        | 0.706 ± 0.080        | 0.702 ± 0.097        | <b>0.740 ± 0.129</b> | 0.734 ± 0.082        | 0.714 ± 0.106        | 0.624 ± 0.078        | 0.692 ± 0.099        | 0.724 ± 0.092        | 0.609 ± 0.120        | 0.270 ± 0.271        | 0.630 ± 0.069        |
| ecoli3                        | 0.474 ± 0.059        | 0.504 ± 0.083        | 0.462 ± 0.084        | 0.503 ± 0.072        | 0.494 ± 0.078        | 0.462 ± 0.051        | 0.486 ± 0.068        | 0.482 ± 0.068        | <b>0.516 ± 0.102</b> | 0.198 ± 0.178        | 0.507 ± 0.175        |
| glass0                        | 0.637 ± 0.044        | 0.656 ± 0.076        | 0.689 ± 0.072        | 0.689 ± 0.067        | 0.683 ± 0.089        | 0.693 ± 0.069        | <b>0.710 ± 0.111</b> | 0.660 ± 0.066        | 0.646 ± 0.067        | 0.563 ± 0.126        | 0.613 ± 0.071        |
| glass1                        | 0.620 ± 0.044        | <b>0.649 ± 0.047</b> | 0.620 ± 0.053        | 0.629 ± 0.079        | 0.619 ± 0.051        | 0.610 ± 0.061        | 0.620 ± 0.072        | 0.625 ± 0.041        | 0.594 ± 0.092        | 0.441 ± 0.107        | 0.552 ± 0.068        |
| haberman                      | 0.366 ± 0.040        | 0.350 ± 0.027        | 0.352 ± 0.043        | 0.345 ± 0.055        | 0.353 ± 0.059        | 0.359 ± 0.047        | 0.344 ± 0.063        | 0.388 ± 0.055        | <b>0.408 ± 0.051</b> | 0.327 ± 0.105        | 0.398 ± 0.095        |
| page-blocks0                  | 0.763 ± 0.029        | 0.798 ± 0.020        | 0.756 ± 0.028        | 0.762 ± 0.033        | 0.787 ± 0.018        | 0.800 ± 0.016        | 0.765 ± 0.028        | 0.771 ± 0.024        | <b>0.812 ± 0.025</b> | 0.785 ± 0.025        | 0.776 ± 0.045        |
| ptms                          | 0.552 ± 0.030        | <b>0.566 ± 0.022</b> | 0.553 ± 0.038        | 0.556 ± 0.028        | 0.550 ± 0.033        | 0.564 ± 0.040        | 0.559 ± 0.031        | 0.559 ± 0.034        | 0.553 ± 0.047        | 0.484 ± 0.051        | 0.555 ± 0.043        |
| vehicle1                      | 0.495 ± 0.033        | 0.498 ± 0.039        | <b>0.505 ± 0.024</b> | 0.496 ± 0.034        | 0.482 ± 0.033        | 0.492 ± 0.044        | 0.491 ± 0.030        | 0.503 ± 0.025        | 0.489 ± 0.033        | 0.08 ± 0.031         | 0.485 ± 0.031        |
| vehicle1                      | 0.471 ± 0.033        | <b>0.512 ± 0.040</b> | 0.467 ± 0.042        | 0.477 ± 0.038        | 0.483 ± 0.028        | 0.486 ± 0.037        | 0.490 ± 0.025        | 0.473 ± 0.028        | 0.475                |                      |                      |

Table 14. SVM – Precision

| Dataset name                   | SMOTE                | polynom-fit-SMOTE    | Lee                  | SMOBD                | G-SMOTE              | LVQ-SMOTE            | Assembled-SMOTE      | SMOTE-TonekLinks     | JFOTS_pr             | JFOTS_rc             | JFOTS_prom    |
|--------------------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|---------------|
| abalone19                      | 0.019 ± 0.008        | <b>0.026 ± 0.013</b> | 0.019 ± 0.008        | 0.020 ± 0.008        | 0.022 ± 0.008        | 0.021 ± 0.006        | 0.019 ± 0.008        | 0.019 ± 0.008        | 0.017 ± 0.009        | 0.011 ± 0.004        | 0.012 ± 0.002 |
| abalone18                      | 0.247 ± 0.040        | 0.361 ± 0.092        | 0.299 ± 0.030        | 0.251 ± 0.052        | 0.250 ± 0.055        | 0.334 ± 0.077        | 0.240 ± 0.042        | 0.245 ± 0.039        | <b>0.525 ± 0.103</b> | 0.146 ± 0.090        | 0.361 ± 0.244 |
| ecoli0-1-3-7,vs,2-6            | 0.775 ± 0.287        | <b>0.842 ± 0.256</b> | 0.544 ± 0.260        | 0.648 ± 0.273        | 0.802 ± 0.308        | 0.297 ± 0.239        | 0.725 ± 0.287        | 0.775 ± 0.287        | 0.385 ± 0.252        | 0.284 ± 0.098        | 0.408 ± 0.250 |
| glass0-1-6,vs,2                | 0.294 ± 0.091        | <b>0.315 ± 0.098</b> | 0.276 ± 0.073        | 0.283 ± 0.081        | 0.285 ± 0.076        | 0.194 ± 0.057        | 0.292 ± 0.081        | 0.293 ± 0.093        | 0.260 ± 0.084        | 0.181 ± 0.089        | 0.262 ± 0.088 |
| glass0-1-6,vs,2                | 0.837 ± 0.170        | <b>0.845 ± 0.198</b> | 0.837 ± 0.170        | 0.837 ± 0.170        | 0.840 ± 0.179        | 0.592 ± 0.267        | 0.837 ± 0.170        | 0.837 ± 0.170        | 0.636 ± 0.331        | 0.386 ± 0.134        | 0.465 ± 0.219 |
| glass2                         | 0.189 ± 0.107        | 0.210 ± 0.117        | 0.192 ± 0.106        | 0.185 ± 0.103        | 0.195 ± 0.107        | <b>0.218 ± 0.126</b> | 0.192 ± 0.112        | 0.188 ± 0.106        | 0.171 ± 0.126        | 0.147 ± 0.070        | 0.149 ± 0.073 |
| glass3                         | 0.768 ± 0.106        | 0.755 ± 0.111        | 0.749 ± 0.105        | 0.749 ± 0.105        | <b>0.782 ± 0.125</b> | 0.485 ± 0.113        | 0.770 ± 0.134        | 0.768 ± 0.106        | 0.741 ± 0.153        | 0.445 ± 0.230        | 0.738 ± 0.191 |
| glass5                         | 0.788 ± 0.151        | <b>0.823 ± 0.151</b> | 0.803 ± 0.139        | 0.803 ± 0.139        | 0.771 ± 0.179        | 0.454 ± 0.232        | 0.788 ± 0.151        | 0.788 ± 0.151        | 0.630 ± 0.202        | 0.566 ± 0.207        | 0.438 ± 0.245 |
| page-blocks1-3,vs,4            | 0.650 ± 0.107        | <b>0.801 ± 0.131</b> | 0.658 ± 0.109        | 0.640 ± 0.112        | 0.637 ± 0.128        | 0.490 ± 0.089        | 0.613 ± 0.102        | 0.650 ± 0.107        | 0.516 ± 0.318        | 0.411 ± 0.263        | 0.584 ± 0.217 |
| yeast-0-5-6-7-9,vs,4           | 0.384 ± 0.063        | 0.448 ± 0.079        | 0.390 ± 0.066        | 0.410 ± 0.082        | 0.388 ± 0.083        | 0.391 ± 0.051        | 0.392 ± 0.073        | 0.381 ± 0.064        | <b>0.508 ± 0.106</b> | 0.096 ± 0.003        | 0.361 ± 0.142 |
| yeast-1-2-8-9,vs,7             | 0.072 ± 0.020        | 0.072 ± 0.023        | 0.070 ± 0.021        | 0.074 ± 0.028        | 0.088 ± 0.032        | 0.125 ± 0.029        | 0.071 ± 0.025        | 0.074 ± 0.020        | <b>0.236 ± 0.297</b> | 0.032 ± 0.000        | 0.121 ± 0.138 |
| yeast-1-4-5-8,vs,7             | 0.076 ± 0.024        | 0.080 ± 0.027        | 0.073 ± 0.021        | 0.070 ± 0.016        | 0.080 ± 0.023        | <b>0.095 ± 0.017</b> | 0.068 ± 0.014        | 0.076 ± 0.023        | 0.060 ± 0.038        | 0.044 ± 0.000        | 0.061 ± 0.011 |
| yeast-1,vs,7                   | 0.194 ± 0.039        | 0.211 ± 0.044        | 0.193 ± 0.039        | 0.195 ± 0.058        | 0.190 ± 0.041        | 0.205 ± 0.054        | 0.184 ± 0.052        | 0.193 ± 0.040        | <b>0.556 ± 0.217</b> | 0.068 ± 0.007        | 0.266 ± 0.261 |
| yeast-2,vs,4                   | 0.685 ± 0.065        | 0.710 ± 0.067        | 0.667 ± 0.066        | 0.683 ± 0.058        | 0.651 ± 0.089        | 0.641 ± 0.070        | 0.670 ± 0.063        | 0.689 ± 0.068        | <b>0.826 ± 0.137</b> | 0.291 ± 0.297        | 0.696 ± 0.104 |
| yeast-2,vs,8                   | 0.429 ± 0.292        | <b>0.888 ± 0.121</b> | 0.451 ± 0.277        | 0.493 ± 0.285        | 0.518 ± 0.321        | 0.588 ± 0.095        | 0.555 ± 0.206        | 0.429 ± 0.292        | 0.617 ± 0.343        | 0.044 ± 0.004        | 0.433 ± 0.331 |
| yeast4                         | 0.201 ± 0.031        | 0.255 ± 0.033        | 0.204 ± 0.030        | 0.208 ± 0.030        | 0.207 ± 0.028        | 0.197 ± 0.036        | 0.205 ± 0.029        | 0.201 ± 0.031        | <b>0.387 ± 0.131</b> | 0.034 ± 0.001        | 0.211 ± 0.108 |
| yeast5                         | 0.502 ± 0.067        | 0.541 ± 0.081        | 0.502 ± 0.065        | 0.504 ± 0.072        | 0.515 ± 0.077        | 0.347 ± 0.043        | 0.502 ± 0.064        | 0.502 ± 0.067        | <b>0.555 ± 0.125</b> | 0.030 ± 0.000        | 0.445 ± 0.179 |
| yeast6                         | 0.306 ± 0.042        | 0.336 ± 0.045        | 0.309 ± 0.044        | 0.279 ± 0.039        | 0.320 ± 0.042        | 0.168 ± 0.014        | 0.297 ± 0.045        | 0.306 ± 0.042        | <b>0.464 ± 0.139</b> | 0.025 ± 0.003        | 0.359 ± 0.156 |
| cleveand4,vs,4                 | 0.797 ± 0.159        | 0.792 ± 0.195        | 0.805 ± 0.158        | <b>0.813 ± 0.153</b> | 0.788 ± 0.163        | 0.665 ± 0.093        | 0.802 ± 0.158        | 0.797 ± 0.159        | 0.481 ± 0.172        | 0.369 ± 0.229        | 0.317 ± 0.181 |
| ecoli0-1-4-7,vs,2-3-5-6        | 0.732 ± 0.067        | <b>0.814 ± 0.037</b> | 0.710 ± 0.057        | 0.733 ± 0.068        | 0.711 ± 0.099        | 0.588 ± 0.080        | 0.688 ± 0.108        | 0.732 ± 0.067        | 0.713 ± 0.140        | 0.191 ± 0.166        | 0.617 ± 0.182 |
| ecoli0-1,vs,2-3-5              | 0.777 ± 0.103        | 0.808 ± 0.090        | 0.790 ± 0.102        | 0.768 ± 0.123        | <b>0.810 ± 0.093</b> | 0.669 ± 0.131        | 0.739 ± 0.152        | 0.771 ± 0.105        | 0.755 ± 0.165        | 0.388 ± 0.291        | 0.628 ± 0.217 |
| ecoli0-2-6-7,vs,3-5            | 0.766 ± 0.189        | <b>0.863 ± 0.167</b> | 0.777 ± 0.212        | 0.813 ± 0.192        | 0.803 ± 0.216        | 0.619 ± 0.127        | 0.767 ± 0.173        | 0.766 ± 0.189        | 0.813 ± 0.154        | 0.245 ± 0.120        | 0.660 ± 0.198 |
| ecoli0-6-7,vs,3-5              | 0.805 ± 0.190        | <b>0.858 ± 0.147</b> | 0.768 ± 0.211        | 0.825 ± 0.180        | 0.813 ± 0.185        | 0.627 ± 0.161        | 0.800 ± 0.183        | 0.805 ± 0.190        | 0.817 ± 0.092        | 0.373 ± 0.306        | 0.691 ± 0.210 |
| ecoli0-6-7,vs,2                | 0.786 ± 0.181        | 0.808 ± 0.179        | 0.813 ± 0.175        | 0.768 ± 0.203        | 0.772 ± 0.198        | 0.643 ± 0.152        | 0.771 ± 0.220        | 0.792 ± 0.176        | <b>0.831 ± 0.114</b> | 0.300 ± 0.328        | 0.809 ± 0.107 |
| glass0-1-4-6,vs,2              | <b>0.253 ± 0.082</b> | 0.251 ± 0.122        | 0.237 ± 0.071        | 0.243 ± 0.096        | 0.228 ± 0.109        | 0.191 ± 0.071        | 0.243 ± 0.090        | 0.251 ± 0.083        | 0.127 ± 0.042        | 0.141 ± 0.041        | 0.140 ± 0.069 |
| glass0-1-5,vs,2                | 0.278 ± 0.062        | 0.300 ± 0.086        | 0.278 ± 0.058        | 0.289 ± 0.055        | <b>0.325 ± 0.103</b> | 0.215 ± 0.090        | 0.270 ± 0.057        | 0.279 ± 0.061        | 0.246 ± 0.066        | 0.195 ± 0.121        | 0.201 ± 0.084 |
| yeast-0-2-5-6,vs,3-7-8-9       | 0.503 ± 0.061        | <b>0.636 ± 0.085</b> | 0.489 ± 0.093        | 0.500 ± 0.067        | 0.494 ± 0.108        | 0.502 ± 0.076        | 0.485 ± 0.088        | 0.504 ± 0.061        | 0.449 ± 0.145        | 0.178 ± 0.155        | 0.439 ± 0.085 |
| yeast-0-5-5-9,vs,7-8           | 0.272 ± 0.039        | <b>0.518 ± 0.126</b> | 0.256 ± 0.036        | 0.259 ± 0.040        | 0.283 ± 0.039        | 0.319 ± 0.082        | 0.272 ± 0.047        | 0.270 ± 0.042        | 0.251 ± 0.182        | 0.103 ± 0.008        | 0.187 ± 0.118 |
| abalone-17,vs,7-8-9-10         | 0.174 ± 0.025        | <b>0.246 ± 0.055</b> | 0.172 ± 0.026        | 0.177 ± 0.029        | 0.183 ± 0.030        | 0.198 ± 0.041        | 0.174 ± 0.027        | 0.173 ± 0.025        | 0.244 ± 0.121        | 0.085 ± 0.062        | 0.111 ± 0.068 |
| abalone-19,vs,10-11-12-13      | 0.051 ± 0.010        | <b>0.063 ± 0.028</b> | 0.052 ± 0.009        | 0.053 ± 0.008        | 0.057 ± 0.012        | 0.061 ± 0.018        | 0.051 ± 0.012        | 0.051 ± 0.010        | 0.063 ± 0.027        | 0.029 ± 0.007        | 0.032 ± 0.013 |
| abalone-20,vs,8-9-10           | 0.189 ± 0.054        | 0.231 ± 0.049        | 0.191 ± 0.056        | 0.188 ± 0.052        | 0.202 ± 0.048        | 0.173 ± 0.027        | 0.182 ± 0.048        | 0.189 ± 0.055        | <b>0.266 ± 0.146</b> | 0.050 ± 0.047        | 0.153 ± 0.099 |
| abalone-21,vs,2                | 0.466 ± 0.088        | <b>0.623 ± 0.171</b> | 0.452 ± 0.101        | 0.441 ± 0.083        | 0.463 ± 0.101        | 0.454 ± 0.112        | 0.462 ± 0.117        | 0.472 ± 0.084        | 0.414 ± 0.169        | 0.268 ± 0.209        | 0.497 ± 0.170 |
| flare-F                        | 0.166 ± 0.019        | <b>0.305 ± 0.056</b> | 0.157 ± 0.021        | 0.173 ± 0.021        | 0.161 ± 0.022        | 0.197 ± 0.033        | 0.169 ± 0.025        | 0.166 ± 0.019        | 0.137 ± 0.039        | 0.051 ± 0.018        | 0.182 ± 0.084 |
| kidcup-buffer,zeroflow,vs,back | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | 0.988 ± 0.035        | 0.988 ± 0.035        | 0.988 ± 0.035 |
| kidcup-rookit-innp,vs,back     | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | <b>1.000 ± 0.000</b> | 0.992 ± 0.025        | 0.992 ± 0.025        | 0.992 ± 0.025 |
| kr-vs-kc,svm,vs,light          | 0.785 ± 0.139        | 0.787 ± 0.141        | 0.785 ± 0.139        | 0.781 ± 0.142        | 0.796 ± 0.151        | 0.513 ± 0.089        | <b>0.799 ± 0.143</b> | 0.785 ± 0.139        | 0.262 ± 0.159        | 0.044 ± 0.014        | 0.409 ± 0.302 |
| poker-8-9,vs,2                 | 0.068 ± 0.025        | 0.079 ± 0.047        | 0.065 ± 0.020        | 0.063 ± 0.021        | 0.079 ± 0.033        | 0.060 ± 0.028        | 0.067 ± 0.015        | 0.068 ± 0.025        | <b>0.084 ± 0.091</b> | 0.021 ± 0.013        | 0.066 ± 0.025 |
| poker-8-9,vs,4                 | 0.958 ± 0.068        | <b>0.969 ± 0.062</b> | 0.958 ± 0.068        | 0.940 ± 0.105        | 0.879 ± 0.146        | 0.541 ± 0.085        | 0.887 ± 0.150        | 0.958 ± 0.068        | 0.941 ± 0.176        | 0.941 ± 0.176        | 0.941 ± 0.176 |
| poker-8,vs,6                   | 0.942 ± 0.092        | 0.910 ± 0.111        | 0.942 ± 0.092        | 0.917 ± 0.105        | 0.865 ± 0.149        | 0.579 ± 0.135        | 0.942 ± 0.092        | 0.942 ± 0.092        | 0.933 ± 0.206        | <b>1.000 ± 0.000</b> | 0.901 ± 0.296 |
| poker-9,vs,7                   | <b>0.617 ± 0.435</b> | <b>0.617 ± 0.435</b> | 0.617 ± 0.435        | 0.617 ± 0.435        | 0.525 ± 0.453        | 0.435 ± 0.361        | 0.567 ± 0.416        | <b>0.617 ± 0.435</b> | 0.613 ± 0.474        | 0.459 ± 0.450        | 0.369 ± 0.424 |
| winequality-red-3,vs,2         | 0.068 ± 0.080        | 0.079 ± 0.088        | 0.067 ± 0.080        | 0.067 ± 0.080        | 0.071 ± 0.082        | <b>0.153 ± 0.107</b> | 0.094 ± 0.094        | 0.068 ± 0.080        | 0.052 ± 0.072        | 0.029 ± 0.025        | 0.024 ± 0.042 |
| winequality-red-4              | 0.102 ± 0.010        | 0.108 ± 0.017        | 0.109 ± 0.008        | 0.105 ± 0.010        | 0.107 ± 0.019        | <b>0.125 ± 0.033</b> | 0.105 ± 0.008        | 0.102 ± 0.009        | 0.076 ± 0.042        | 0.049 ± 0.011        | 0.074 ± 0.019 |
| winequality-red-5,vs,6-7       | 0.058 ± 0.028        | 0.055 ± 0.038        | 0.055 ± 0.038        | 0.052 ± 0.027        | 0.051 ± 0.039        | 0.038 ± 0.024        | 0.055 ± 0.029        | 0.058 ± 0.028        | 0.033 ± 0.021        | 0.024 ± 0.017        | 0.040 ± 0.022 |
| winequality-red-8,vs,2         | 0.122 ± 0.019        | 0.144 ± 0.035        | 0.122 ± 0.019        | 0.123 ± 0.019        | <b>0.151 ± 0.030</b> | 0.095 ± 0.031        | 0.132 ± 0.032        | 0.122 ± 0.019        | 0.102 ± 0.038        | 0.069 ± 0.030        | 0.106 ± 0.059 |
| winequality-white-3-9,vs,2     | 0.054 ± 0.028        | 0.039 ± 0.037        | 0.049 ± 0.028        | 0.053 ± 0.027        | 0.065 ± 0.044        | <b>0.172 ± 0.066</b> | 0.052 ± 0.029        | 0.054 ± 0.028        | 0.068 ± 0.095        | 0.020 ± 0.008        | 0.049 ± 0.034 |
| winequality-white-3,vs,7       | 0.051 ± 0.044        | 0.054 ± 0.056        | 0.061 ± 0.047        | 0.058 ± 0.045        | 0.089 ± 0.058        | <b>0.430 ± 0.151</b> | 0.062 ± 0.046        | 0.051 ± 0.044        | 0.055 ± 0.032        | 0.049 ± 0.027        | 0.067 ± 0.029 |
| winequality-white-9,vs,4       | 0.900 ± 0.213        | 0.900 ± 0.213        | 0.900 ± 0.213        | 0.433 ± 0.473        | <b>0.917 ± 0.171</b> | 0.308 ± 0.384        | 0.900 ± 0.213        | 0.900 ± 0.213        | 0.190 ± 0.166        | 0.190 ± 0.166        | 0.190 ± 0.166 |
| zoo-3                          | <b>0.317 ± 0.411</b> | <b>0.317 ± 0.411</b> | 0.317 ± 0.411        | 0.217 ± 0.350        | <b>0.317 ± 0.411</b> | 0.150 ± 0.241        | <b>0.317 ± 0.411</b> | <b>0.317 ± 0.411</b> | 0.122 ± 0.191        | 0.122 ± 0.191        | 0.122 ± 0.191 |
| ecoli1                         | 0.679 ± 0.037        | <b>0.789 ± 0.050</b> | 0.690 ± 0.026        | 0.695 ± 0.031        | 0.693 ± 0.045        | 0.652 ± 0.031        | 0.681 ± 0.036        | 0.678 ± 0.035        | 0.637 ± 0.025        | 0.320 ± 0.184        | 0.691 ± 0.046 |
| ecoli2                         | 0.833 ± 0.047        | <b>0.859 ± 0.042</b> | 0.837 ± 0.050        | 0.845 ± 0.053        | 0.839 ± 0.051        | 0.790 ± 0.065        | 0.831 ± 0.055        | 0.837 ± 0.055        | 0.637 ± 0.177        | 0.286 ± 0.220        | 0.664 ± 0.110 |
| ecoli3                         | 0.504 ± 0.032        | <b>0.555 ± 0.052</b> | 0.494 ± 0.027        | 0.531 ± 0.049        | 0.590 ± 0.026        | 0.447 ± 0.037        | 0.506 ± 0.039        | 0.507 ± 0.031        | 0.500 ± 0.081        | 0.178 ± 0.122        | 0.505 ± 0.150 |
| glass0                         | 0.585 ± 0.058        | <b>0.636 ± 0.050</b> | 0.594 ± 0.057        | 0.579 ± 0.064        | 0.607 ± 0.062        | 0.573 ± 0.090        | 0.600 ± 0.056        | 0.582 ± 0.057        | 0.519 ± 0.043        | 0.492 ± 0.070        | 0.569 ± 0.066 |
| glass1                         | 0.550 ± 0.062        | 0.528 ± 0.056        | 0.542 ± 0.069        | 0.548 ± 0.060        | 0.555 ± 0.074        | 0.555 ± 0.076        | 0.555 ± 0.077        | 0.552 ± 0.068        | <b>0.578 ± 0.103</b> | 0.414 ± 0.041        | 0.505 ± 0.061 |
| haberman                       | 0.421 ± 0.064        | <b>0.507 ± 0.059</b> | 0.428 ± 0.040        | 0.382 ± 0.047        | 0.400 ± 0.048        | 0.455 ± 0.046        | 0.409 ± 0.055        | 0.419 ± 0.052        | 0.444 ± 0.039        | 0.341 ± 0.118        | 0.430 ± 0.083 |
| page-blocks0                   | 0.664 ± 0.017        | <b>0.801 ± 0.026</b> | 0.667 ± 0.019        | 0.690 ± 0.023        | 0.668 ± 0.017        | 0.778 ± 0.044        | 0.659 ± 0.016        | 0.664 ± 0.017        | 0.637 ± 0.165        | 0.393 ± 0.083        | 0.692 ± 0.094 |
| ptms                           | 0.600 ± 0.040        | 0.640 ± 0.033        | 0.606 ± 0.030        | 0.607 ± 0.031        | 0.608 ± 0.038        | 0.620 ± 0.032        | 0.608 ± 0.035        | 0.600 ± 0.040        | <b>0.670 ± 0.049</b> | 0.471 ± 0.032        | 0.626 ± 0.057 |
| vehicle1                       | 0.538 ± 0.022        | 0.530 ± 0.033        | 0.538 ± 0.027        | 0.542 ± 0.028        | 0.549 ± 0.028        | 0.541 ± 0.025        | 0.544 ± 0.025        | 0.540 ± 0.022        | <b>0.594 ± 0.044</b> | 0.518 ± 0.017        | 0.542 ± 0.039 |
| vehicle3                       | 0.515 ± 0.016        | 0.549 ± 0.027        | 0.513 ± 0.020        | 0.515 ± 0.020        | 0.516 ± 0.023        | 0.515 ± 0.022        | 0.514 ± 0.020</      |                      |                      |                      |               |

Table 15. KNN – Recall

| Dataset name                   | SMOTE                | polynom-ft-SMOTE     | Lee                  | SMOBD                | G-SMOTE              | LVQ-SMOTE            | Assembled-SMOTE      | SMOTE-TonekLinks     | JFOTS-pr      | JFOTS-re      | JFOTS-prom    |
|--------------------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|---------------|---------------|---------------|
| abalone19                      | <b>0.200 ± 0.139</b> | 0.062 ± 0.056        | <b>0.200 ± 0.139</b> | <b>0.200 ± 0.139</b> | 0.138 ± 0.087        | 0.175 ± 0.092        | 0.194 ± 0.126        | <b>0.200 ± 0.139</b> | 0.062 ± 0.062 | 0.013 ± 0.025 | 0.169 ± 0.128 |
| abalone19                      | <b>0.543 ± 0.068</b> | 0.486 ± 0.090        | 0.514 ± 0.076        | 0.521 ± 0.088        | 0.486 ± 0.106        | 0.462 ± 0.083        | 0.529 ± 0.086        | <b>0.543 ± 0.068</b> | 0.305 ± 0.140 | 0.186 ± 0.166 | 0.314 ± 0.109 |
| ecoli-0-1-3-7-vs-2-6           | <b>0.700 ± 0.155</b> | <b>0.700 ± 0.155</b> | <b>0.700 ± 0.155</b> | <b>0.700 ± 0.155</b> | <b>0.700 ± 0.155</b> | <b>0.700 ± 0.155</b> | <b>0.700 ± 0.155</b> | <b>0.700 ± 0.155</b> | 0.642 ± 0.224 | 0.642 ± 0.224 | 0.675 ± 0.199 |
| glass0-1-6-vs-2                | 0.600 ± 0.142        | 0.531 ± 0.083        | 0.587 ± 0.145        | 0.589 ± 0.143        | 0.544 ± 0.110        | 0.497 ± 0.142        | <b>0.603 ± 0.145</b> | 0.600 ± 0.142        | 0.414 ± 0.098 | 0.314 ± 0.207 | 0.431 ± 0.195 |
| glass0-1-6-vs-2                | <b>0.850 ± 0.196</b> | <b>0.850 ± 0.196</b> | <b>0.850 ± 0.196</b> | <b>0.850 ± 0.196</b> | 0.810 ± 0.270        | 0.810 ± 0.246        | <b>0.850 ± 0.196</b> | <b>0.850 ± 0.196</b> | 0.790 ± 0.237 | 0.725 ± 0.386 | 0.640 ± 0.322 |
| glass2                         | 0.424 ± 0.259        | 0.426 ± 0.270        | 0.436 ± 0.310        | <b>0.460 ± 0.292</b> | 0.411 ± 0.280        | 0.438 ± 0.236        | 0.435 ± 0.303        | 0.424 ± 0.259        | 0.424 ± 0.200 | 0.365 ± 0.236 | 0.318 ± 0.159 |
| glass5                         | <b>0.850 ± 0.111</b> | 0.802 ± 0.114        | 0.819 ± 0.105        | 0.805 ± 0.132        | 0.783 ± 0.078        | 0.833 ± 0.099        | <b>0.850 ± 0.111</b> | 0.850 ± 0.111        | 0.674 ± 0.122 | 0.555 ± 0.299 | 0.550 ± 0.139 |
| glass5                         | <b>0.885 ± 0.226</b> | <b>0.885 ± 0.226</b> | 0.865 ± 0.241        | <b>0.885 ± 0.226</b> | 0.865 ± 0.224        | 0.780 ± 0.212        | <b>0.885 ± 0.226</b> | <b>0.885 ± 0.226</b> | 0.670 ± 0.241 | 0.775 ± 0.287 | 0.700 ± 0.273 |
| page-blocks-1-3-vs-4           | <b>0.986 ± 0.043</b> | 0.979 ± 0.046        | <b>0.986 ± 0.043</b> | <b>0.986 ± 0.043</b> | 0.914 ± 0.188        | <b>0.986 ± 0.029</b> | 0.971 ± 0.047        | <b>0.986 ± 0.043</b> | 0.736 ± 0.207 | 0.707 ± 0.158 | 0.793 ± 0.222 |
| yeast-0-5-6-7-9-vs-4           | 0.604 ± 0.090        | <b>0.627 ± 0.078</b> | 0.608 ± 0.086        | 0.604 ± 0.085        | 0.596 ± 0.108        | 0.592 ± 0.081        | 0.576 ± 0.069        | 0.600 ± 0.090        | 0.388 ± 0.134 | 0.000 ± 0.000 | 0.385 ± 0.139 |
| yeast-1-2-8-9-vs-2             | <b>0.500 ± 0.100</b> | 0.493 ± 0.095        | 0.493 ± 0.085        | 0.480 ± 0.088        | 0.400 ± 0.133        | 0.453 ± 0.111        | 0.487 ± 0.108        | <b>0.500 ± 0.100</b> | 0.213 ± 0.093 | 0.000 ± 0.000 | 0.173 ± 0.100 |
| yeast-1-4-5-8-vs-2             | 0.407 ± 0.081        | 0.340 ± 0.125        | <b>0.413 ± 0.083</b> | 0.367 ± 0.100        | 0.280 ± 0.102        | 0.333 ± 0.079        | 0.393 ± 0.081        | 0.407 ± 0.075        | 0.127 ± 0.096 | 0.000 ± 0.000 | 0.100 ± 0.131 |
| yeast-1-vs-2                   | 0.620 ± 0.073        | 0.600 ± 0.079        | 0.627 ± 0.080        | <b>0.647 ± 0.085</b> | 0.547 ± 0.107        | 0.540 ± 0.075        | 0.580 ± 0.069        | 0.620 ± 0.073        | 0.260 ± 0.092 | 0.000 ± 0.000 | 0.180 ± 0.171 |
| yeast-2-vs-4                   | 0.792 ± 0.071        | 0.784 ± 0.082        | 0.788 ± 0.077        | 0.792 ± 0.070        | <b>0.800 ± 0.069</b> | 0.777 ± 0.065        | <b>0.800 ± 0.067</b> | 0.792 ± 0.071        | 0.698 ± 0.096 | 0.214 ± 0.329 | 0.690 ± 0.097 |
| yeast-2-vs-8                   | <b>0.700 ± 0.134</b> | 0.650 ± 0.102        | 0.690 ± 0.122        | <b>0.700 ± 0.134</b> | 0.670 ± 0.110        | 0.680 ± 0.125        | <b>0.700 ± 0.134</b> | <b>0.700 ± 0.134</b> | 0.580 ± 0.087 | 0.070 ± 0.210 | 0.640 ± 0.143 |
| yeast4                         | 0.537 ± 0.057        | 0.537 ± 0.075        | 0.537 ± 0.057        | 0.533 ± 0.062        | 0.490 ± 0.072        | <b>0.548 ± 0.098</b> | 0.544 ± 0.082        | 0.537 ± 0.057        | 0.340 ± 0.072 | 0.000 ± 0.000 | 0.313 ± 0.112 |
| yeast5                         | 0.886 ± 0.077        | 0.864 ± 0.073        | 0.877 ± 0.076        | 0.873 ± 0.073        | 0.845 ± 0.071        | <b>0.914 ± 0.103</b> | 0.886 ± 0.071        | 0.886 ± 0.077        | 0.745 ± 0.115 | 0.000 ± 0.000 | 0.650 ± 0.261 |
| yeast6                         | 0.687 ± 0.094        | 0.675 ± 0.080        | 0.687 ± 0.094        | 0.687 ± 0.094        | 0.670 ± 0.096        | <b>0.766 ± 0.073</b> | 0.675 ± 0.094        | 0.687 ± 0.094        | 0.482 ± 0.147 | 0.000 ± 0.000 | 0.576 ± 0.081 |
| development-0-vs-4             | 0.802 ± 0.140        | 0.786 ± 0.070        | <b>0.817 ± 0.052</b> | 0.802 ± 0.140        | 0.783 ± 0.078        | 0.662 ± 0.147        | <b>0.817 ± 0.052</b> | 0.802 ± 0.140        | 0.536 ± 0.185 | 0.493 ± 0.275 | 0.502 ± 0.232 |
| ecoli-0-1-4-7-vs-2-3-5-6       | <b>0.834 ± 0.034</b> | 0.806 ± 0.056        | 0.827 ± 0.048        | 0.813 ± 0.048        | 0.814 ± 0.049        | 0.826 ± 0.060        | <b>0.834 ± 0.034</b> | <b>0.834 ± 0.034</b> | 0.492 ± 0.247 | 0.179 ± 0.222 | 0.665 ± 0.178 |
| ecoli-0-1-vs-2-3-5             | 0.808 ± 0.065        | 0.808 ± 0.065        | 0.800 ± 0.067        | 0.800 ± 0.067        | 0.792 ± 0.067        | 0.800 ± 0.076        | <b>0.817 ± 0.073</b> | 0.808 ± 0.065        | 0.658 ± 0.209 | 0.417 ± 0.348 | 0.700 ± 0.119 |
| ecoli-0-2-6-7-vs-3-5           | 0.745 ± 0.114        | 0.736 ± 0.118        | 0.755 ± 0.129        | 0.736 ± 0.118        | 0.755 ± 0.129        | <b>0.764 ± 0.093</b> | 0.745 ± 0.114        | 0.745 ± 0.114        | 0.636 ± 0.081 | 0.245 ± 0.279 | 0.727 ± 0.070 |
| ecoli-0-6-7-vs-3-5             | 0.764 ± 0.109        | 0.764 ± 0.109        | <b>0.773 ± 0.124</b> | 0.764 ± 0.109        | 0.755 ± 0.129        | 0.745 ± 0.106        | 0.764 ± 0.109        | 0.764 ± 0.109        | 0.645 ± 0.111 | 0.273 ± 0.293 | 0.655 ± 0.145 |
| ecoli-0-6-7-vs-2               | 0.790 ± 0.104        | 0.790 ± 0.125        | 0.790 ± 0.104        | 0.790 ± 0.122        | 0.790 ± 0.104        | <b>0.810 ± 0.094</b> | 0.790 ± 0.104        | 0.790 ± 0.104        | 0.680 ± 0.140 | 0.230 ± 0.257 | 0.760 ± 0.143 |
| glass0-1-4-6-vs-2              | <b>0.497 ± 0.184</b> | 0.472 ± 0.166        | 0.496 ± 0.198        | 0.496 ± 0.198        | 0.424 ± 0.191        | 0.399 ± 0.126        | 0.474 ± 0.204        | 0.485 ± 0.179        | 0.243 ± 0.169 | 0.268 ± 0.258 | 0.261 ± 0.213 |
| glass0-1-5-vs-2                | 0.574 ± 0.135        | 0.561 ± 0.115        | <b>0.597 ± 0.137</b> | 0.562 ± 0.131        | 0.514 ± 0.158        | 0.460 ± 0.120        | 0.575 ± 0.123        | 0.574 ± 0.135        | 0.485 ± 0.172 | 0.322 ± 0.314 | 0.344 ± 0.209 |
| yeast-0-2-5-6-vs-3-7-8-9       | 0.609 ± 0.071        | 0.663 ± 0.057        | <b>0.707 ± 0.057</b> | 0.697 ± 0.052        | 0.681 ± 0.063        | 0.649 ± 0.056        | 0.699 ± 0.061        | 0.699 ± 0.071        | 0.405 ± 0.157 | 0.092 ± 0.126 | 0.424 ± 0.076 |
| yeast-0-5-5-9-vs-7-8           | 0.536 ± 0.062        | 0.492 ± 0.059        | <b>0.540 ± 0.070</b> | 0.520 ± 0.076        | 0.520 ± 0.078        | 0.504 ± 0.108        | 0.520 ± 0.067        | <b>0.540 ± 0.068</b> | 0.220 ± 0.138 | 0.008 ± 0.024 | 0.216 ± 0.172 |
| abalone-17-vs-7-8-9-10         | 0.559 ± 0.092        | 0.469 ± 0.069        | <b>0.566 ± 0.094</b> | 0.552 ± 0.094        | 0.466 ± 0.089        | 0.531 ± 0.097        | 0.545 ± 0.088        | 0.559 ± 0.092        | 0.224 ± 0.069 | 0.210 ± 0.175 | 0.262 ± 0.154 |
| abalone-19-vs-10-11-12-13      | 0.281 ± 0.085        | 0.156 ± 0.050        | 0.287 ± 0.094        | <b>0.294 ± 0.105</b> | 0.188 ± 0.097        | 0.237 ± 0.092        | 0.250 ± 0.101        | 0.281 ± 0.085        | 0.112 ± 0.073 | 0.138 ± 0.142 | 0.150 ± 0.135 |
| abalone-20-vs-8-9-10           | 0.538 ± 0.119        | 0.346 ± 0.052        | 0.554 ± 0.132        | <b>0.562 ± 0.142</b> | 0.302 ± 0.119        | 0.469 ± 0.116        | 0.523 ± 0.175        | 0.531 ± 0.126        | 0.285 ± 0.119 | 0.115 ± 0.180 | 0.338 ± 0.134 |
| abalone-21-vs-2                | <b>0.686 ± 0.178</b> | 0.557 ± 0.162        | 0.657 ± 0.159        | 0.657 ± 0.159        | 0.614 ± 0.170        | 0.614 ± 0.129        | 0.671 ± 0.170        | <b>0.686 ± 0.178</b> | 0.429 ± 0.202 | 0.357 ± 0.241 | 0.429 ± 0.181 |
| flame-F                        | 0.465 ± 0.092        | 0.415 ± 0.079        | 0.460 ± 0.103        | 0.465 ± 0.091        | 0.410 ± 0.094        | <b>0.470 ± 0.081</b> | 0.465 ± 0.081        | 0.465 ± 0.092        | 0.111 ± 0.083 | 0.009 ± 0.018 | 0.148 ± 0.114 |
| kiddeup-bufferoverflow-vs-back | 0.913 ± 0.095        | 0.913 ± 0.095        | 0.913 ± 0.095        | 0.913 ± 0.095        | 0.883 ± 0.100        | <b>0.920 ± 0.083</b> | 0.893 ± 0.085        | 0.913 ± 0.095        | 0.913 ± 0.090 | 0.913 ± 0.090 | 0.913 ± 0.090 |
| kiddeup-rootkit-inmp-vs-back   | <b>0.945 ± 0.045</b> | <b>0.945 ± 0.045</b> | <b>0.945 ± 0.045</b> | <b>0.945 ± 0.045</b> | 0.909 ± 0.091        | 0.891 ± 0.055        | 0.909 ± 0.100        | <b>0.945 ± 0.045</b> | 0.927 ± 0.070 | 0.927 ± 0.070 | 0.927 ± 0.070 |
| kr-vs-k-zero-vs-eight          | 0.887 ± 0.098        | 0.865 ± 0.105        | 0.895 ± 0.098        | 0.895 ± 0.098        | 0.857 ± 0.121        | <b>0.902 ± 0.119</b> | 0.864 ± 0.118        | 0.887 ± 0.098        | 0.520 ± 0.329 | 0.000 ± 0.000 | 0.503 ± 0.353 |
| poker-8-9-vs-2                 | 0.265 ± 0.121        | 0.177 ± 0.072        | 0.280 ± 0.135        | 0.263 ± 0.127        | 0.119 ± 0.092        | <b>0.373 ± 0.103</b> | 0.272 ± 0.129        | 0.265 ± 0.121        | 0.112 ± 0.138 | 0.038 ± 0.079 | 0.121 ± 0.156 |
| poker-8-9-vs-4                 | 0.920 ± 0.081        | 0.841 ± 0.068        | 0.919 ± 0.081        | 0.919 ± 0.081        | 0.823 ± 0.110        | <b>0.983 ± 0.050</b> | 0.896 ± 0.063        | 0.920 ± 0.081        | 0.975 ± 0.075 | 0.952 ± 0.096 | 0.952 ± 0.096 |
| poker-8-vs-6                   | 0.910 ± 0.120        | 0.719 ± 0.112        | 0.910 ± 0.120        | 0.910 ± 0.120        | 0.768 ± 0.107        | <b>0.989 ± 0.033</b> | 0.887 ± 0.157        | 0.910 ± 0.120        | 0.812 ± 0.244 | 0.963 ± 0.225 | 0.728 ± 0.334 |
| poker-9-vs-7                   | <b>0.700 ± 0.312</b> | <b>0.700 ± 0.312</b> | <b>0.700 ± 0.312</b> | <b>0.700 ± 0.312</b> | 0.650 ± 0.278        | 0.600 ± 0.255        | 0.675 ± 0.297        | <b>0.700 ± 0.312</b> | 0.600 ± 0.450 | 0.625 ± 0.375 | 0.475 ± 0.378 |
| winequality-red-3-vs-2         | <b>0.200 ± 0.126</b> | 0.180 ± 0.108        | <b>0.200 ± 0.126</b> | <b>0.200 ± 0.126</b> | 0.180 ± 0.108        | <b>0.200 ± 0.126</b> | 0.180 ± 0.108        | <b>0.200 ± 0.126</b> | 0.120 ± 0.133 | 0.020 ± 0.060 | 0.160 ± 0.120 |
| winequality-red-4              | 0.317 ± 0.052        | 0.271 ± 0.093        | 0.317 ± 0.059        | 0.317 ± 0.044        | 0.280 ± 0.072        | 0.184 ± 0.059        | <b>0.328 ± 0.047</b> | 0.317 ± 0.052        | 0.124 ± 0.064 | 0.083 ± 0.110 | 0.200 ± 0.093 |
| winequality-red-5-vs-6-7       | 0.167 ± 0.134        | 0.167 ± 0.143        | <b>0.178 ± 0.133</b> | <b>0.178 ± 0.133</b> | 0.144 ± 0.112        | 0.133 ± 0.120        | 0.167 ± 0.134        | 0.167 ± 0.134        | 0.144 ± 0.132 | 0.122 ± 0.144 | 0.133 ± 0.083 |
| winequality-red-8-vs-6         | <b>0.378 ± 0.113</b> | 0.344 ± 0.105        | 0.356 ± 0.120        | <b>0.378 ± 0.113</b> | 0.267 ± 0.102        | 0.278 ± 0.102        | 0.367 ± 0.100        | <b>0.378 ± 0.113</b> | 0.256 ± 0.122 | 0.233 ± 0.168 | 0.300 ± 0.165 |
| winequality-white-3-9-vs-2     | <b>0.313 ± 0.068</b> | 0.272 ± 0.075        | <b>0.313 ± 0.076</b> | <b>0.313 ± 0.076</b> | 0.184 ± 0.064        | 0.234 ± 0.115        | 0.272 ± 0.083        | <b>0.313 ± 0.068</b> | 0.121 ± 0.100 | 0.089 ± 0.068 | 0.184 ± 0.107 |
| winequality-white-3-vs-2       | 0.320 ± 0.172        | 0.180 ± 0.133        | <b>0.230 ± 0.185</b> | 0.300 ± 0.190        | 0.180 ± 0.117        | 0.300 ± 0.173        | 0.320 ± 0.204        | 0.320 ± 0.172        | 0.210 ± 0.130 | 0.250 ± 0.186 | 0.170 ± 0.119 |
| winequality-white-9-vs-4       | <b>0.800 ± 0.208</b> | <b>0.800 ± 0.208</b> | <b>0.800 ± 0.208</b> | <b>0.800 ± 0.208</b> | 0.567 ± 0.359        | <b>0.800 ± 0.208</b> | 0.567 ± 0.359        | <b>0.800 ± 0.208</b> | 0.517 ± 0.391 | 0.517 ± 0.391 | 0.517 ± 0.391 |
| zoo-3                          | <b>0.700 ± 0.306</b> | <b>0.700 ± 0.306</b> | <b>0.700 ± 0.306</b> | <b>0.700 ± 0.306</b> | 0.467 ± 0.393        | <b>0.700 ± 0.306</b> | 0.417 ± 0.352        | <b>0.700 ± 0.306</b> | 0.300 ± 0.267 | 0.300 ± 0.267 | 0.300 ± 0.267 |
| ecoli1                         | 0.837 ± 0.048        | 0.829 ± 0.056        | 0.847 ± 0.055        | 0.845 ± 0.053        | <b>0.850 ± 0.054</b> | 0.837 ± 0.063        | 0.839 ± 0.067        | 0.844 ± 0.043        | 0.721 ± 0.127 | 0.146 ± 0.292 | 0.784 ± 0.086 |
| ecoli2                         | <b>0.908 ± 0.062</b> | 0.904 ± 0.067        | <b>0.908 ± 0.062</b> | <b>0.908 ± 0.062</b> | 0.904 ± 0.065        | <b>0.908 ± 0.049</b> | <b>0.908 ± 0.062</b> | <b>0.908 ± 0.062</b> | 0.758 ± 0.139 | 0.188 ± 0.299 | 0.812 ± 0.118 |
| ecoli3                         | 0.840 ± 0.033        | 0.817 ± 0.041        | <b>0.846 ± 0.035</b> | 0.823 ± 0.039        | 0.811 ± 0.067        | 0.835 ± 0.063        | 0.828 ± 0.037        | 0.840 ± 0.023        | 0.670 ± 0.114 | 0.185 ± 0.288 | 0.558 ± 0.223 |
| glass0                         | 0.854 ± 0.052        | <b>0.874 ± 0.053</b> | 0.851 ± 0.061        | 0.866 ± 0.057        | 0.869 ± 0.055        | 0.843 ± 0.052        | 0.869 ± 0.060        | 0.871 ± 0.041        | 0.803 ± 0.104 | 0.657 ± 0.241 | 0.786 ± 0.034 |
| glass1                         | 0.732 ± 0.076        | <b>0.758 ± 0.069</b> | 0.729 ± 0.063        | 0.732 ± 0.067        | 0.718 ± 0.068        | 0.708 ± 0.057        | 0.726 ± 0.054        | 0.732 ± 0.085        | 0.629 ± 0.156 | 0.184 ± 0.260 | 0.647 ± 0.082 |
| haberman                       | 0.546 ± 0.083        | 0.502 ± 0.096        | 0.516 ± 0.127        | 0.516 ± 0.078        | 0.486 ± 0.090        | 0.469 ± 0.090        | 0.509 ± 0.091        | <b>0.548 ± 0.073</b> | 0.393 ± 0.061 | 0.313 ± 0.152 | 0.408 ± 0.103 |
| page-blocks0                   | 0.896 ± 0.023        | 0.846 ± 0.025        | 0.893 ± 0.026        | 0.875 ± 0.027        | 0.884 ± 0.024        | 0.789 ± 0.032        | <b>0.901 ± 0.021</b> | 0.897 ± 0.023        | 0.810 ± 0.041 | 0.841 ± 0.025 | 0.826 ± 0.031 |
| ptma                           | 0.660 ± 0.035        | 0.669 ± 0.037        | 0.664 ± 0.035        | 0.663 ± 0.030        | 0.651 ± 0.033        | 0.640 ± 0.036        | 0.661 ± 0.034        | <b>0.675 ± 0.040</b> | 0.578 ± 0.044 | 0.530 ± 0.101 | 0.637 ± 0.034 |
| vehicle1                       | 0.717 ± 0.054        | 0.713 ± 0.037        | 0.711 ± 0.044        | <b>0.736 ± 0.057</b> | 0.710 ± 0.040        | 0.679 ± 0.052        | 0.726 ± 0.052        | 0.721 ± 0.057        | 0.508 ± 0.090 | 0.671 ± 0.0   |               |