| Dataset | OSB (1) | OKNORAU (2) | TBAC (3) | TBAW (4) | OTBAC (5) | OTBAW (6) |
|--|-------------------|---------------------------------|---------------------------------|--|-----------------------------------|-----------------------------------|
| glass4 | 0.771 ± 0.138 | 0.778 ± 0.139 | 0.764 ± 0.160 | 0.732 ± 0.157 | 0.802 ± 0.157 | 0.779 ± 0.161 |
| ecoli- 0 - 2 - 3 - 4 - vs - 5 | 0.777 ± 0.117 | 0.873 ± 0.092 | 0.902 ± 0.078 | 0.898 ± 0.079 | $0.900 \stackrel{4,6}{\pm} 0.079$ | 0.893 ± 0.080 |
| glass-0-1-6-vs-2 | 0.593 ± 0.096 | $0.587 \stackrel{1}{\pm} 0.128$ | 0.698 ± 0.127 | 0.601 ± 0.127 | 0.709 ± 0.115 | $0.628 \overset{1,2}{\pm} 0.122$ |
| ecoli- 0 - 1 - vs - 5 | 0.830 ± 0.152 | 0.891 ± 0.088 | 0.893 ± 0.080 | 0.893 ± 0.080 | 0.895 ± 0.082 | $0.900 \overset{1,2}{\pm} 0.076$ |
| yeast-1-4-5-8- vs -7 | 0.544 ± 0.022 | 0.574 ± 0.045 | 0.629 ± 0.098 | 0.588 ± 0.071 | $0.628 \stackrel{1,2}{\pm} 0.098$ | 0.592 ± 0.079 |
| ecoli4 | 0.891 ± 0.068 | 0.922 ± 0.079 | 0.933 ± 0.082 | 0.932 ± 0.079 | 0.934 ± 0.080 | 0.932 ± 0.077 |
| $led 7 digit \hbox{-} 0 \hbox{-} 2 \hbox{-} 4 \hbox{-} 5 \hbox{-} 6 \hbox{-} 7 \hbox{-} 8 \hbox{-} 9 \hbox{-} vs \hbox{-} 1$ | 0.859 ± 0.067 | $0.876 \stackrel{1}{\pm} 0.070$ | 0.654 ± 0.090 | $0.859 \overset{1,2}{\pm} 0.118$ | 0.653 ± 0.090 | 0.852 ± 0.123 |
| glass5 | 0.915 ± 0.149 | 0.915 ± 0.149 | 0.908 ± 0.155 | 0.908 ± 0.155 | 0.908 ± 0.155 | 0.908 ± 0.154 |
| ecoli-0-3-4-6- vs -5 | 0.797 ± 0.121 | 0.884 ± 0.110 | $0.898 \stackrel{-}{\pm} 0.090$ | 0.896 ± 0.094 | $0.900 \stackrel{-}{\pm} 0.090$ | $0.891 \stackrel{-}{\pm} 0.097$ |
| yeast - 0 - 5 - 6 - 7 - 9 - vs - 4 | 0.502 ± 0.022 | 0.612 ± 0.146 | 0.794 ± 0.049 | 0.708 ± 0.119 | 0.805 ± 0.049 | 0.714 ± 0.129 |
| yeast6 | 0.653 ± 0.044 | $0.722 \stackrel{1}{\pm} 0.072$ | 0.885 ± 0.056 | 0.857 ± 0.068 | 0.885 ± 0.056 | $0.870 \stackrel{1,2}{\pm} 0.062$ |
| ecoli-0-6-7-vs-5 | 0.834 ± 0.111 | $0.870 \stackrel{1}{\pm} 0.112$ | 0.869 ± 0.093 | 0.860 ± 0.091 | 0.874 ± 0.096 | 0.863 ± 0.099 |
| $glass\hbox{-}0\hbox{-}1\hbox{-}6\hbox{-}vs\hbox{-}5$ | 0.920 ± 0.142 | $0.920 \stackrel{1}{\pm} 0.142$ | 0.886 ± 0.150 | 0.886 ± 0.150 | 0.886 ± 0.150 | 0.886 ± 0.150 |
| ecoli-0-1-3-7- vs -2-6 | 0.844 ± 0.198 | 0.845 ± 0.199 | 0.847 ± 0.203 | 0.843 ± 0.202 | 0.844 ± 0.203 | 0.842 ± 0.202 |
| yeast - 0 - 2 - 5 - 6 - vs - 3 - 7 - 8 - 9 | 0.767 ± 0.058 | 0.769 ± 0.048 | 0.694 ± 0.056 | 0.651 ± 0.049 | 0.772 ± 0.053 | 0.738 ± 0.069 |
| ecoli-0-1-4-7-vs-5-6 | 0.816 ± 0.131 | 0.862 ± 0.112 | 0.838 ± 0.104 | 0.846 ± 0.090 | 0.871 ± 0.104 | 0.892 ± 0.081 |
| yeast5 | 0.798 ± 0.035 | 0.841 ± 0.029 | 0.975 ± 0.021 | 0.973 ± 0.025 | $0.976 \stackrel{1}{\pm} 0.020$ | 0.973 ± 0.027 |
| shuttle- $c2$ - vs - $c4$ | 0.937 ± 0.154 | $0.938 \stackrel{1}{\pm} 0.154$ | 0.915 ± 0.184 | 0.912 ± 0.184 | 0.920 ± 0.176 | 0.917 ± 0.176 |
| ecoli-0-1-4-7- vs -2-3-5-6 | 0.661 ± 0.120 | 0.713 ± 0.126 | 0.689 ± 0.118 | 0.728 ± 0.115 1.3 | 0.769 ± 0.129 $1,2,3,4$ | 0.794 ± 0.123 $1,2,3,4$ |
| yeast - 0 - 3 - 5 - 9 - vs - 7 - 8 | 0.545 ± 0.037 | 0.606 ± 0.084 | 0.695 ± 0.073 $1,2,4,6$ | 0.628 ± 0.076 | 0.698 ± 0.075 | 0.653 ± 0.087 |
| yeast-1- vs -7 | 0.581 ± 0.047 | 0.648 ± 0.094 | 0.680 ± 0.100 $1,4,5$ | 0.650 ± 0.078 | 0.674 ± 0.096 | 0.659 ± 0.086 |
| yeast-1-2-8-9- vs -7 | 0.538 ± 0.024 | 0.573 ± 0.054 | 0.687 ± 0.090 $1,2,4,6$ | 0.613 ± 0.068 | 0.687 ± 0.089 $1,2,4,6$ | 0.626 ± 0.078 $1,2,4$ |
| ecoli- 0 - 1 - 4 - 6 - vs - 5 | 0.881 ± 0.088 | 0.892 ± 0.090 | 0.899 ± 0.080 $1,2,4,6$ | 0.894 ± 0.082 | 0.905 ± 0.078 $1,2,6$ | 0.899 ± 0.084 |
| $glass\hbox{-} 0\hbox{-} 1\hbox{-} 5\hbox{-} vs\hbox{-} 2$ | 0.527 ± 0.112 | 0.578 ± 0.135 | 0.685 ± 0.115 $1,2,4,6$ | 0.581 ± 0.105 | 0.700 ± 0.117 $1,2,4,6$ | 0.594 ± 0.106 |
| yeast-2- vs -4 | 0.556 ± 0.098 | 0.750 ± 0.171 | 0.868 ± 0.066 $1,2,4$ | 0.836 ± 0.091 | 0.870 ± 0.060 $1,2,4,6$ | 0.843 ± 0.098 1.2 |
| glass-0-6-vs-5 | 0.936 ± 0.136 | 0.936 ± 0.136 | 0.875 ± 0.175 | 0.875 ± 0.175 | 0.875 ± 0.175 | $0.875\overset{1,2}{\pm}0.174$ |
| glass2 | 0.624 ± 0.094 | 0.614 ± 0.124 | 0.718 ± 0.115 $1,2,4,6$ | 0.635 ± 0.115 | 0.738 ± 0.116 $1,2,4,6$ | 0.660 ± 0.095 $1,2$ |
| yeast-2- vs -8 | 0.640 ± 0.096 | 0.765 ± 0.086 ₁ | 0.782 ± 0.111 | 0.772 ± 0.098 | 0.799 ± 0.105 $1,2,6$ | 0.784 ± 0.096 1.2 |
| vowel0 | 0.902 ± 0.026 | 0.916 ± 0.025 $1,3,4,6$ | 0.887 ± 0.058 | 0.881 ± 0.054 | 0.930 ± 0.048 | 0.903 ± 0.043 |
| glass-0-4-vs-5 | 0.940 ± 0.112 | 0.940 ± 0.112 | 0.935 ± 0.120 | 0.935 ± 0.120 | 0.940 ± 0.117 | 0.940 ± 0.117 |
| $glass\hbox{-}0\hbox{-}1\hbox{-}4\hbox{-}6\hbox{-}vs\hbox{-}2$ | 0.592 ± 0.131 | 0.594 ± 0.146 | 0.695 ± 0.118 $1,2,4,6$ | 0.628 ± 0.115 | 0.721 ± 0.106 $1,2,4,6$ | 0.642 ± 0.094 |
| yeast4 | 0.530 ± 0.030 | 0.561 ± 0.047 | 0.811 ± 0.065 | 0.675 ± 0.102 | 0.812 ± 0.064 | 0.667 ± 0.119 |
| ecoli-0-4-6- vs -5 | 0.873 ± 0.107 | 0.892 ± 0.101 | 0.901 ± 0.083 | 0.896 ± 0.087 | 0.899 ± 0.083 | 0.900 ± 0.084 |
| page-blocks-1-3-vs-4 | 0.776 ± 0.104 | 0.817 ± 0.127 | 0.754 ± 0.092 | 0.757 ± 0.092 | 0.779 ± 0.108 | 0.756 ± 0.091 |
| yeast - 0 - 2 - 5 - 7 - 9 - vs - 3 - 6 - 8 | 0.541 ± 0.052 | 0.641 ± 0.131 | 0.886 ± 0.032 | 0.831 ± 0.088 | 0.886 ± 0.033 $_{1,2,4}$ | $0.881 \pm 0.055 \\ 1,2,4$ |
| ecoli- 0 - 1 - vs - 2 - 3 - 5 | 0.605 ± 0.156 | 0.752 ± 0.163 | 0.719 ± 0.136 | 0.765 ± 0.130 1.3 | 0.778 ± 0.159 | 0.820 ± 0.134 |
| ecoli-0-6-7- vs -3-5 | 0.620 ± 0.167 | 0.618 ± 0.168 | 0.586 ± 0.121 | 0.600 ± 0.130 | 0.677 ± 0.122 | 0.650 ± 0.148 $1,2,3,4$ |
| ecoli-0-3-4-7-vs-5-6 | 0.833 ± 0.127 | 0.885 ± 0.084 | 0.872 ± 0.080 | 0.883 ± 0.086 | 0.884 ± 0.077 | 0.892 ± 0.075 |
| ecoli-0-2-6-7-vs-3-5 | 0.617 ± 0.158 | 0.626 ± 0.154 | 0.599 ± 0.118 | 0.596 ± 0.121 | 0.693 ± 0.108 all | 0.656 ± 0.140 $1,3,4$ |
| shuttle-c0-vs-c4 | 0.989 ± 0.012 | 0.989 ± 0.012 | 0.992 ± 0.012 $1,2$ | 0.992 ± 0.012 | 0.992 ± 0.012 $1,2$ | 0.992 ± 0.012 $1,2$ |
| ecoli-0-3-4- vs -5 | 0.803 ± 0.128 | 0.890 ± 0.109 | 0.908 ± 0.104 $1,2,4,6$ | $\begin{array}{c} 1,2\\ 0.903 \pm 0.102\\ 1,2 \end{array}$ | 0.907 ± 0.104 $1,2,6$ | 0.901 ± 0.102 $1,2$ |
| | | 1 | 1,2,4,0 | 1,2 | 1,2,0 | 1,4 |

Table 1: Results for BAC metric

| OSB (1) OKNORAU (2) TBAC (3) TBAW (4) OTBAC (5) OTBAW (6) | | | | | | | |
|---|-------|-------|-------|-------|-------|-------|--|
| Mean rank | 2.049 | 3.110 | 3.939 | 2.866 | 5.122 | 3.915 | |
| | _ | 1 | 1,2,4 | 1 | all | 1,4 | |

Table 2: Results for mean ranks according to BAC metric

| Dataset | OSB (1) | OKNORAU (2) | TBAC (3) | TBAW (4) | OTBAC (5) | OTBAW (6) |
|---|-------------------|-----------------------------------|-----------------------------------|------------------------|-----------------------------------|-----------------------------------|
| glass4 | 0.395 ± 0.190 | 0.451 ± 0.204 | 0.470 ± 0.236 | 0.400 ± 0.208 | 0.513 ± 0.218 | 0.459 ± 0.224 |
| ecoli-0-2-3-4- vs -5 | 0.492 ± 0.237 | 0.682 ± 0.199 | 0.796 ± 0.127 | 0.771 ± 0.132 | 0.779 ± 0.132 | $0.748 \stackrel{-}{\pm} 0.144$ |
| $glass\hbox{-} 0\hbox{-} 1\hbox{-} 6\hbox{-} vs\hbox{-} 2$ | 0.196 ± 0.050 | $0.197 \stackrel{1}{\pm} 0.070$ | 0.293 ± 0.106 | 0.202 ± 0.074 | 0.300 ± 0.099 | $0.222 \overset{1,2}{\pm} 0.085$ |
| ecoli-0-1-vs-5 | 0.682 ± 0.285 | 0.819 ± 0.127 | 0.857 ± 0.110 | 0.855 ± 0.110 | 0.858 ± 0.115 | $0.862 \stackrel{1,2}{\pm} 0.110$ |
| yeast-1-4-5-8- vs -7 | 0.090 ± 0.004 | $0.097 \stackrel{1}{\pm} 0.009$ | 0.144 ± 0.052 | 0.111 ± 0.036 | 0.143 ± 0.052 | 0.115 ± 0.042 |
| ecoli4 | 0.449 ± 0.135 | 0.653 ± 0.208 | 0.798 ± 0.169 | 0.759 ± 0.176 | 0.764 ± 0.161 | 0.724 ± 0.171 |
| led7digit-0-2-4-5-6-7-8-9-vs-1 | 0.532 ± 0.103 | $0.630 \stackrel{1}{\pm} 0.152$ | 0.389 ± 0.173 | 0.579 ± 0.176 | 0.386 ± 0.173 | 0.561 ± 0.172 |
| glass5 | 0.721 ± 0.256 | $0.721 \stackrel{all}{\pm} 0.256$ | 0.809 ± 0.278 | 0.809 ± 0.278 | 0.809 ± 0.278 | $0.805 \overset{3.5}{\pm} 0.276$ |
| ecoli- 0 - 3 - 4 - 6 - vs - 5 | 0.467 ± 0.189 | 0.697 ± 0.211 | 0.768 ± 0.154 | 0.761 ± 0.169 | 0.765 ± 0.152 | 0.745 ± 0.175 |
| yeast-0-5-6-7-9-vs-4 | 0.176 ± 0.007 | $0.268 \stackrel{1}{\pm} 0.131$ | 0.443 ± 0.074 | 0.364 ± 0.126 | 0.444 ± 0.076 | 0.354 ± 0.119 |
| yeast6 | 0.067 ± 0.009 | $0.093 \stackrel{1}{\pm} 0.032$ | 0.368 ± 0.050 | 0.274 ± 0.125 | 0.365 ± 0.052 | 0.297 ± 0.122 |
| ecoli-0-6-7-vs-5 | 0.518 ± 0.166 | $0.662 \stackrel{1}{\pm} 0.207$ | $0.741 \stackrel{all}{\pm} 0.156$ | 0.699 ± 0.162 | 0.731 ± 0.155 | 0.690 ± 0.173 |
| $glass\hbox{-} 0\hbox{-} 1\hbox{-} 6\hbox{-} vs\hbox{-} 5$ | 0.798 ± 0.259 | 0.798 ± 0.259 | 0.776 ± 0.267 | 0.776 ± 0.267 | 0.776 ± 0.267 | 0.776 ± 0.267 |
| ecoli-0-1-3-7-vs-2-6 | 0.593 ± 0.344 | $0.615 \stackrel{-}{\pm} 0.357$ | 0.696 ± 0.380 | 0.618 ± 0.358 | 0.659 ± 0.370 | 0.609 ± 0.357 |
| yeast - 0 - 2 - 5 - 6 - vs - 3 - 7 - 8 - 9 | 0.586 ± 0.090 | 0.592 ± 0.076 | 0.512 ± 0.112 | 0.428 ± 0.102 | $0.618 \stackrel{1}{\pm} 0.087$ | 0.566 ± 0.115 |
| ecoli-0-1-4-7-vs-5-6 | 0.645 ± 0.223 | 0.735 ± 0.189 | $0.752 \stackrel{4}{\pm} 0.180$ | 0.752 ± 0.140 | $0.776 \stackrel{all}{\pm} 0.182$ | 0.789 ± 0.141 |
| yeast5 | 0.136 ± 0.022 | 0.168 ± 0.028 | 0.613 ± 0.067 | 0.605 ± 0.088 | 0.614 ± 0.067 | 0.606 ± 0.091 |
| shuttle-c2-vs-c4 | 0.866 ± 0.312 | 0.868 ± 0.309 | 0.833 ± 0.366 | 0.789 ± 0.363 | 0.847 ± 0.347 | 0.803 ± 0.345 |
| ecoli-0-1-4-7-vs-2-3-5-6 | 0.432 ± 0.240 | 0.533 ± 0.233 | 0.500 ± 0.242 | 0.574 ± 0.213 | $0.645 \stackrel{-}{\pm} 0.231$ | 0.656 ± 0.207 |
| yeast - 0 - 3 - 5 - 9 - vs - 7 - 8 | 0.200 ± 0.044 | $0.269 \stackrel{1}{\pm} 0.119$ | $0.365 \stackrel{1}{\pm} 0.094$ | 0.300 ± 0.110 | 0.362 ± 0.101 | 0.321 ± 0.114 |
| yeast-1-vs-7 | 0.144 ± 0.015 | $0.190 \stackrel{1}{\pm} 0.064$ | 0.236 ± 0.077 | 0.188 ± 0.060 | 0.228 ± 0.066 | 0.193 ± 0.055 |
| yeast-1-2-8-9-vs-7 | 0.066 ± 0.003 | $0.072 \stackrel{1}{\pm} 0.008$ | 0.170 ± 0.058 | 0.102 ± 0.051 | 0.170 ± 0.058 | $0.114 \stackrel{1}{\pm} 0.059$ |
| ecoli-0-1-4-6-vs-5 | 0.626 ± 0.173 | $0.712 \stackrel{1}{\pm} 0.180$ | 0.805 ± 0.113 | 0.775 ± 0.121 | 0.798 ± 0.111 | 0.767 ± 0.136 |
| $glass\hbox{-} 0\hbox{-} 1\hbox{-} 5\hbox{-} vs\hbox{-} 2$ | 0.184 ± 0.058 | $0.215 \stackrel{1}{\pm} 0.099$ | 0.294 ± 0.099 | 0.212 ± 0.064 | 0.304 ± 0.098 | 0.220 ± 0.069 |
| yeast-2-vs-4 | 0.221 ± 0.112 | 0.491 ± 0.243 | 0.724 ± 0.112 | 0.643 ± 0.190 | 0.702 ± 0.100 | 0.625 ± 0.158 |
| $glass\hbox{-} 0\hbox{-} 6\hbox{-} vs\hbox{-} 5$ | 0.868 ± 0.249 | 0.868 ± 0.249 | 0.793 ± 0.325 | 0.793 ± 0.325 | 0.793 ± 0.325 | 0.789 ± 0.324 |
| glass2 | 0.194 ± 0.048 | 0.194 ± 0.068 | 0.304 ± 0.105 | 0.201 ± 0.062 | 0.321 ± 0.112 | 0.213 ± 0.058 |
| yeast-2-vs-8 | 0.179 ± 0.172 | 0.357 ± 0.191 | 0.633 ± 0.195 | 0.587 ± 0.234 | 0.629 ± 0.178 | 0.495 ± 0.220 |
| vowel0 | 0.588 ± 0.036 | 0.628 ± 0.035 | 0.806 ± 0.077 | 0.743 ± 0.079 | 0.812 ± 0.065 | 0.653 ± 0.060 |
| glass- 0 - 4 - vs - 5 | 0.879 ± 0.187 | 0.879 ± 0.187 | 0.907 ± 0.189 | 0.907 ± 0.189 | 0.913 ± 0.186 | 0.913 ± 0.186 |
| $glass\hbox{-} 0\hbox{-} 1\hbox{-} 4\hbox{-} 6\hbox{-} vs\hbox{-} 2$ | 0.182 ± 0.056 | 0.186 ± 0.073 | 0.288 ± 0.102 | 0.213 ± 0.074 | 0.308 ± 0.093 | 0.220 ± 0.069 |
| yeast4 | 0.070 ± 0.005 | 0.076 ± 0.008 | 0.324 ± 0.054 | 0.166 ± 0.116 | 0.323 ± 0.054 | 0.174 ± 0.121 |
| ecoli-0-4- 6 - vs - 5 | 0.650 ± 0.184 | $0.742 \stackrel{1}{\pm} 0.200$ | 0.784 ± 0.143 | 0.768 ± 0.153 | 0.775 ± 0.143 | 0.768 ± 0.144 |
| page-blocks-1-3-vs-4 | 0.489 ± 0.149 | $0.538 \stackrel{1}{\pm} 0.167$ | 0.539 ± 0.157 | 0.534 ± 0.151 | 0.554 ± 0.165 | 0.513 ± 0.144 |
| yeast - 0 - 2 - 5 - 7 - 9 - vs - 3 - 6 - 8 | 0.198 ± 0.055 | 0.307 ± 0.195 | 0.642 ± 0.094 | 0.544 ± 0.201 | 0.623 ± 0.082 | $0.620 \stackrel{1}{\pm} 0.105$ |
| ecoli- 0 - 1 - vs - 2 - 3 - 5 | 0.258 ± 0.332 | 0.598 ± 0.328 | 0.550 ± 0.310 | 0.645 ± 0.252 | 0.646 ± 0.327 | 0.733 ± 0.245 |
| ecoli-0-6-7-vs-3-5 | 0.260 ± 0.296 | 0.254 ± 0.297 | $0.226 \stackrel{1}{\pm} 0.279$ | 0.256 ± 0.272 | 0.452 ± 0.238 | 0.355 ± 0.281 |
| ecoli-0-3-4-7-vs-5-6 | 0.563 ± 0.198 | 0.714 ± 0.155 | 0.747 ± 0.125 | 0.744 ± 0.148 | 0.753 ± 0.121 | 0.741 ± 0.147 |
| $ecoli \hbox{-} 0 \hbox{-} 2 \hbox{-} 6 \hbox{-} 7 \hbox{-} vs \hbox{-} 3 \hbox{-} 5$ | 0.269 ± 0.284 | $0.296 \stackrel{1}{\pm} 0.279$ | $0.265 \stackrel{1}{\pm} 0.275$ | 0.254 ± 0.263 | 0.489 ± 0.201 | $0.380 \stackrel{1}{\pm} 0.254$ |
| shuttle- $c0$ - vs - $c4$ | 0.976 ± 0.021 | 0.976 ± 0.021 | 0.992 ± 0.013 | 0.992 ± 0.013 | 0.992 ± 0.013 | 0.992 ± 0.013 |
| ecoli-0-3-4-vs-5 | 0.489 ± 0.211 | 0.720 ± 0.189 1 | $0.797 \pm 0.165 \\ 1,2,4,6$ | $0.769 \pm 0.168 1,2$ | $0.793 \pm 0.162 \\ 1,2,6$ | $0.749 \overset{1,2}{\pm} 0.167$ |

Table 3: Results for F1 metric

| | OSB (1) | OKNORAU (2) | TBAC (3) | TBAW (4) | OTBAC (5) | OTBAW (6) |
|-----------|---------|-------------|----------|----------|-----------|-----------|
| Mean rank | 1.598 | 2.646 | 4.671 | 3.280 | 5.085 | 3.720 |
| | _ | 1 | 1,2,4,6 | 1,2 | 1,2,4,6 | 1,2 |

Table 4: Results for mean ranks according to F1 metric

| Dataset | OSB (1) | OKNORAU (2) | TBAC (3) | TBAW (4) | OTBAC (5) | OTBAW (6) |
|--|---------------------------------|---------------------------------|-----------------------------------|---------------------------|----------------------------------|-----------------------------|
| glass4 | 0.311 ± 0.196 | 0.383 ± 0.211 | 0.434 ± 0.248 | 0.365 ± 0.233 | 0.455 ± 0.222 | 0.391 ± 0.220 |
| ecoli-0-2-3-4-vs-5 | $0.427 \stackrel{-}{\pm} 0.282$ | 0.618 ± 0.257 | 0.790 ± 0.179 | 0.746 ± 0.184 | 0.760 ± 0.187 | 0.710 ± 0.198 |
| $glass\hbox{-} 0\hbox{-} 1\hbox{-} 6\hbox{-} vs\hbox{-} 2$ | 0.111 ± 0.030 | $0.115 \stackrel{1}{\pm} 0.043$ | 0.188 ± 0.073 | 0.119 ± 0.047 | 0.192 ± 0.069 | 0.132 ± 0.057 |
| ecoli-0-1- vs -5 | 0.730 ± 0.312 | 0.879 ± 0.145 | 0.963 ± 0.094 | 0.961 ± 0.100 | 0.957 ± 0.103 | 0.952 ± 0.116 |
| yeast-1-4-5-8-vs-7 | 0.047 ± 0.002 | $0.051 \stackrel{1}{\pm} 0.005$ | 0.084 ± 0.031 | 0.061 ± 0.022 | 0.084 ± 0.031 | 0.064 ± 0.026 |
| ecoli4 | 0.306 ± 0.135 | 0.538 ± 0.241 | 0.752 ± 0.214 | 0.696 ± 0.230 | 0.692 ± 0.207 | 0.638 ± 0.218 |
| $led 7 digit \hbox{-} 0 \hbox{-} 2 \hbox{-} 4 \hbox{-} 5 \hbox{-} 6 \hbox{-} 7 \hbox{-} 8 \hbox{-} 9 \hbox{-} vs \hbox{-} 1$ | 0.395 ± 0.099 | $0.533 \stackrel{1}{\pm} 0.200$ | 0.510 ± 0.245 | 0.484 ± 0.175 | 0.490 ± 0.238 | 0.469 ± 0.158 |
| glass5 | 0.660 ± 0.272 | 0.660 ± 0.272 | 0.850 ± 0.292 | 0.850 ± 0.292 | 0.850 ± 0.292 | 0.843 ± 0.293 |
| ecoli-0-3-4-6- vs -5 | 0.350 ± 0.189 | 0.621 ± 0.245 | 0.734 ± 0.186 | 0.722 ± 0.205 | 0.725 ± 0.185 | 0.701 ± 0.209 |
| yeast - 0 - 5 - 6 - 7 - 9 - vs - 4 | 0.097 ± 0.004 | $0.168 \stackrel{1}{\pm} 0.105$ | 0.321 ± 0.091 | 0.264 ± 0.125 | 0.311 ± 0.081 | 0.238 ± 0.099 |
| yeast6 | 0.035 ± 0.005 | 0.050 ± 0.018 | 0.238 ± 0.038 | 0.171 ± 0.089 | 0.235 ± 0.040 | 0.187 ± 0.086 1.2 |
| ecoli-0-6-7-vs-5 | 0.402 ± 0.181 | 0.590 ± 0.241 | $0.745 \stackrel{all}{\pm} 0.196$ | 0.680 ± 0.215 | 0.715 ± 0.193 | 0.655 ± 0.214 |
| $glass\hbox{-} 0\hbox{-} 1\hbox{-} 6\hbox{-} vs\hbox{-} 5$ | 0.797 ± 0.285 | 0.797 ± 0.285 | 0.827 ± 0.286 | 0.827 ± 0.286 | 0.827 ± 0.286 | 0.827 ± 0.286 |
| ecoli-0-1-3-7-vs-2-6 | 0.570 ± 0.372 | 0.610 ± 0.389 | 0.733 ± 0.401 $1,2,4,6$ | 0.618 ± 0.394 | 0.672 ± 0.397 | 0.606 ± 0.394 |
| yeast - 0 - 2 - 5 - 6 - vs - 3 - 7 - 8 - 9 | 0.611 ± 0.079 | 0.616 ± 0.089 | 0.719 ± 0.111 | 0.692 ± 0.131 $1,2$ | 0.682 ± 0.092 $1,2$ | 0.677 ± 0.098 $1,2$ |
| ecoli-0-1-4-7- vs -5-6 | 0.686 ± 0.243 | 0.763 ± 0.213 | 0.876 ± 0.181 | 0.840 ± 0.160 | 0.832 ± 0.194 | 0.804 ± 0.178 |
| yeast5 | 0.073 ± 0.013 | 0.092 ± 0.017 | 0.448 ± 0.068 1.2 | 0.441 ± 0.083 1.2 | 0.448 ± 0.068 | 0.441 ± 0.084 1.2 |
| shuttle-c2-vs-c4 | 0.872 ± 0.320 | 0.875 ± 0.316 | 0.840 ± 0.366 | 0.773 ± 0.375 | 0.860 ± 0.346 | 0.793 ± 0.359 |
| $ecoli\mbox{-}0\mbox{-}1\mbox{-}4\mbox{-}7\mbox{-}vs\mbox{-}2\mbox{-}3\mbox{-}5\mbox{-}6$ | 0.757 ± 0.319 | 0.812 ± 0.252 | 0.855 ± 0.289 $1,2,6$ | 0.855 ± 0.213 1.6 | 0.910 ± 0.160 $1,2,6$ | 0.783 ± 0.223 |
| yeast-0-3-5-9-vs-7-8 | 0.122 ± 0.082 | 0.207 ± 0.152 | 0.341 ± 0.177 $1,2,5$ | 0.351 ± 0.268 $1.2.6$ | 0.309 ± 0.153 | 0.312 ± 0.216 1.2 |
| yeast-1- vs -7 | 0.078 ± 0.008 | 0.110 ± 0.042 | 0.149 ± 0.053 | 0.110 ± 0.050 | 0.141 ± 0.041 $1,2,4,6$ | 0.112 ± 0.036 |
| $yeast\hbox{-} 1\hbox{-} 2\hbox{-} 8\hbox{-} 9\hbox{-} vs\hbox{-} 7$ | 0.034 ± 0.001 | 0.037 ± 0.004 | 0.102 ± 0.035 $1,2,4,6$ | 0.057 ± 0.034 | 0.102 ± 0.035 $1,2,4,6$ | 0.066 ± 0.038 1.2 |
| ecoli-0-1-4-6- vs -5 | 0.530 ± 0.214 | 0.661 ± 0.236 | 0.833 ± 0.157 $1,2,4,6$ | 0.781 ± 0.171 $1,2,6$ | 0.804 ± 0.161 $1,2,6$ | 0.746 ± 0.180 1.2 |
| glass-0-1-5-vs-2 | 0.105 ± 0.034 | 0.132 ± 0.075 | 0.189 ± 0.068 $1,2,4,6$ | 0.124 ± 0.040 | 0.194 ± 0.068 $1,2,4,6$ | 0.129 ± 0.046 |
| yeast-2-vs-4 | 0.134 ± 0.103 | 0.400 ± 0.242 | 0.708 ± 0.169 | 0.604 ± 0.245 $1,2,6$ | 0.649 ± 0.136 $1,2,6$ | 0.541 ± 0.174 $1,2$ |
| glass-0-6-vs-5 | 0.887 ± 0.254 | 0.887 ± 0.254 | 0.880 ± 0.324 | 0.880 ± 0.324 | 0.880 ± 0.324 | 0.873 ± 0.325 |
| glass2 | 0.110 ± 0.028 | 0.112 ± 0.040 | 0.199 ± 0.077 $1,2,4,6$ | 0.115 ± 0.038 | 0.210 ± 0.084 $1,2,4,6$ | 0.122 ± 0.037 |
| yeast-2-vs-8 | 0.145 ± 0.199 | 0.309 ± 0.236 | 0.822 ± 0.253 | 0.739 ± 0.319 $1,2,6$ | 0.735 ± 0.253 $1,2,6$ | 0.518 ± 0.310 $1,2$ |
| vowel0 | 0.432 ± 0.038 | 0.474 ± 0.040 | 0.836 ± 0.081 | 0.703 ± 0.086 $1,2,6$ | 0.751 ± 0.069 $1,2,4,6$ | 0.519 ± 0.065 $1,2$ |
| glass-0-4-vs-5 | 0.913 ± 0.195 | 0.913 ± 0.195 | 0.980 ± 0.139 1.2 | 0.980 ± 0.139 | 0.980 ± 0.139 $1,2$ | 0.980 ± 0.139 1.2 |
| glass-0-1-4-6-vs-2 | 0.103 ± 0.032 | 0.107 ± 0.043 ₁ | 0.186 ± 0.070 $1,2,4,6$ | 0.127 ± 0.054 $1,2$ | 0.198 ± 0.065 $1,2,4,6$ | 0.132 ± 0.053 $1,2$ |
| yeast4 | 0.037 ± 0.002 | 0.039 ± 0.004 ₁ | 0.210 ± 0.036 $1,2,4,6$ | 0.101 ± 0.082 | 0.210 ± 0.037 $1,2,4,6$ | 0.107 ± 0.083 $1,2,4$ |
| ecoli-0-4-6-vs-5 | 0.545 ± 0.190 | 0.695 ± 0.244 | 0.755 ± 0.177 | 0.731 ± 0.184 | 0.740 ± 0.178 | 0.723 ± 0.175 |
| page-blocks-1-3-vs-4 | 0.431 ± 0.159 | 0.465 ± 0.159 | $0.570 \pm 0.174 \\ 1,2,4,6$ | 0.550 ± 0.166 $1,2,6$ | 0.552 ± 0.169 $1,2,6$ | 0.507 ± 0.163 $1,2$ |
| yeast-0-2-5-7-9-vs-3-6-8 | 0.112 ± 0.045 | 0.213 ± 0.188 | 0.529 ± 0.147 $1,2,5$ | 0.443 ± 0.236 $1,2$ | 0.496 ± 0.121 $1,2$ | 0.493 ± 0.125 $1,2$ |
| ecoli- 0 - 1 - vs - 2 - 3 - 5 | 0.406 ± 0.459 | 0.791 ± 0.371 ₁ | 0.793 ± 0.399 ₁ | 0.873 ± 0.265 | 0.830 ± 0.365 | 0.890 ± 0.234 |
| ecoli-0-6-7-vs-3-5 | 0.290 ± 0.305 | 0.285 ± 0.305 | 0.355 ± 0.426 | 0.390 ± 0.405 | 0.736 ± 0.335 _{all} | 0.503 ± 0.379 $1,2,3,4$ |
| ecoli-0-3-4-7-vs-5-6 | 0.486 ± 0.199 | 0.658 ± 0.181 ₁ | 0.745 ± 0.149 $1,2,6$ | 0.717 ± 0.168 $1,2,6$ | 0.731 ± 0.145 1.2 | 0.691 ± 0.177 $1,2$ |
| ecoli-0-2-6-7-vs-3-5 | 0.329 ± 0.326 | $0.388 \stackrel{1}{\pm} 0.342$ | 0.436 ± 0.434 | 0.372 ± 0.380 | 0.773 ± 0.263 all | 0.552 ± 0.348 $1,4$ |
| shuttle-c0-vs-c4 | 0.974 ± 0.037 | 0.974 ± 0.037 | 1.000 ± 0.000 $1,2$ | 1.000 ± 0.000 $1,2$ | 1.000 ± 0.000 $1,2$ | 1.000 ± 0.000 1.2 |
| ecoli-0-3-4-vs-5 | 0.385 ± 0.225 | 0.663 ± 0.220 ₁ | 0.785 ± 0.180 $1,2,4,6$ | 0.737 ± 0.195 $1,2,6$ | 0.779 ± 0.178 $1,2,6$ | 0.700 ± 0.185 |

Table 5: Results for Precision metric

| | OSB (1) OKNORAU (2) TBAC (3) TBAW (4) OTBAC (5) OTBAW (6) | | | | | | | |
|--------------|---|-------|-------|-------|---------|-------|--|--|
| $Mean\ rank$ | 1.280 | 2.378 | 5.280 | 3.744 | 4.890 | 3.427 | | |
| | _ | 1 | all | 1,2 | 1,2,4,6 | 1,2 | | |

Table 6: Results for mean ranks according to Precision metric

| Dataset | OSB (1) | OKNORAU (2) | TBAC (3) | TBAW (4) | OTBAC (5) | OTBAW (6) |
|--|-----------------------------------|---------------------------------------|-------------------|---------------------------------|---------------------------------|-----------------------------------|
| glass4 | 0.653 ± 0.270 | 0.633 ± 0.272 | 0.580 ± 0.320 | 0.537 ± 0.313 | 0.663 ± 0.310 | 0.633 ± 0.316 |
| ecoli-0-2-3-4- vs -5 | 0.795 ± 0.198 | $0.835 \stackrel{4}{\pm} 0.146$ | 0.835 ± 0.155 | 0.835 ± 0.155 | 0.835 ± 0.155 | $0.835 \stackrel{4}{\pm} 0.155$ |
| $glass\hbox{-} 0\hbox{-} 1\hbox{-} 6\hbox{-} vs\hbox{-} 2$ | 0.845 ± 0.192 | 0.742 ± 0.242 | 0.700 ± 0.236 | 0.765 ± 0.286 | 0.723 ± 0.216 | $0.818 \stackrel{-}{\pm} 0.254$ |
| ecoli- 0 - 1 - vs - 5 | 0.680 ± 0.304 | 0.795 ± 0.178 | 0.790 ± 0.160 | $0.790 \stackrel{3}{\pm} 0.160$ | 0.795 ± 0.163 | 0.805 ± 0.152 |
| yeast-1-4-5-8- vs -7 | 0.990 ± 0.051 | 0.933 ± 0.105 | 0.513 ± 0.193 | 0.760 ± 0.243 | 0.513 ± 0.193 | $0.740 \stackrel{-}{\pm} 0.252$ |
| ecoli4 | 0.945 ± 0.103 | 0.920 ± 0.116 | 0.890 ± 0.159 | 0.900 ± 0.158 | 0.900 ± 0.158 | 0.910 ± 0.156 |
| $led 7 digit \hbox{-} 0 \hbox{-} 2 \hbox{-} 4 \hbox{-} 5 \hbox{-} 6 \hbox{-} 7 \hbox{-} 8 \hbox{-} 9 \hbox{-} vs \hbox{-} 1$ | 0.845 ± 0.118 | 0.836 ± 0.127 | 0.342 ± 0.177 | 0.807 ± 0.251 | 0.342 ± 0.177 | $0.795 \stackrel{-}{\pm} 0.268$ |
| glass5 | 0.850 ± 0.304 | 0.850 ± 0.304 | 0.820 ± 0.312 | 0.820 ± 0.312 | 0.820 ± 0.312 | 0.820 ± 0.312 |
| ecoli-0-3-4-6-vs-5 | 0.855 ± 0.166 | 0.850 ± 0.173 | 0.835 ± 0.170 | 0.835 ± 0.170 | 0.840 ± 0.171 | 0.830 ± 0.176 |
| yeast - 0 - 5 - 6 - 7 - 9 - vs - 4 | 0.981 ± 0.038 | 0.931 ± 0.084 | 0.785 ± 0.125 | 0.809 ± 0.186 | 0.817 ± 0.102 | 0.860 ± 0.143 |
| yeast6 | 0.977 ± 0.087 | 0.940 ± 0.107 | 0.837 ± 0.117 | 0.880 ± 0.100 | $0.837 \stackrel{3}{\pm} 0.117$ | 0.883 ± 0.101 |
| ecoli-0-6-7- vs -5 | 0.835 ± 0.177 | 0.825 ± 0.182 | 0.770 ± 0.179 | 0.770 ± 0.172 | 0.785 ± 0.187 | 0.780 ± 0.184 |
| $glass\hbox{-} 0\hbox{-} 1\hbox{-} 6\hbox{-} vs\hbox{-} 5$ | 0.850 ± 0.287 | 0.850 ± 0.287 | 0.780 ± 0.302 | 0.780 ± 0.302 | 0.780 ± 0.302 | 0.780 ± 0.302 |
| ecoli - 0 - 1 - 3 - 7 - vs - 2 - 6 | 0.700 ± 0.400 | 0.700 ± 0.400 | 0.700 ± 0.400 | 0.700 ± 0.400 | 0.700 ± 0.400 | $0.700 \stackrel{-}{\pm} 0.400$ |
| yeast - 0 - 2 - 5 - 6 - vs - 3 - 7 - 8 - 9 | 0.574 ± 0.120 | 0.579 ± 0.096 | 0.405 ± 0.112 | 0.317 ± 0.098 | 0.574 ± 0.107 | 0.504 ± 0.142 |
| $ecoli\mbox{-}0\mbox{-}1\mbox{-}4\mbox{-}7\mbox{-}vs\mbox{-}5\mbox{-}6$ | 0.660 ± 0.266 | 0.748 ± 0.222 | 0.684 ± 0.208 | 0.704 ± 0.179 | 0.756 ± 0.208 | 0.804 ± 0.162 |
| yeast5 | 0.993 ± 0.034 | 0.993 ± 0.034 | 0.989 ± 0.040 | 0.989 ± 0.040 | 0.991 ± 0.037 | 0.991 ± 0.037 |
| shuttle- $c2$ - vs - $c4$ | 0.880 ± 0.309 | 0.880 ± 0.309 | 0.830 ± 0.368 | 0.830 ± 0.368 | 0.840 ± 0.352 | 0.840 ± 0.352 |
| ecoli-0-1-4-7-vs-2-3-5-6 | 0.330 ± 0.241 | 0.435 ± 0.255 | 0.381 ± 0.236 | 0.463 ± 0.231 | 0.543 ± 0.258 | 0.607 ± 0.243 |
| yeast - 0 - 3 - 5 - 9 - vs - 7 - 8 | 0.944 ± 0.151 | 0.740 ± 0.279 | 0.568 ± 0.237 | 0.570 ± 0.298 | 0.586 ± 0.227 | $0.600 \stackrel{all}{\pm} 0.271$ |
| yeast-1- vs -7 | $0.910 \stackrel{all}{\pm} 0.142$ | $3,4,5,6 \\ 0.783 \pm 0.211$ | 0.613 ± 0.203 | 0.813 ± 0.193 | 0.610 ± 0.201 | 0.790 ± 0.204 |
| $yeast\hbox{-} 1\hbox{-} 2\hbox{-} 8\hbox{-} 9\hbox{-} vs\hbox{-} 7$ | 0.977 ± 0.074 | 0.933 ± 0.120 | 0.527 ± 0.177 | 0.777 ± 0.257 | 0.527 ± 0.177 | 0.733 ± 0.264 |
| ecoli- 0 - 1 - 4 - 6 - vs - 5 | 0.840 ± 0.156 | $3,4,5,6 \\ 0.830 \pm 0.169$ | 0.815 ± 0.164 | 0.810 ± 0.170 | 0.830 ± 0.161 | 0.825 ± 0.167 |
| $glass\hbox{-} 0\hbox{-} 1\hbox{-} 5\hbox{-} vs\hbox{-} 2$ | 0.750 ± 0.234 | 0.680 ± 0.256 | 0.695 ± 0.242 | 0.787 ± 0.231 | 0.732 ± 0.242 | 0.837 ± 0.222 |
| yeast-2- vs -4 | $0.958 \stackrel{2}{\pm} 0.061$ | 0.863 ± 0.112 $3,4,5,6$ | 0.779 ± 0.137 | 0.794 ± 0.131 | 0.794 ± 0.124 | 0.812 ± 0.126 |
| $glass\hbox{-} 0\hbox{-} 6\hbox{-} vs\hbox{-} 5$ | 0.880 ± 0.274 $3,4,5,6$ | 0.880 ± 0.274 $3,4,5,6$ $3,4,5,6$ | 0.750 ± 0.350 | 0.750 ± 0.350 | 0.750 ± 0.350 | 0.750 ± 0.350 |
| glass2 | 0.825 ± 0.192 | 0.737 ± 0.242 | 0.683 ± 0.222 | 0.837 ± 0.209 | 0.725 ± 0.216 | 0.887 ± 0.168 |
| yeast-2-vs-8 | 0.870 ± 0.207 | 0.690 ± 0.221 | 0.575 ± 0.225 | 0.595 ± 0.217 | 0.615 ± 0.213 | 0.645 ± 0.229 |
| vowel0 | 0.929 ± 0.059 | 0.938 ± 0.057 | 0.790 ± 0.119 | 0.797 ± 0.107 | 0.891 ± 0.096 | 0.891 ± 0.090 |
| $glass\hbox{-} 0\hbox{-} 4\hbox{-} vs\hbox{-} 5$ | 0.890 ± 0.229 | $3,4,5,6 \\ 0.890 \pm 0.229$ | 0.870 ± 0.241 | 0.870 ± 0.241 | 0.880 ± 0.235 | 0.880 ± 0.235 |
| $glass\hbox{-} 0\hbox{-} 1\hbox{-} 4\hbox{-} 6\hbox{-} vs\hbox{-} 2$ | 0.797 ± 0.270 | 0.738 ± 0.293 | 0.660 ± 0.232 | 0.788 ± 0.238 | 0.717 ± 0.199 | 0.818 ± 0.213 |
| yeast4 | 0.971 ± 0.052 | 0.951 ± 0.065 | 0.718 ± 0.137 | 0.874 ± 0.152 | 0.722 ± 0.132 | 0.874 ± 0.160 |
| ecoli-0-4-6- vs -5 | 0.850 ± 0.158 | $3,4,5,6 \\ 0.845 \pm 0.165$ | 0.835 ± 0.155 | 0.830 ± 0.161 | 0.835 ± 0.155 | 0.840 ± 0.156 |
| $page-blocks-1\hbox{-}3\hbox{-}vs\hbox{-}4$ | 0.608 ± 0.210 | 0.685 ± 0.257 | 0.537 ± 0.182 | 0.544 ± 0.183 | 0.591 ± 0.215 | 0.548 ± 0.182 |
| $yeast \hbox{-} 0 \hbox{-} 2 \hbox{-} 5 \hbox{-} 7 \hbox{-} 9 \hbox{-} vs \hbox{-} 3 \hbox{-} 6 \hbox{-} 8$ | 0.989 ± 0.027 | 0.953 ± 0.082 | 0.870 ± 0.079 | 0.882 ± 0.094 | 0.882 ± 0.081 | 0.880 ± 0.077 |
| ecoli- 0 - 1 - vs - 2 - 3 - 5 | 0.215 ± 0.313 | $3,4,5,6 \\ 0.509 \pm 0.321$ | 0.438 ± 0.272 | 0.536 ± 0.256 | 0.557 ± 0.319 | 0.646 ± 0.263 |
| ecoli-0-6-7- vs -3-5 | 0.270 ± 0.349 | 0.266 ± 0.351 | 0.185 ± 0.247 | 0.222 ± 0.265 | 0.370 ± 0.250 | 0.324 ± 0.305 |
| ecoli - 0 - 3 - 4 - 7 - vs - 5 - 6 | 0.784 ± 0.270 | 0.832 ± 0.166 | 0.776 ± 0.163 | 0.808 ± 0.174 | 0.804 ± 0.157 | 0.836 ± 0.148 |
| ecoli - 0 - 2 - 6 - 7 - vs - 3 - 5 | 0.266 ± 0.325 | 0.282 ± 0.315 | 0.209 ± 0.240 | 0.215 ± 0.246 | 0.400 ± 0.223 | 0.342 ± 0.287 |
| shuttle-c0-vs-c4 | 0.980 ± 0.025 | $0.980 \stackrel{3}{\pm} 0.025$ | 0.985 ± 0.025 | 0.985 ± 0.025 | 0.985 ± 0.025 | 0.985 ± 0.025 |
| ecoli-0-3-4-vs-5 | 0.820 ± 0.234 | 0.845 ± 0.205 | 0.845 ± 0.205 | 0.845 ± 0.199 | 0.845 ± 0.205 | 0.850 ± 0.200 |

Table 7: Results for Recall metric

| OSB (1) OKNORAU (2) TBAC (3) TBAW (4) OTBAC (5) OTBAW (6) | | | | | | | |
|---|-------|-------|-------|-------|-------|-------|--|
| Mean rank | 4.585 | 4.415 | 1.793 | 2.890 | 3.293 | 4.024 | |
| | 3,4,5 | 3,4,5 | _ | 3 | 3 | 3,4,5 | |

Table 8: Results for mean ranks according to Recall metric

| Dataset | OSB (1) | OKNORAU (2) | TBAC (3) | TBAW (4) | OTBAC (5) | OTBAW (6) |
|--|---|---------------------------------|---------------------------------------|---------------------------|-----------------------------|-----------------------------------|
| glass4 | 0.771 ± 0.138 | 0.778 ± 0.139 | 0.764 ± 0.160 | 0.732 ± 0.157 | 0.802 ± 0.157 | 0.779 ± 0.161 |
| ecoli-0-2-3-4-vs-5 | 0.777 ± 0.117 | $0.873 \stackrel{1}{\pm} 0.092$ | $0.902 \stackrel{4}{\pm} 0.078$ | 0.898 ± 0.079 | 0.900 ± 0.079 | $0.893 \stackrel{-}{\pm} 0.080$ |
| $glass\hbox{-} 0\hbox{-} 1\hbox{-} 6\hbox{-} vs\hbox{-} 2$ | 0.593 ± 0.096 | 0.587 ± 0.128 | 0.698 ± 0.127 | 0.601 ± 0.127 | 0.709 ± 0.115 | 0.628 ± 0.122 |
| ecoli-0-1-vs-5 | 0.830 ± 0.152 | 0.891 ± 0.088 | 0.893 ± 0.080 | 0.893 ± 0.080 | 0.895 ± 0.082 | $0.900 \stackrel{1,2}{\pm} 0.076$ |
| yeast-1-4-5-8- vs -7 | 0.544 ± 0.022 | 0.574 ± 0.045 | 0.629 ± 0.098 | 0.588 ± 0.071 | 0.628 ± 0.098 | 0.592 ± 0.079 |
| ecoli4 | 0.891 ± 0.068 | $0.922 \stackrel{1}{\pm} 0.079$ | 0.933 ± 0.082 | 0.932 ± 0.079 | 0.934 ± 0.080 | 0.932 ± 0.077 |
| $led 7 digit \hbox{-} 0 \hbox{-} 2 \hbox{-} 4 \hbox{-} 5 \hbox{-} 6 \hbox{-} 7 \hbox{-} 8 \hbox{-} 9 \hbox{-} vs \hbox{-} 1$ | 0.859 ± 0.067 | $0.876 \stackrel{1}{\pm} 0.070$ | 0.654 ± 0.090 | 0.859 ± 0.118 | 0.653 ± 0.090 | 0.852 ± 0.123 |
| glass5 | 0.915 ± 0.149 | 0.915 ± 0.149 | 0.908 ± 0.155 | 0.908 ± 0.155 | 0.908 ± 0.155 | 0.908 ± 0.154 |
| ecoli- 0 - 3 - 4 - 6 - vs - 5 | $\begin{array}{c} 3,4,5,6 \\ 0.797 \pm 0.121 \end{array}$ | 0.884 ± 0.110 | 0.898 ± 0.090 | 0.896 ± 0.094 | 0.900 ± 0.090 | 0.891 ± 0.097 |
| yeast - 0 - 5 - 6 - 7 - 9 - vs - 4 | 0.502 ± 0.022 | 0.612 ± 0.146 | 0.794 ± 0.049 | 0.708 ± 0.119 | 0.805 ± 0.049 | 0.714 ± 0.129 |
| yeast6 | 0.653 ± 0.044 | $0.722 \stackrel{1}{\pm} 0.072$ | 0.885 ± 0.056 | 0.857 ± 0.068 | 0.885 ± 0.056 | $0.870\overset{1,2}{\pm}0.062$ |
| $ecoli \hbox{-} 0 \hbox{-} 6 \hbox{-} 7 \hbox{-} vs \hbox{-} 5$ | 0.834 ± 0.111 | 0.870 ± 0.112 | 0.869 ± 0.093 | 0.860 ± 0.091 | 0.874 ± 0.096 | 0.863 ± 0.099 |
| $glass\hbox{-} 0\hbox{-} 1\hbox{-} 6\hbox{-} vs\hbox{-} 5$ | 0.920 ± 0.142 | 0.920 ± 0.142 | 0.886 ± 0.150 | 0.886 ± 0.150 | 0.886 ± 0.150 | 0.886 ± 0.150 |
| ecoli - 0 - 1 - 3 - 7 - vs - 2 - 6 | 0.844 ± 0.198 | 0.845 ± 0.199 | 0.847 ± 0.203 | 0.843 ± 0.202 | 0.844 ± 0.203 | $0.842 \stackrel{-}{\pm} 0.202$ |
| $yeast\hbox{-} 0\hbox{-} 2\hbox{-} 5\hbox{-} 6\hbox{-} vs\hbox{-} 3\hbox{-} 7\hbox{-} 8\hbox{-} 9$ | 0.767 ± 0.058 | 0.769 ± 0.048 | 0.694 ± 0.056 | 0.651 ± 0.049 | 0.772 ± 0.053 | 0.738 ± 0.069 |
| ecoli - 0 - 1 - 4 - 7 - vs - 5 - 6 | 0.816 ± 0.131 | 0.862 ± 0.112 | 0.838 ± 0.104 | 0.846 ± 0.090 | 0.871 ± 0.104 | 0.892 ± 0.081 |
| yeast5 | 0.798 ± 0.035 | 0.841 ± 0.029 | 0.975 ± 0.021 | 0.973 ± 0.025 | 0.976 ± 0.020 | 0.973 ± 0.027 1.2 |
| shuttle- $c2$ - vs - $c4$ | 0.937 ± 0.154 | 0.938 ± 0.154 | 0.915 ± 0.184 | 0.912 ± 0.184 | 0.920 ± 0.176 | 0.917 ± 0.176 |
| ecoli-0-1-4-7- vs -2-3-5-6 | 0.661 ± 0.120 | 0.713 ± 0.126 | 0.689 ± 0.118 | 0.728 ± 0.115 | 0.769 ± 0.129 $1.2.3.4$ | 0.794 ± 0.123 $1,2,3,4$ |
| $yeast\hbox{-}0\hbox{-}3\hbox{-}5\hbox{-}9\hbox{-}vs\hbox{-}7\hbox{-}8$ | 0.545 ± 0.037 | $0.606 \stackrel{1}{\pm} 0.084$ | 0.695 ± 0.073 $1,2,4,6$ | 0.628 ± 0.076 | 0.698 ± 0.075 | 0.653 ± 0.087 |
| yeast-1- vs -7 | 0.581 ± 0.047 | 0.648 ± 0.094 | 0.680 ± 0.100 $1,4,5$ | 0.650 ± 0.078 | 0.674 ± 0.096 | 0.659 ± 0.086 |
| yeast-1-2-8-9-vs-7 | 0.538 ± 0.024 | 0.573 ± 0.054 | 0.687 ± 0.090 $1,2,4,6$ | 0.613 ± 0.068 1.2 | 0.687 ± 0.089 $1,2,4,6$ | 0.626 ± 0.078 $1,2,4$ |
| $ecoli\mathchar`-0\mathchar`-4\mathchar`-6\mathchar`-vs\mathchar`-5$ | 0.881 ± 0.088 | 0.892 ± 0.090 | 0.899 ± 0.080 $1,2,4,6$ | 0.894 ± 0.082 | 0.905 ± 0.078 $1,2,6$ | 0.899 ± 0.084 |
| $glass\hbox{-} 0\hbox{-} 1\hbox{-} 5\hbox{-} vs\hbox{-} 2$ | 0.527 ± 0.112 | 0.578 ± 0.135 | 0.685 ± 0.115 $1,2,4,6$ | 0.581 ± 0.105 | 0.700 ± 0.117 $1,2,4,6$ | 0.594 ± 0.106 |
| yeast-2-vs-4 | 0.556 ± 0.098 | 0.750 ± 0.171 | 0.868 ± 0.066 $1,2,4$ | 0.836 ± 0.091 | 0.870 ± 0.060 $1,2,4,6$ | 0.843 ± 0.098 1.2 |
| $glass\hbox{-} 0\hbox{-} 6\hbox{-} vs\hbox{-} 5$ | 0.936 ± 0.136 | 0.936 ± 0.136 | 0.875 ± 0.175 | 0.875 ± 0.175 | 0.875 ± 0.175 | 0.875 ± 0.174 |
| glass2 | 0.624 ± 0.094 | 0.614 ± 0.124 | 0.718 ± 0.115 $1,2,4,6$ | 0.635 ± 0.115 | 0.738 ± 0.116 $1,2,4,6$ | 0.660 ± 0.095 $1,2$ |
| yeast-2-vs-8 | 0.640 ± 0.096 | 0.765 ± 0.086 | 0.782 ± 0.111 | 0.772 ± 0.098 | 0.799 ± 0.105 $1,2,6$ | 0.784 ± 0.096 $1,2$ |
| vowel0 | 0.902 ± 0.026 | 0.916 ± 0.025 $1,3,4,6$ | 0.887 ± 0.058 | 0.881 ± 0.054 | 0.930 ± 0.048 | 0.903 ± 0.043 |
| glass-0-4-vs-5 | 0.940 ± 0.112 | 0.940 ± 0.112 | 0.935 ± 0.120 | 0.935 ± 0.120 | 0.940 ± 0.117 | 0.940 ± 0.117 |
| $glass\hbox{-}0\hbox{-}1\hbox{-}4\hbox{-}6\hbox{-}vs\hbox{-}2$ | 0.592 ± 0.131 | 0.594 ± 0.146 | 0.695 ± 0.118 $1,2,4,6$ | 0.628 ± 0.115 | 0.721 ± 0.106 $1,2,4,6$ | 0.642 ± 0.094 ₁ |
| yeast4 | 0.530 ± 0.030 | 0.561 ± 0.047 | 0.811 ± 0.065 | 0.675 ± 0.102 $1.2.6$ | 0.812 ± 0.064 | 0.667 ± 0.119 1.2 |
| ecoli- 0 - 4 - 6 - vs - 5 | 0.873 ± 0.107 | 0.892 ± 0.101 | 0.901 ± 0.083 $1,2,4,6$ $1,2,4,6$ | 0.896 ± 0.087 | 0.899 ± 0.083 | $0.900 \overset{1,2}{\pm} 0.084$ |
| page-blocks-1-3-vs-4 | 0.776 ± 0.104 | 0.817 ± 0.127 $1,3,4,6$ | 0.754 ± 0.092 | 0.757 ± 0.092 | 0.779 ± 0.108 $4,6$ | 0.756 ± 0.091 |
| yeast - 0 - 2 - 5 - 7 - 9 - vs - 3 - 6 - 8 | 0.541 ± 0.052 $-$ | 0.641 ± 0.131 1 | 0.886 ± 0.032 $1,2,4$ | 0.831 ± 0.088 $1,2$ | 0.886 ± 0.033 $1,2,4$ | 0.881 ± 0.055 $1,2,4$ |
| ecoli- 0 - 1 - vs - 2 - 3 - 5 | 0.605 ± 0.156 | 0.752 ± 0.163 | 0.719 ± 0.136 ₁ | 0.765 ± 0.130 $1,3$ | 0.778 ± 0.159 $1,2,3$ | 0.820 ± 0.134 |
| ecoli-0-6-7- vs -3-5 | 0.620 ± 0.167 | 0.618 ± 0.168 | 0.586 ± 0.121 | 0.600 ± 0.130 | 0.677 ± 0.122 all | 0.650 ± 0.148 $1,2,3,4$ |
| ecoli - 0 - 3 - 4 - 7 - vs - 5 - 6 | 0.833 ± 0.127 | 0.885 ± 0.084 | 0.872 ± 0.080 | 0.883 ± 0.086 | 0.884 ± 0.077 | 0.892 ± 0.075 |
| ecoli - 0 - 2 - 6 - 7 - vs - 3 - 5 | 0.617 ± 0.158 | $0.626 \stackrel{1}{\pm} 0.154$ | 0.599 ± 0.118 | 0.596 ± 0.121 | 0.693 ± 0.108 all | 0.656 ± 0.140 $1,3,4$ |
| shuttle-c0-vs-c4 | 0.989 ± 0.012 | 0.989 ± 0.012 | 0.992 ± 0.012 $1,2$ | 0.992 ± 0.012 $1,2$ | 0.992 ± 0.012 $1,2$ | 0.992 ± 0.012 $1,2$ |
| ecoli-0-3-4- vs -5 | 0.803 ± 0.128 | 0.890 ± 0.109 | 0.908 ± 0.104 $1,2,4,6$ | 0.902 ± 0.102 $1,2$ | 0.907 ± 0.104 $1,2,6$ | 0.901 ± 0.102 $1,2$ |

Table 9: Results for AUC metric

| | OSB (1) | OKNORAU (2) | TBAC (3) | TBAW (4) | OTBAC (5) | OTBAW (6) |
|--------------|---------|-------------|----------|----------|-----------|-----------|
| $Mean\ rank$ | 2.037 | 3.110 | 3.939 | 2.866 | 5.134 | 3.915 |
| | _ | 1 | 1,2,4 | 1 | all | 1,4 |

Table 10: Results for mean ranks according to AUC metric

| Dataset | OSB (1) | OKNORAU (2) | TBAC (3) | TBAW (4) | OTBAC (5) | OTBAW (6) |
|---|--|---|--------------------------------|---|-----------------------------|---|
| glass4 | 0.733 ± 0.206 | 0.735 ± 0.209 | 0.682 ± 0.290 | 0.642 ± 0.291 | 0.746 ± 0.262 | 0.714 ± 0.276 |
| ecoli-0-2-3-4-vs-5 | 0.755 ± 0.135 | 0.868 ± 0.096 | 0.896 ± 0.087 | 0.892 ± 0.087 | 0.893 ± 0.087 | $0.887 \stackrel{-}{\pm} 0.088$ |
| $glass\hbox{-} 0\hbox{-} 1\hbox{-} 6\hbox{-} vs\hbox{-} 2$ | 0.528 ± 0.079 | 0.545 ± 0.147 | 0.682 ± 0.155 | 0.540 ± 0.149 | 0.699 ± 0.121 | 0.565 ± 0.144 |
| ecoli-0-1-vs-5 | 0.764 ± 0.285 | $0.880 \stackrel{1}{\pm} 0.102$ | 0.882 ± 0.092 | 0.882 ± 0.092 | 0.885 ± 0.094 | $0.891 \stackrel{1}{\pm} 0.086$ |
| yeast-1-4-5-8-vs-7 | 0.304 ± 0.062 | $0.438 \stackrel{1}{\pm} 0.065$ | 0.601 ± 0.142 | $0.503 \stackrel{1}{\pm} 0.120$ | 0.601 ± 0.142 | 0.509 ± 0.130 |
| ecoli4 | 0.888 ± 0.068 | $0.920 \stackrel{1}{\pm} 0.080$ | 0.927 ± 0.091 | 0.927 ± 0.088 | 0.929 ± 0.089 | 0.927 ± 0.087 |
| $led 7 digit \hbox{-} 0\hbox{-} 2\hbox{-} 4\hbox{-} 5\hbox{-} 6\hbox{-} 7\hbox{-} 8\hbox{-} 9\hbox{-} vs\hbox{-} 1$ | 0.856 ± 0.068 | $0.872 \stackrel{1}{\pm} 0.073$ | 0.547 ± 0.177 | 0.835 ± 0.182 | 0.546 ± 0.177 | 0.824 ± 0.192 |
| glass5 | 0.870 ± 0.275 | 0.870 ± 0.275 | 0.859 ± 0.278 | 0.859 ± 0.278 | 0.859 ± 0.278 | 0.859 ± 0.278 |
| ecoli-0-3-4-6- vs -5 | 0.783 ± 0.131 | 0.879 ± 0.115 | 0.891 ± 0.100 | 0.889 ± 0.102 | 0.893 ± 0.099 | 0.884 ± 0.106 |
| yeast - 0 - 5 - 6 - 7 - 9 - vs - 4 | 0.136 ± 0.064 | 0.416 ± 0.281 | 0.789 ± 0.051 | 0.629 ± 0.223 | 0.802 ± 0.048 | 0.626 ± 0.253 |
| yeast6 | 0.558 ± 0.074 | $0.673 \stackrel{1}{\pm} 0.106$ | 0.881 ± 0.061 $1,2,5$ | 0.851 ± 0.078 1.2 | 0.881 ± 0.061 | 0.865 ± 0.067 |
| ecoli-0-6-7-vs-5 | 0.828 ± 0.115 | 0.864 ± 0.119 1.5 | 0.857 ± 0.105 $1,4,6$ | 0.850 ± 0.102 | 0.863 ± 0.109 1.6 | 0.852 ± 0.110 |
| $glass\hbox{-} 0\hbox{-} 1\hbox{-} 6\hbox{-} vs\hbox{-} 5$ | 0.882 ± 0.248 | 0.882 ± 0.248 | 0.843 ± 0.251 | 0.843 ± 0.251 | 0.843 ± 0.251 | 0.843 ± 0.251 |
| ecoli-0-1-3-7-vs-2-6 | 0.737 ± 0.385 | 0.737 ± 0.385 | 0.740 ± 0.387 $1,2,4,6$ | 0.737 ± 0.385 | 0.739 ± 0.386 | 0.736 ± 0.384 |
| yeast-0-2-5-6-vs-3-7-8-9 | 0.737 ± 0.082 $3,4,6$ | 0.743 ± 0.062 $3,4,6$ | 0.624 ± 0.090 | 0.552 ± 0.084 | 0.743 ± 0.071 $3,4,6$ | 0.692 ± 0.104 $3,4$ |
| ecoli-0-1-4-7-vs-5-6 | 0.774 ± 0.201 | 0.843 ± 0.143 | 0.807 ± 0.165 | 0.827 ± 0.109 | 0.847 ± 0.166 | 0.882 ± 0.093 $1,2,3,4$ |
| yeast5 | 0.772 ± 0.046 | 0.826 ± 0.034 | 0.975 ± 0.022 1.2 | 0.973 ± 0.026 1.2 | 0.976 ± 0.020 1.2 | 0.973 ± 0.028 1.2 |
| shuttle- $c2$ - vs - $c4$ | 0.885 ± 0.300 | 0.886 ± 0.300 | 0.834 ± 0.366 | 0.831 ± 0.365 | 0.848 ± 0.347 | 0.845 ± 0.345 |
| ecoli-0-1-4-7-vs-2-3-5-6 | 0.522 ± 0.235 | 0.620 ± 0.215 | 0.573 ± 0.228 ₁ | 0.652 ± 0.186 1.3 | 0.711 ± 0.187 $1,2,3$ | 0.754 ± 0.166 $1,2,3,4$ |
| yeast-0-3-5-9-vs-7-8 | 0.317 ± 0.108 | 0.484 ± 0.157 ₁ | 0.651 ± 0.136 $1,2,4,6$ | 0.541 ± 0.136 | 0.660 ± 0.134 | 0.586 ± 0.150 $1,2$ |
| yeast-1-vs-7 | 0.461 ± 0.074 | 0.600 ± 0.137 | 0.665 ± 0.113 $1,2,4,5$ | 0.608 ± 0.084 | 0.660 ± 0.109 $1,2,4$ | 0.622 ± 0.100 |
| yeast-1-2-8-9- vs -7 | 0.302 ± 0.060 | 0.437 ± 0.065 | 0.657 ± 0.119 $1.2.4.6$ | 0.522 ± 0.106 1.2 | 0.657 ± 0.119 $1.2.4.6$ | 0.544 ± 0.122 1.2 |
| ecoli- 0 - 1 - 4 - 6 - vs - 5 | 0.876 ± 0.093 | 0.885 ± 0.099 _{1,4} | 0.890 ± 0.091 $1,2,4$ | 0.885 ± 0.094 | 0.897 ± 0.088 $1,2,6$ | 0.891 ± 0.095 $1,2,3$ |
| $glass\hbox{-} 0\hbox{-} 1\hbox{-} 5\hbox{-} vs\hbox{-} 2$ | 0.461 ± 0.103 | 0.545 ± 0.144 $1,4,6$ | 0.665 ± 0.148 $1,2,4,6$ | 0.515 ± 0.109 | 0.680 ± 0.147 $1,2,4,6$ | 0.512 ± 0.118 |
| yeast-2-vs-4 | 0.326 ± 0.183 | 0.683 ± 0.255 ₁ | 0.859 ± 0.076 $1,2,4$ | 0.822 ± 0.110 1.2 | 0.864 ± 0.068 $1,2,4,6$ | 0.829 ± 0.129 $1,2$ |
| glass-0-6-vs-5 | 0.901 ± 0.246 | 0.901 ± 0.246 $-$ | 0.804 ± 0.322 - | 0.804 ± 0.322 | 0.804 ± 0.322 | 0.803 ± 0.321 |
| glass2 | 0.583 ± 0.079 $-$ | 0.586 ± 0.131 – | 0.700 ± 0.151 $1,2,4,6$ | 0.591 ± 0.123 $-$ | 0.723 ± 0.150 $1,2,4,6$ | 0.613 ± 0.089 |
| yeast-2-vs-8 | 0.539 ± 0.143 | 0.738 ± 0.112 ₁ | 0.738 ± 0.153 | 0.729 ± 0.135 ₁ | 0.764 ± 0.141 $1,2,6$ | 0.750 ± 0.131 $1,2$ |
| vowel0 | 0.901 ± 0.026 ₄ | 0.915 ± 0.024 $1,3,4,6$ | 0.879 ± 0.067 ₄ | 0.875 ± 0.061 | 0.928 ± 0.051 | 0.902 ± 0.045 3.4 |
| glass-0-4-vs-5 | 0.922 ± 0.171 $-$ | 0.922 ± 0.171 $-$ | 0.916 ± 0.178 $-$ | 0.916 ± 0.178 $-$ | 0.921 ± 0.176 - | 0.921 ± 0.176 - |
| glass-0-1-4-6-vs-2 | 0.534 ± 0.131 $-$ | 0.547 ± 0.164 ₁ | 0.676 ± 0.152 $1,2,4,6$ | 0.584 ± 0.112 ₁ | 0.712 ± 0.112 $1,2,4,6$ | 0.591 ± 0.102 ₁ |
| yeast4 | 0.287 ± 0.058 | 0.395 ± 0.083 ₁ | 0.801 ± 0.079 $1,2,4,6$ | 0.589 ± 0.166 $1,2,6$ 0.889 ± 0.095 | 0.803 ± 0.076 $1,2,4,6$ | 0.554 ± 0.207 $1,2$ 0.894 ± 0.091 |
| ecoli-0-4-6-vs-5 | 0.870 ± 0.111 | 0.887 ± 0.108 | 0.894 ± 0.090 $1,4,6$ | 1 | 0.893 ± 0.090 | 1 |
| page-blocks-1-3-vs-4 | 0.745 ± 0.139 | 0.789 ± 0.164 $1,3,4,6$ 0.495 ± 0.216 | 0.711 ± 0.129 | 0.715 ± 0.129 | 0.742 ± 0.145 | 0.715 ± 0.127 |
| yeast-0-2-5-7-9-vs-3-6-8 | 0.275 ± 0.120 | 1 | 0.884 ± 0.034 | 0.818 ± 0.102 $1,2$ 0.693 ± 0.231 | 0.885 ± 0.034 | 0.879 ± 0.059 |
| ecoli-0-1-vs-2-3-5 | 0.296 ± 0.354 | 0.637 ± 0.320 | 0.583 ± 0.313 | 1,3 | 0.672 ± 0.324 | 0.772 ± 0.218 |
| ecoli-0-6-7-vs-3-5 | 0.348 ± 0.368 0.804 ± 0.189 | 0.339 ± 0.371 | 0.275 ± 0.325 | 0.329 ± 0.327 | 0.547 ± 0.253 | 0.451 ± 0.331 $1,2,3,4$ 0.886 ± 0.082 |
| ecoli-0-3-4-7-vs-5-6 | | 0.877 ± 0.094 0.401 ± 0.331 | 0.861 ± 0.091 | 0.873 ± 0.098 0.331 ± 0.315 | 0.875 ± 0.086 | 1 |
| ecoli-0-2-6-7-vs-3-5 | 0.364 ± 0.348 | _ | 0.324 ± 0.317 | _ | 0.595 ± 0.194 | 0.498 ± 0.285 $1,2,3,4$ |
| shuttle-c0-vs-c4 | 0.989 ± 0.013 | 0.989 ± 0.013 | 0.992 ± 0.013 | 0.992 ± 0.013 | 0.992 ± 0.013 | 0.992 ± 0.013 |
| ecoli-0-3-4-vs-5 | 0.779 ± 0.173 | 0.880 ± 0.127 ₁ | $0.897 \pm 0.126 \\ 1,2,4,6$ | $\begin{array}{c c} 0.893 \pm 0.122 \\ & 1,2 \end{array}$ | 0.897 ± 0.125 $1,2,6$ | 0.891 ± 0.122 $1,2$ |

Table 11: Results for GMEAN metric

| | OSB (1) OKNORAU (2) TBAC (3) TBAW (4) OTBAC (5) OTBAW (6) | | | | | | | |
|-----------|---|-------|-------|-------|-------|-------|--|--|
| Mean rank | 2.085 | 3.329 | 3.890 | 2.866 | 5.037 | 3.793 | | |
| | _ | 1 | 1,4 | _ | all | 1,4 | | |

Table 12: Results for mean ranks according to GMEAN metric