| Dataset  | GNB (1)                         | OSB (2)                         | OKNORAU (3)                       | TBAC (4)   | OTBAC (5)  | TBAW (6)                          | OTBAW (7)                         |
|--|---------------------------------|---------------------------------|-----------------------------------|--|--|-----------------------------------|-----------------------------------|
| glass-0-1-6-vs-2   | $0.565 \pm 0.111$               | $0.568 \pm 0.113$               | $0.600 \pm 0.145$                 | $0.713 \pm 0.117$  | $0.717 \pm 0.116$  | $0.613 \pm 0.108$                 | $0.614 \pm 0.106$                 |
| ecoli-0-3-4-7-vs-5-6   | $0.778 \pm 0.080$               | $0.835 \pm 0.079$               | $0.896 \pm 0.076$                 | $0.885 \pm 0.078$  | $0.885 \pm 0.078$  | $0.891 \pm 0.085$                 | $0.890 \pm 0.079$                 |
| shuttle- $c2$ - $vs$ - $c4$  | $0.988 \pm 0.022$               | $0.999 \stackrel{1}{\pm} 0.005$ | $0.999 \pm 0.005$                 | $0.890 \stackrel{1,2}{\pm} 0.200$                                      | $0.890 \stackrel{1,2}{\pm} 0.200$                                    | $0.887 \pm 0.202$                 | $0.888 \stackrel{1,2}{\pm} 0.200$ |
| $glass\hbox{-}0\hbox{-}1\hbox{-}4\hbox{-}6\hbox{-}vs\hbox{-}2$   | $0.579 \pm 0.128$               | $0.590 \pm 0.132$               | $0.617 \pm 0.150$                 | $0.728 \pm 0.104$  | $0.727 \pm 0.103$  | $0.635 \pm 0.091$                 | $0.639 \pm 0.085$                 |
| yeast-1-2-8-9-vs-7   | $0.540 \pm 0.011$               | $0.541 \pm 0.012$               | $0.590 \pm 0.048$                 | $^{1,2,3,6,7}_{0.685 \pm 0.087}$                                       | $0.685 \pm 0.087$  | $0.601 \pm 0.056$                 | $0.607 \pm 0.058$                 |
| ecoli-0-1-4-6-vs-5   | $0.847 \pm 0.098$               | $0.890 \pm 0.088$               | $0.901 \pm 0.089$                 | $0.899 \pm 0.079$  | $0.902 \pm 0.076$  | $0.895 \pm 0.081$                 | $0.902 \pm 0.077$                 |
| $glass\hbox{-} 0\hbox{-} 1\hbox{-} 6\hbox{-} vs\hbox{-} 5$   | $0.956 \pm 0.109$               | $0.922 \stackrel{1}{\pm} 0.140$ | $0.923 \pm 0.141$                 | $0.861 \pm 0.151$  | $0.861 \pm 0.151$  | $0.861 \pm 0.151$                 | $0.861 \pm 0.151$                 |
| yeast-2- $vs$ -4   | $0.608 \pm 0.128$               | $0.580 \pm 0.102$               | $0.849 \pm 0.099$                 | $0.856 \pm 0.071$  | $0.856 \pm 0.070$  | $0.848 \pm 0.083$                 | $0.856 \pm 0.069$                 |
| glass-0-6-vs-5   | $0.945 \pm 0.140$               | $0.925 \pm 0.149$               | $0.925 \pm 0.149$                 | $0.840 \pm 0.178$  | $0.840 \pm 0.178$  | $0.840 \pm 0.178$                 | $0.840 \pm 0.178$                 |
| ecoli-0-3-4-6-vs-5   | $0.755 \pm 0.102$               | $0.816 \pm 0.103$               | $0.896 \pm 0.105$                 | $0.897 \pm 0.089$  | $0.894 \pm 0.087$  | $0.897 \pm 0.090$                 | $0.891 \pm 0.092$                 |
| yeast-0-3-5-9-vs-7-8   | $0.550 \pm 0.018$               | $0.540 \stackrel{1}{\pm} 0.022$ | $0.698 \pm 0.081$                 | $0.661 \pm 0.070$  | $0.684 \pm 0.067$  | $0.638 \stackrel{1,2}{\pm} 0.055$ | $0.658 \stackrel{1,2}{\pm} 0.066$ |
| $glass\hbox{-} 0\hbox{-} 1\hbox{-} 5\hbox{-} vs\hbox{-} 2$   | $0.555 \pm 0.134$               | $0.520 \pm 0.115$               | $0.614 \pm 0.144$                 | $0.706 \pm 0.114$  | $0.704 \pm 0.115$  | $0.578 \pm 0.083$                 | $0.582 \pm 0.085$                 |
| ecoli-0-6-7-vs-5   | $0.813 \pm 0.124$               | $0.841 \pm 0.105$               | $0.879 \pm 0.098$                 | $0.869 \pm 0.099$  | $0.862 \pm 0.099$  | $0.869 \pm 0.103$                 | $0.868 \stackrel{2}{\pm} 0.099$   |
| ecoli-0-2-3-4- $vs$ -5   | $0.780 \stackrel{-}{\pm} 0.098$ | $0.836 \pm 0.096$               | $0.897 \pm 0.086$                 | $0.904 \pm 0.077$  | $0.904 \stackrel{1}{\pm} 0.078$                                      | $0.902 \pm 0.078$                 | $0.904 \overset{1,2}{\pm} 0.081$  |
| ecoli4   | $0.886 \pm 0.083$               | $0.898 \stackrel{1}{\pm} 0.063$ | $0.932 \pm 0.071$                 | $0.933 \pm 0.081$  | $0.934 \pm 0.082$  | $0.940 \pm 0.079$                 | $0.937 \pm 0.080$                 |
| yeast5   | $0.825 \pm 0.024$               | $0.803 \pm 0.029$               | $0.846 \pm 0.024$                 | $0.972 \pm 0.024$  | $0.972 \pm 0.024$  | $0.965 \pm 0.036$                 | $0.964 \pm 0.040$                 |
| ecoli-0-4-6- $vs$ -5   | $0.851 \pm 0.114$               | $0.884 \pm 0.103$               | $0.900 \pm 0.095$                 | $0.902 \pm 0.082$  | $0.901 \pm 0.082$  | $0.901 \pm 0.084$                 | $0.902 \pm 0.084$                 |
| $led 7 digit \hbox{-} 0 \hbox{-} 2 \hbox{-} 4 \hbox{-} 5 \hbox{-} 6 \hbox{-} 7 \hbox{-} 8 \hbox{-} 9 \hbox{-} vs \hbox{-} 1$ | $0.853 \pm 0.073$               | $0.874 \stackrel{1}{\pm} 0.063$ | $0.880 \stackrel{1,2}{\pm} 0.067$ | $0.653 \pm 0.089$  | $0.654 \pm 0.091$  | $0.885 \pm 0.076$                 | $0.886 \pm 0.076$                 |
| ecoli- $0$ - $1$ - $vs$ - $5$  | $0.800 \pm 0.143$               | $0.865 \pm 0.121$               | $0.900 \pm 0.084$                 | $0.900 \pm 0.075$  | $0.900 \pm 0.075$  | $0.907 \pm 0.075$                 | $0.907 \pm 0.074$                 |
| ecoli - 0 - 2 - 6 - 7 - vs - 3 - 5   | $0.586 \pm 0.145$               | $0.638 \pm 0.155$               | $0.710 \pm 0.139$                 | $0.834 \pm 0.102$  | $0.828 \pm 0.105$  | $0.822 \pm 0.089$                 | $0.825 \pm 0.097$                 |
| $ecoli \hbox{-} 0 \hbox{-} 1 \hbox{-} 4 \hbox{-} 7 \hbox{-} vs \hbox{-} 2 \hbox{-} 3 \hbox{-} 5 \hbox{-} 6$                  | $0.651 \pm 0.090$               | $0.667 \pm 0.117$               | $0.773 \pm 0.136$                 | $0.814 \pm 0.106$  | $0.855 \pm 0.093$  | $0.813 \pm 0.092$                 | $0.868 \pm 0.082$                 |
| shuttle-c0-vs-c4   | $0.990 \pm 0.012$               | $0.989 \pm 0.013$               | $0.989 \pm 0.013$                 | $0.994 \pm 0.009$  | $0.994 \pm 0.009$  | $0.994 \pm 0.009$                 | $0.994 \pm 0.009$                 |
| ecoli-0-6-7- $vs$ -3-5   | $0.587 \pm 0.158$               | $0.630 \pm 0.175$               | $0.726 \pm 0.148$                 | $0.821 \pm 0.098$  | $0.829 \pm 0.106$  | $0.815 \pm 0.089$                 | $0.829 \pm 0.092$                 |
| vowel0   | $0.915 \pm 0.037$               | $0.905 \pm 0.025$               | $0.925 \pm 0.027$                 | $0.878 \pm 0.060$  | $0.919 \pm 0.051$  | $0.878 \pm 0.056$                 | $0.896 \pm 0.042$                 |
| glass4   | $0.572 \pm 0.129$               | $0.763 \pm 0.154$               | $0.785 \pm 0.138$                 | $0.756 \pm 0.151$  | $0.772 \pm 0.145$  | $0.695 \pm 0.163$                 | $0.718 \pm 0.162$                 |
| yeast - 0 - 5 - 6 - 7 - 9 - vs - 4   | $0.501 \pm 0.026$               | $0.501 \pm 0.022$               | $0.713 \pm 0.135$                 | $0.797 \pm 0.049$  | $0.804 \pm 0.050$  | $0.718 \pm 0.095$                 | $0.750 \pm 0.102$                 |
| yeast - 0 - 2 - 5 - 6 - vs - 3 - 7 - 8 - 9   | $0.675 \pm 0.048$               | $0.772 \pm 0.049$ $1,4,5,6,7$   | $0.774 \pm 0.046 \\ 1,4,5,6,7$    | $0.718 \pm 0.053$ $1.6$  | $ \begin{array}{c} 1,2,3,6,7\\0.754 \pm 0.056\\1,4,6,7 \end{array} $ | $0.652 \pm 0.055$                 | $0.705 \pm 0.069$                 |
| ecoli- $0$ - $1$ - $vs$ - $2$ - $3$ - $5$  | $0.607 \pm 0.157$               | $0.625 \pm 0.171$               | $0.821 \pm 0.135$                 | $0.845 \pm 0.108$  | $0.845 \pm 0.108$  | $0.854 \pm 0.092$                 | $0.866 \pm 0.081$ $1,2,3$         |
| ecoli-0-3-4- $vs$ -5   | $0.788 \pm 0.105$               | $0.846 \pm 0.111$               | $0.897 \pm 0.107$ $1,2$           | $0.906 \pm 0.103$ $1,2,3$  | $0.906 \pm 0.104$ $1,2,3$  | $0.909 \pm 0.102$ $1,2,3$         | $0.908 \pm 0.102$ $1,2,3$         |
| glass5   | $0.948 \pm 0.103$               | $0.904 \pm 0.152$ $4.5$         | $0.905 \pm 0.153$                 | $0.893 \pm 0.165$  | $0.898 \pm 0.156$ $6.7$  | $0.891 \pm 0.164$                 | $0.896 \pm 0.156$                 |
| yeast4   | $0.551 \pm 0.039$               | $0.526 \pm 0.025$               | $0.585 \pm 0.046$ $1.2$           | $0.809 \pm 0.068$ $1,2,3,6,7$  | $0.812 \pm 0.065$  | $0.672 \pm 0.071$ $1,2,3,7$       | $0.649 \pm 0.090$ $1,2,3$         |
| $glass\hbox{-} 0\hbox{-} 4\hbox{-} vs\hbox{-} 5$   | $0.975 \pm 0.083$               | $0.945 \pm 0.111$               | $0.950 \pm 0.108$                 | $0.925 \pm 0.134$  | $0.925 \pm 0.134$  | $0.925 \pm 0.134$                 | $0.925 \pm 0.134$                 |
| yeast6   | $0.636 \pm 0.023$               | $0.640 \pm 0.025$               | $0.769 \pm 0.044$ $1,2$           | $0.888 \pm 0.056$  | $0.887 \pm 0.056$  | $0.837 \pm 0.045$ $1,2,3,7$       | $0.832 \pm 0.061$ $1,2,3$         |
| page-blocks-1-3-vs-4   | $0.765 \pm 0.095$               | $0.772 \pm 0.101$               | $0.821 \pm 0.127$ $1,2,4,6,7$     | $0.755 \pm 0.106$ $6,7$  | $0.793 \pm 0.108$  | $0.740 \pm 0.089$                 | $0.753 \pm 0.090$                 |
| yeast-1-vs-7   | $0.594 \pm 0.037$               | $0.594 \pm 0.040$               | $0.696 \pm 0.104$                 | $0.666 \pm 0.093$ $1,2$  | $0.660 \pm 0.099$ $1,2$  | $0.675 \pm 0.088$ $1.2$           | $0.677 \pm 0.089$ $1,2$           |
| ecoli - 0 - 1 - 3 - 7 - vs - 2 - 6   | $0.831 \pm 0.193$               | $0.844 \pm 0.199$ $1,6,7$       | $0.845 \pm 0.200$ $1,6,7$         | $0.843 \pm 0.202$ $1.5.6.7$  | $0.840 \pm 0.204$ $1.6.7$  | $0.837 \pm 0.199$                 | $0.834 \pm 0.199$                 |
| yeast-1-4-5-8- $vs$ -7   | $0.544 \pm 0.012$               | $0.546 \pm 0.015$               | $0.571 \pm 0.062$                 | $0.630 \pm 0.097$ $1,2,3,6,7$  | $0.629 \pm 0.098$ $1,2,3,6,7$  | $0.579 \pm 0.063$                 | $0.586 \pm 0.072$ $1,2$           |
| ecoli - 0 - 1 - 4 - 7 - vs - 5 - 6   | $0.742 \pm 0.131$               | $0.829 \pm 0.136$               | $0.882 \pm 0.115$                 | $0.863 \pm 0.108$  | $0.870 \pm 0.104$  | $0.859 \pm 0.089$                 | $0.886 \pm 0.083$                 |
| yeast-2-vs-8   | $0.637 \pm 0.090$               | $0.703 \pm 0.077$               | $0.785 \pm 0.112 \\ 1,2,4,5,6$    | $0.776 \pm 0.111$ $1,2$  | $0.776 \pm 0.111$  | $0.779 \pm 0.110$ $1,2$           | $0.775 \pm 0.112$                 |
| yeast - 0 - 2 - 5 - 7 - 9 - vs - 3 - 6 - 8   | $0.576 \pm 0.028$               | $0.543 \pm 0.027$               | $0.813 \pm 0.112$                 | $0.899 \pm 0.033$  | $0.898 \pm 0.033$  | $0.868 \pm 0.058$                 | $0.888 \pm 0.054$                 |
| glass2   | $0.607 \stackrel{?}{\pm} 0.098$ | $0.621 \pm 0.093$               | $0.638 \pm 0.123$                 | $ \begin{array}{c} 1,2,3,6,7\\0.740 \pm 0.109\\1,2,3,6,7 \end{array} $ | $ \begin{array}{c} 1,2,3,6\\0.739 \pm 0.109\\1,2,3,6,7 \end{array} $ | $0.658 \pm 0.085$ $1,2$           | $0.661 \pm 0.084$ $1,2$           |
|  | _                               |                                 | 1                                 | 1,2,3,0,7  | 1,2,3,0,7  | 1,2                               | 1,2                               |

Table 1: Results for BAC metric

| $\mid \text{ GNB (1)} \mid \text{ OSB (2)} \mid \text{ OKNORAU (3)} \mid \text{ TBAC (4)} \mid \text{ OTBAC (5)} \mid \text{ TBAW (6)} \mid \text{ OTBAW (7)}$ |       |       |       |       |       |       |       |  |  |
|--|-------|-------|-------|-------|-------|-------|-------|--|--|
| Mean rank  | 2.171 | 2.634 | 4.659 | 4.817 | 5.110 | 3.976 | 4.634 |  |  |
|  | _     | _     | 1,2   | 1,2,6 | 1,2,6 | 1,2   | 1,2,6 |  |  |

Table 2: Results for mean ranks according to BAC metric

| Dataset  | GNB (1)                         | OSB (2)                         | OKNORAU (3)                       | TBAC (4)          | OTBAC (5)         | TBAW (6)                        | OTBAW (7)                         |
|--|---------------------------------|---------------------------------|-----------------------------------|-------------------|-------------------|---------------------------------|-----------------------------------|
| glass-0-1-6-vs-2   | $0.184 \pm 0.057$               | $0.185 \pm 0.062$               | $0.213 \pm 0.103$                 | $0.302 \pm 0.099$ | $0.304 \pm 0.099$ | $0.205 \pm 0.057$               | $0.206 \pm 0.056$                 |
| ecoli - 0 - 3 - 4 - 7 - vs - 5 - 6   | $0.414 \pm 0.114$               | $0.509 \pm 0.136$               | $0.743 \pm 0.106$                 | $0.779 \pm 0.123$ | $0.779 \pm 0.123$ | $0.762 \pm 0.129$               | $0.760 \pm 0.125$                 |
| shuttle-c2-vs-c4   | $0.881 \pm 0.211$               | $0.990 \stackrel{1}{\pm} 0.069$ | $0.990 \pm 0.069$                 | $0.787 \pm 0.398$ | $0.787 \pm 0.398$ | $0.756 \pm 0.393$               | $0.759 \pm 0.395$                 |
| $glass\hbox{-} 0\hbox{-} 1\hbox{-} 4\hbox{-} 6\hbox{-} vs\hbox{-} 2$   | $0.177 \pm 0.060$               | $0.182 \pm 0.062$               | $0.209 \pm 0.089$                 | $0.313 \pm 0.090$ | $0.310 \pm 0.088$ | $0.202 \pm 0.036$               | $0.204 \pm 0.036$                 |
| yeast-1-2-8-9-vs-7   | $0.066 \pm 0.001$               | $0.067 \pm 0.001$               | $0.075 \pm 0.007$                 | $0.169 \pm 0.056$ | $0.169 \pm 0.056$ | $0.090 \stackrel{1}{\pm} 0.041$ | $0.094 \pm 0.044$                 |
| ecoli-0-1-4-6- $vs$ -5   | $0.652 \pm 0.214$               | $0.664 \pm 0.179$               | $0.757 \pm 0.173$                 | $0.805 \pm 0.110$ | $0.806 \pm 0.106$ | $0.780 \pm 0.107$               | $0.793 \pm 0.106$                 |
| $glass\hbox{-} 0\hbox{-} 1\hbox{-} 6\hbox{-} vs\hbox{-} 5$   | $0.807 \pm 0.227$               | $0.774 \pm 0.256$               | $0.790 \stackrel{1,2}{\pm} 0.263$ | $0.747 \pm 0.264$ | $0.747 \pm 0.264$ | $0.740 \pm 0.264$               | $0.740 \pm 0.264$                 |
| yeast-2-vs-4   | $0.301 \pm 0.222$               | $0.234 \pm 0.115$               | $0.616 \pm 0.151$                 | $0.758 \pm 0.110$ | $0.731 \pm 0.106$ | $0.709 \pm 0.168$               | $0.691 \pm 0.121$                 |
| $glass\hbox{-} 0\hbox{-} 6\hbox{-} vs\hbox{-} 5$   | $0.867 \pm 0.273$               | $0.841 \pm 0.279$               | $0.841 \pm 0.279$                 | $0.740 \pm 0.335$ | $0.740 \pm 0.335$ | $0.736 \pm 0.333$               | $0.736 \pm 0.333$                 |
| ecoli-0-3-4-6-vs-5   | $0.384 \pm 0.145$               | $0.476 \pm 0.171$               | $0.738 \pm 0.194$                 | $0.769 \pm 0.151$ | $0.764 \pm 0.146$ | $0.772 \pm 0.156$               | $0.763 \pm 0.161$                 |
| yeast - 0 - 3 - 5 - 9 - vs - 7 - 8   | $0.196 \pm 0.006$               | $0.192 \stackrel{1}{\pm} 0.007$ | $0.325 \stackrel{1,2}{\pm} 0.077$ | $0.392 \pm 0.121$ | $0.415 \pm 0.109$ | $0.366 \pm 0.125$               | $0.378 \stackrel{1,2}{\pm} 0.123$ |
| $glass\hbox{-} 0\hbox{-} 1\hbox{-} 5\hbox{-} vs\hbox{-} 2$   | $0.200 \stackrel{2}{\pm} 0.081$ | $0.180 \pm 0.059$               | $0.244 \pm 0.110$                 | $0.308 \pm 0.095$ | $0.306 \pm 0.096$ | $0.207 \pm 0.048$               | $0.209 \pm 0.052$                 |
| ecoli-0-6-7- $vs$ -5   | $0.610 \pm 0.231$               | $0.520 \pm 0.152$               | $0.704 \pm 0.188$                 | $0.763 \pm 0.167$ | $0.745 \pm 0.163$ | $0.726 \stackrel{2}{\pm} 0.169$ | $0.722 \pm 0.168$                 |
| ecoli-0-2-3-4- $vs$ -5   | $0.442 \pm 0.170$               | $0.533 \pm 0.176$               | $0.738 \pm 0.167$                 | $0.805 \pm 0.121$ | $0.804 \pm 0.125$ | $0.790 \pm 0.128$               | $0.790 \pm 0.137$                 |
| ecoli4   | $0.454 \pm 0.158$               | $0.456 \stackrel{1}{\pm} 0.127$ | $0.694 \pm 0.183$                 | $0.838 \pm 0.143$ | $0.807 \pm 0.156$ | $0.824 \pm 0.150$               | $0.790 \pm 0.158$                 |
| yeast5   | $0.152 \pm 0.019$               | $0.138 \pm 0.019$               | $0.170 \overset{1,2}{\pm} 0.023$  | $0.610 \pm 0.068$ | $0.610 \pm 0.068$ | $0.588 \pm 0.112$               | $0.586 \pm 0.118$                 |
| ecoli-0-4-6- $vs$ -5   | $0.670 \pm 0.212$               | $0.700 \pm 0.195$               | $0.770 \pm 0.186$                 | $0.790 \pm 0.140$ | $0.789 \pm 0.141$ | $0.781 \pm 0.153$               | $0.782 \pm 0.150$                 |
| $led 7 digit \hbox{-} 0 \hbox{-} 2 \hbox{-} 4 \hbox{-} 5 \hbox{-} 6 \hbox{-} 7 \hbox{-} 8 \hbox{-} 9 \hbox{-} vs \hbox{-} 1$ | $0.553 \pm 0.117$               | $0.534 \pm 0.087$               | $0.612 \pm 0.130$                 | $0.385 \pm 0.173$ | $0.385 \pm 0.175$ | $0.588 \pm 0.119$               | $0.590 \pm 0.114$                 |
| ecoli-0-1- $vs$ -5   | $0.667 \pm 0.299$               | $0.769 \pm 0.220$               | $0.843 \pm 0.118$                 | $0.865 \pm 0.102$ | $0.865 \pm 0.102$ | $0.871 \pm 0.105$               | $0.869 \pm 0.103$                 |
| ecoli - 0 - 2 - 6 - 7 - vs - 3 - 5   | $0.216 \pm 0.296$               | $0.321 \pm 0.281$               | $0.484 \pm 0.249$                 | $0.706 \pm 0.175$ | $0.684 \pm 0.174$ | $0.649 \pm 0.174$               | $0.645 \pm 0.171$                 |
| ecoli-0-1-4-7-vs-2-3-5-6   | $0.426 \pm 0.208$               | $0.440 \pm 0.223$               | $0.639 \pm 0.238$                 | $0.732 \pm 0.171$ | $0.782 \pm 0.147$ | $0.720 \pm 0.144$               | $0.780 \pm 0.129$                 |
| shuttle-c0-vs-c4   | $0.978 \pm 0.022$               | $0.978 \stackrel{-}{\pm} 0.021$ | $0.978 \pm 0.021$                 | $0.994 \pm 0.009$ | $0.994 \pm 0.009$ | $0.994 \pm 0.009$               | $0.994 \pm 0.009$                 |
| ecoli- $0$ - $6$ - $7$ - $vs$ - $3$ - $5$  | $0.202 \pm 0.307$               | $0.278 \pm 0.306$               | $0.504 \pm 0.257$                 | $0.696 \pm 0.164$ | $0.695 \pm 0.164$ | $0.662 \pm 0.171$               | $0.673 \pm 0.162$                 |
| vowel0   | $0.720 \pm 0.049$               | $0.595 \pm 0.036$               | $0.643 \pm 0.037$                 | $0.800 \pm 0.081$ | $0.801 \pm 0.069$ | $0.759 \pm 0.077$               | $0.670 \pm 0.057$                 |
| glass4   | $0.190 \pm 0.222$               | $0.411 \pm 0.207$               | $0.498 \stackrel{2}{\pm} 0.205$   | $0.466 \pm 0.243$ | $0.500 \pm 0.241$ | $0.333 \pm 0.216$               | $0.370 \pm 0.218$                 |
| yeast - 0 - 5 - 6 - 7 - 9 - vs - 4   | $0.176 \pm 0.008$               | $0.176 \stackrel{1}{\pm} 0.007$ | $0.335 \pm 0.110$                 | $0.496 \pm 0.090$ | $0.482 \pm 0.090$ | $0.399 \stackrel{1}{\pm} 0.141$ | $0.405 \stackrel{1}{\pm} 0.121$   |
| yeast - 0 - 2 - 5 - 6 - vs - 3 - 7 - 8 - 9   | $0.466 \pm 0.094$               | $0.593 \stackrel{1}{\pm} 0.077$ | $0.600 \stackrel{1,2}{\pm} 0.079$ | $0.554 \pm 0.096$ | $0.598 \pm 0.088$ | $0.429 \pm 0.112$               | $0.519 \pm 0.114$                 |
| ecoli- $0$ - $1$ - $vs$ - $2$ - $3$ - $5$  | $0.267 \pm 0.338$               | $0.301 \pm 0.356$               | $0.730 \pm 0.233$                 | $0.781 \pm 0.186$ | $0.781 \pm 0.186$ | $0.780 \pm 0.147$               | $0.800 \pm 0.131$                 |
| ecoli-0-3-4- $vs$ -5   | $0.443 \pm 0.172$               | $0.555 \pm 0.178$               | $0.741 \pm 0.179$                 | $0.795 \pm 0.163$ | $0.797 \pm 0.163$ | $0.802 \pm 0.162$               | $0.799 \pm 0.164$                 |
| glass5   | $0.747 \pm 0.183$               | $0.681 \pm 0.250$               | $0.703 \pm 0.263$                 | $0.787 \pm 0.299$ | $0.800 \pm 0.278$ | $0.752 \pm 0.291$               | $0.761 \pm 0.268$                 |
| yeast4   | $0.074 \pm 0.006$               | $0.070 \pm 0.004$               | $0.080 \pm 0.008$                 | $0.329 \pm 0.060$ | $0.327 \pm 0.057$ | $0.127 \pm 0.073$               | $0.141 \pm 0.102$                 |
| $glass\hbox{-} 0\hbox{-} 4\hbox{-} vs\hbox{-} 5$   | $0.925 \pm 0.170$               | $0.886 \pm 0.191$               | $0.893 \pm 0.189$                 | $0.887 \pm 0.227$ | $0.887 \pm 0.227$ | $0.887 \pm 0.227$               | $0.887 \pm 0.227$                 |
| yeast6   | $0.063 \pm 0.004$               | $0.063 \pm 0.004$               | $0.109 \pm 0.025$                 | $0.385 \pm 0.053$ | $0.377 \pm 0.053$ | $0.186 \pm 0.088$               | $0.208 \pm 0.122$                 |
| page-blocks-1-3-vs-4   | $0.502 \pm 0.143$               | $0.491 \pm 0.147$               | $0.550 \pm 0.177$                 | $0.544 \pm 0.177$ | $0.589 \pm 0.168$ | $0.518 \pm 0.152$               | $0.529 \pm 0.146$                 |
| yeast-1-vs-7   | $0.148 \pm 0.011$               | $0.148 \pm 0.012$               | $0.214 \pm 0.062$                 | $0.246 \pm 0.091$ | $0.224 \pm 0.073$ | $0.220 \pm 0.087$               | $0.204 \pm 0.051$                 |
| ecoli-0-1-3-7-vs-2-6   | $0.421 \pm 0.251$               | $0.599 \pm 0.344$               | $0.631 \pm 0.361$                 | $0.641 \pm 0.360$ | $0.605 \pm 0.352$ | $0.526 \pm 0.307$               | $0.526 \pm 0.322$                 |
| yeast-1-4-5-8-vs-7   | $0.090 \pm 0.002$               | $0.091 \pm 0.002$               | $0.097 \pm 0.012$                 | $0.144 \pm 0.053$ | $0.144 \pm 0.053$ | $0.101 \pm 0.025$               | $0.106 \pm 0.032$                 |
| ecoli-0-1-4-7-vs-5-6   | $0.590 \pm 0.239$               | $0.679 \pm 0.229$               | $0.764 \pm 0.186$                 | $0.781 \pm 0.186$ | $0.776 \pm 0.181$ | $0.762 \pm 0.143$               | $0.784 \pm 0.138$                 |
| yeast-2- $vs$ -8   | $0.193 \pm 0.205$               | $0.202 \pm 0.172$               | $0.599 \pm 0.183$                 | $0.665 \pm 0.200$ | $0.665 \pm 0.200$ | $0.661 \pm 0.207$               | $0.658 \pm 0.208$                 |
| $yeast\hbox{-}0\hbox{-}2\hbox{-}5\hbox{-}7\hbox{-}9\hbox{-}vs\hbox{-}3\hbox{-}6\hbox{-}8$                                    | $0.206 \pm 0.012$               | $0.194 \pm 0.012$               | $0.476 \pm 0.150$                 | $0.768 \pm 0.084$ | $0.732 \pm 0.087$ | $0.697 \pm 0.191$               | $0.705 \pm 0.124$                 |
| glass2   | $0.186 \pm 0.050$               | $0.192 \pm 0.047$               | $0.211 \pm 0.073$                 | $0.322 \pm 0.103$ | $0.320 \pm 0.102$ | $0.211 \pm 0.052$               | $0.211 \pm 0.050$                 |
|  | <u> </u>                        | _                               | 1,2                               | 1,2,3,6,7         | 1,2,3,6,7         | 1,2                             | 1,2                               |

Table 3: Results for F1 metric

|           | GNB (1) | OSB (2) | OKNORAU (3) | TBAC (4)  | OTBAC (5) | TBAW (6) | OTBAW (7) |
|-----------|---------|---------|-------------|-----------|-----------|----------|-----------|
| Mean rank | 2.000   | 2.171   | 3.878       | 5.890     | 5.695     | 3.976    | 4.390     |
|           | _       | _       | 1,2         | 1,2,3,6,7 | 1,2,3,6,7 | 1,2      | 1,2       |

Table 4: Results for mean ranks according to F1 metric

| Dataset  | GNB (1)                         | OSB (2)                           | OKNORAU (3)                       | TBAC (4)                          | OTBAC (5)                        | TBAW (6)                          | OTBAW (7)                         |
|--|---------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|----------------------------------|-----------------------------------|-----------------------------------|
| glass-0-1-6-vs-2   | $0.106 \pm 0.034$               | $0.106 \pm 0.036$                 | $0.130 \pm 0.068$                 | $0.193 \pm 0.068$                 | $0.194 \pm 0.069$                | $0.117 \pm 0.035$                 | $0.117 \pm 0.034$                 |
| ecoli - 0 - 3 - 4 - 7 - vs - 5 - 6   | $0.326 \pm 0.160$               | $0.389 \pm 0.163$                 | $0.685 \pm 0.121$                 | $0.780 \pm 0.144$                 | $0.780 \pm 0.143$                | $0.733 \pm 0.133$                 | $0.726 \pm 0.137$                 |
| shuttle- $c2$ - $vs$ - $c4$  | $0.840 \pm 0.277$               | $0.987 \stackrel{1}{\pm} 0.093$   | $0.987 \pm 0.093$                 | $0.800 \pm 0.400$                 | $0.800 \pm 0.400$                | $0.753 \pm 0.401$                 | $0.760 \pm 0.404$                 |
| glass-0-1-4-6-vs-2   | $0.101 \pm 0.034$               | $0.103 \pm 0.035$                 | $0.125 \pm 0.054$                 | $0.202 \pm 0.064$                 | $0.199 \stackrel{-}{\pm} 0.062$  | $0.115 \stackrel{-}{\pm} 0.021$   | $0.116 \pm 0.021$                 |
| yeast-1-2-8-9-vs-7   | $0.034 \pm 0.000$               | $0.034 \pm 0.000$                 | $0.039 \pm 0.004$                 | $0.101 \pm 0.034$                 | $0.101 \pm 0.034$                | $0.050 \stackrel{1}{\pm} 0.028$   | $0.052 \stackrel{1}{\pm} 0.030$   |
| ecoli-0-1-4-6-vs-5   | $0.624 \pm 0.271$               | $0.578 \pm 0.221$                 | $0.724 \pm 0.218$                 | $0.836 \pm 0.159$                 | $0.831 \pm 0.158$                | $0.799 \pm 0.170$                 | $0.802 \pm 0.159$                 |
| $glass\hbox{-} 0\hbox{-} 1\hbox{-} 6\hbox{-} vs\hbox{-} 5$   | $0.756 \pm 0.272$               | $0.751 \pm 0.289$                 | $0.778 \pm 0.295$                 | $0.830 \pm 0.289$                 | $0.830 \pm 0.289$                | $0.813 \pm 0.291$                 | $0.813 \stackrel{1,2}{\pm} 0.291$ |
| yeast-2-vs-4   | $0.235 \pm 0.270$               | $0.143 \pm 0.106$                 | $0.514 \pm 0.156$                 | $0.812 \pm 0.139$                 | $0.747 \pm 0.133$                | $0.718 \pm 0.216$                 | $0.652 \pm 0.152$                 |
| glass-0-6-vs-5   | $0.853 \pm 0.284$               | $0.850 \pm 0.287$                 | $0.850 \pm 0.287$                 | $0.860 \pm 0.346$                 | $0.860 \pm 0.346$                | $0.853 \pm 0.347$                 | $0.853 \pm 0.347$                 |
| ecoli-0-3-4-6-vs-5   | $0.274 \pm 0.157$               | $0.352 \pm 0.180$                 | $0.675 \pm 0.223$                 | $0.737 \pm 0.181$                 | $0.733 \pm 0.177$                | $0.744 \pm 0.188$                 | $0.736 \pm 0.194$                 |
| yeast-0-3-5-9-vs-7-8   | $0.109 \stackrel{-}{\pm} 0.003$ | $0.107 \stackrel{1}{\pm} 0.004$   | $0.222 \pm 0.068$                 | $0.480 \pm 0.181$                 | $0.437 \pm 0.153$                | $0.523 \pm 0.261$                 | $0.428 \pm 0.209$                 |
| $glass\hbox{-} 0\hbox{-} 1\hbox{-} 5\hbox{-} vs\hbox{-} 2$   | $0.119 \pm 0.052$               | $0.103 \pm 0.034$                 | $0.156 \pm 0.074$                 | $0.196 \pm 0.066$                 | $0.195 \pm 0.067$                | $0.118 \pm 0.030$                 | $0.119 \pm 0.032$                 |
| ecoli-0-6-7-vs-5   | $0.597 \pm 0.279$               | $0.398 \pm 0.166$                 | $0.656 \pm 0.245$                 | $0.801 \pm 0.189$                 | $0.774 \pm 0.183$                | $0.724 \pm 0.199$                 | $0.708 \stackrel{2}{\pm} 0.193$   |
| ecoli-0-2-3-4-vs-5   | $0.337 \stackrel{2}{\pm} 0.200$ | $0.420 \pm 0.216$                 | $0.672 \pm 0.204$                 | $0.806 \pm 0.166$                 | $0.806 \pm 0.174$                | $0.777 \pm 0.178$                 | $0.773 \pm 0.185$                 |
| ecoli4   | $0.315 \pm 0.155$               | $0.308 \stackrel{1}{\pm} 0.122$   | $0.585 \pm 0.225$                 | $0.825 \pm 0.176$                 | $0.763 \pm 0.195$                | $0.793 \pm 0.196$                 | $0.732 \pm 0.202$                 |
| yeast5   | $0.082 \pm 0.011$               | $0.074 \pm 0.011$                 | $0.093 \pm 0.014$                 | $0.446 \pm 0.069$                 | $0.446 \pm 0.069$                | $0.427 \pm 0.100$                 | $0.426 \pm 0.104$                 |
| ecoli-0-4-6-vs-5   | $0.621 \pm 0.241$               | $0.628 \pm 0.236$                 | $0.738 \pm 0.235$                 | $0.770 \pm 0.178$                 | $0.768 \pm 0.180$                | $0.752 \pm 0.198$                 | $0.755 \pm 0.195$                 |
| $led 7 digit \hbox{-} 0 \hbox{-} 2 \hbox{-} 4 \hbox{-} 5 \hbox{-} 6 \hbox{-} 7 \hbox{-} 8 \hbox{-} 9 \hbox{-} vs \hbox{-} 1$ | $0.428 \stackrel{-}{\pm} 0.117$ | $0.388 \pm 0.083$                 | $0.506 \pm 0.184$                 | $0.489 \pm 0.238$                 | $0.477 \pm 0.232$                | $0.463 \pm 0.128$                 | $0.464 \pm 0.123$                 |
| ecoli-0-1- $vs$ -5   | $0.785 \stackrel{2}{\pm} 0.364$ | $0.831 \pm 0.237$                 | $0.911 \stackrel{1,2}{\pm} 0.130$ | $0.960 \stackrel{2}{\pm} 0.094$   | $0.960 \stackrel{2}{\pm} 0.094$  | $0.954 \stackrel{2}{\pm} 0.109$   | $0.950 \stackrel{2}{\pm} 0.110$   |
| ecoli-0-2-6-7-vs-3-5   | $0.266 \pm 0.354$               | $0.416 \pm 0.349$                 | $0.623 \pm 0.305$                 | $0.745 \pm 0.201$                 | $0.712 \pm 0.207$                | $0.653 \pm 0.236$                 | $0.628 \overset{1,2}{\pm} 0.211$  |
| ecoli-0-1-4-7-vs-2-3-5-6   | $0.778 \pm 0.304$               | $0.761 \stackrel{1}{\pm} 0.297$   | $0.827 \pm 0.214$                 | $0.917 \stackrel{all}{\pm} 0.137$ | $0.887 \pm 0.134$                | $0.878 \pm 0.149$                 | $0.839 \pm 0.144$                 |
| shuttle-c0-vs-c4   | $0.976 \pm 0.038$               | $0.977 \pm 0.035$                 | $0.977 \pm 0.035$                 | $1,2,3,6,7$ $1.000 \pm 0.000$     | $1.000 \overset{2,7}{\pm} 0.000$ | $1.000 \stackrel{2}{\pm} 0.000$   | $1.000 \pm 0.000$                 |
| ecoli-0-6-7-vs-3-5   | $0.219 \pm 0.313$               | $0.318 \pm 0.325$                 | $0.622 \pm 0.298$                 | $0.766 \pm 0.197$                 | $0.744 \pm 0.188$                | $0.685 \pm 0.222$                 | $0.679 \pm 0.200$                 |
| vowel0   | $0.610 \pm 0.063$               | $0.439 \stackrel{1}{\pm} 0.038$   | $0.487 \pm 0.038$                 | $0.848 \pm 0.082$                 | $0.750 \pm 0.072$                | $0.744 \pm 0.080$                 | $0.551 \pm 0.065$                 |
| glass4   | $0.207 \pm 0.281$               | $0.337 \pm 0.211$                 | $0.460 \pm 0.240$                 | $0.423 \stackrel{all}{\pm} 0.256$ | $0.462 \pm 0.268$                | $0.277 \pm 0.217$                 | $0.324 \pm 0.242$                 |
| yeast - 0 - 5 - 6 - 7 - 9 - vs - 4   | $0.097 \pm 0.005$               | $0.097 \stackrel{1}{\pm} 0.004$   | $0.215 \pm 0.085$                 | $0.393 \pm 0.126$                 | $0.364 \pm 0.114$                | $0.314 \pm 0.153$                 | $0.292 \pm 0.113$                 |
| yeast - 0 - 2 - 5 - 6 - vs - 3 - 7 - 8 - 9   | $0.643 \pm 0.115$               | $0.608 \pm 0.088$                 | $0.621 \pm 0.097$                 | $0.723 \pm 0.105$                 | $0.698 \pm 0.094$                | $0.708 \pm 0.131$                 | $0.710 \pm 0.104$                 |
| ecoli-0-1-vs-2-3-5   | $0.433 \pm 0.470$               | $0.446 \pm 0.465$                 | $0.906 \pm 0.194$                 | $0.933 \pm 0.171$                 | $0.933 \pm 0.171$                | $0.896 \pm 0.151$                 | $0.894 \pm 0.147$                 |
| ecoli-0-3-4-vs-5   | $0.335 \pm 0.202$               | $0.442 \pm 0.196$                 | $0.687 \pm 0.203$                 | $0.786 \pm 0.174$                 | $0.788 \pm 0.173$                | $0.790 \pm 0.171$                 | $0.785 \pm 0.175$                 |
| glass5   | $0.655 \pm 0.213$               | $0.608 \stackrel{1}{\pm} 0.258$   | $0.641 \pm 0.278$                 | $0.837 \pm 0.315$                 | $0.857 \pm 0.292$                | $0.770 \pm 0.314$                 | $0.783 \pm 0.294$                 |
| yeast4   | $0.038 \pm 0.003$               | $0.036 \pm 0.002$                 | $0.042 \pm 0.004$                 | $0.216 \pm 0.041$                 | $0.212 \pm 0.039$                | $0.072 \pm 0.050$                 | $0.084 \pm 0.072$                 |
| glass-0-4-vs-5   | $0.913 \pm 0.195$               | $0.910 \pm 0.200$                 | $0.910 \pm 0.200$                 | $0.960 \pm 0.195$                 | $0.960 \pm 0.195$                | $0.960 \pm 0.195$                 | $0.960 \pm 0.195$                 |
| yeast6   | $0.032 \pm 0.002$               | $0.033 \pm 0.002$                 | $0.058 \pm 0.014$                 | $0.251 \pm 0.041$                 | $0.245 \stackrel{-}{\pm} 0.040$  | $0.108 \pm 0.063$                 | $0.125 \pm 0.088$                 |
| page-blocks-1-3-vs-4   | $0.468 \pm 0.156$               | $0.439 \pm 0.157$                 | $0.475 \pm 0.164$                 | $0.583 \pm 0.195$                 | $0.597 \pm 0.178$                | $0.557 \pm 0.181$                 | $0.552 \pm 0.172$                 |
| yeast-1-vs-7   | $0.080 \stackrel{2}{\pm} 0.006$ | $0.080 \pm 0.006$                 | $0.125 \stackrel{2}{\pm} 0.038$   | $0.167 \pm 0.083$                 | $0.142 \pm 0.046$                | $0.138 \pm 0.076$                 | $0.119 \pm 0.032$                 |
| ecoli-0-1-3-7-vs-2-6   | $0.353 \pm 0.279$               | $0.573 \pm 0.366$                 | $0.630 \pm 0.389$                 | $0.647 \stackrel{all}{\pm} 0.389$ | $0.600 \pm 0.389$                | $0.487 \pm 0.346$                 | $0.515 \pm 0.386$                 |
| yeast-1-4-5-8-vs-7   | $0.047 \pm 0.001$               | $0.048 \stackrel{1,6}{\pm} 0.001$ | $0.051 \pm 0.006$                 | $0.084 \pm 0.031$                 | $0.084 \pm 0.031$                | $0.054 \stackrel{1}{\pm} 0.015$   | $0.058 \stackrel{1}{\pm} 0.020$   |
| ecoli-0-1-4-7-vs-5-6   | $0.838 \pm 0.239$               | $0.723 \stackrel{1}{\pm} 0.225$   | $0.773 \pm 0.186$                 | $0.869 \pm 0.186$                 | $0.838 \pm 0.192$                | $0.822 \stackrel{1,2}{\pm} 0.166$ | $0.808 \overset{1,2}{\pm} 0.178$  |
| yeast-2-vs-8   | $0.171 \pm 0.241$               | $0.163 \pm 0.206$                 | $0.707 \stackrel{2}{\pm} 0.246$   | $0.911 \pm 0.189$                 | $0.911 \pm 0.189$                | $0.859 \overset{2,3}{\pm} 0.235$  | $0.886 \stackrel{2}{\pm} 0.217$   |
| yeast - 0 - 2 - 5 - 7 - 9 - vs - 3 - 6 - 8   | $0.115 \stackrel{2}{\pm} 0.007$ | $0.107 \pm 0.007$                 | $0.340 \pm 0.135$                 | $0.729 \pm 0.142$                 | $0.660 \pm 0.133$                | $0.660 \pm 0.249$                 | $0.624 \pm 0.153$                 |
| glass2   | $0.106 \stackrel{2}{\pm} 0.029$ | $0.109 \pm 0.027$                 | $0.124 \pm 0.045$                 | $0.210 \stackrel{all}{\pm} 0.078$ | $0.208 \pm 0.078$                | $0.120 \pm 0.033$                 | $0.120 \pm 0.032$                 |
|  | <u> </u>                        | _                                 | 1,2                               | 1,2,3,6,7                         | 1,2,3,6,7                        | 1,2                               | 1,2                               |

Table 5: Results for Precision metric

|           | GNB (1) | OSB (2) | OKNORAU (3) | TBAC (4) | OTBAC (5) | TBAW (6) | OTBAW (7) |
|-----------|---------|---------|-------------|----------|-----------|----------|-----------|
| Mean rank | 1.927   | 1.707   | 3.415       | 6.512    | 5.878     | 4.451    | 4.110     |
|           | _       | _       | 1,2         | all      | 1,2,3,6,7 | 1,2,3    | 1,2,3     |

Table 6: Results for mean ranks according to Precision metric

| Dataset  | GNB (1)                         | OSB (2)                          | OKNORAU (3)                      | TBAC (4)                        | OTBAC (5)                       | TBAW (6)                         | OTBAW (7)                        |
|--|---------------------------------|----------------------------------|----------------------------------|---------------------------------|---------------------------------|----------------------------------|----------------------------------|
| glass-0-1-6-vs-2   | $0.737 \pm 0.215$               | $0.765 \pm 0.240$                | $0.638 \pm 0.258$                | $0.730 \pm 0.225$               | $0.740 \pm 0.225$               | $0.875 \pm 0.213$                | $0.887 \pm 0.201$                |
| ecoli-0-3-4-7-vs-5-6   | $0.792 \pm 0.236$               | $0.848 \pm 0.172$                | $0.836 \pm 0.153$                | $0.796 \pm 0.152$               | $0.796 \pm 0.152$               | $0.816 \pm 0.168$                | $0.816 \pm 0.154$                |
| shuttle- $c2$ - $vs$ - $c4$                                    | $1.000 \pm 0.000$               | $1.000 \overset{4.5}{\pm} 0.000$ | $1.000 \stackrel{4}{\pm} 0.000$  | $0.780 \stackrel{-}{\pm} 0.401$ | $0.780 \stackrel{-}{\pm} 0.401$ | $0.780 \stackrel{-}{\pm} 0.401$  | $0.780 \pm 0.401$                |
| $glass\hbox{-}0\hbox{-}1\hbox{-}4\hbox{-}6\hbox{-}vs\hbox{-}2$ | $0.745 \pm 0.267$               | $0.777 \pm 0.276$                | $0.667 \pm 0.274$                | $0.730 \pm 0.195$               | $0.730 \pm 0.195$               | $0.883 \pm 0.174$                | $0.898 \pm 0.157$                |
| yeast-1-2-8-9- $vs$ -7   | $1.000 \stackrel{3}{\pm} 0.000$ | $1.000 \stackrel{3}{\pm} 0.000$  | $0.940 \pm 0.098$                | $0.523 \pm 0.173$               | $0.523 \pm 0.173$               | $0.807 \pm 0.248$                | $0.807 \pm 0.261$                |
| ecoli- $0$ - $1$ - $4$ - $6$ - $vs$ - $5$                      | $0.750 \pm 0.173$               | $0.845 \pm 0.157$                | $0.835 \pm 0.170$                | $0.815 \pm 0.164$               | $0.820 \pm 0.158$               | $0.810 \pm 0.170$                | $0.825 \pm 0.160$                |
| $glass\hbox{-} 0\hbox{-} 1\hbox{-} 6\hbox{-} vs\hbox{-} 5$     | $0.930 \pm 0.223$               | $0.860 \stackrel{1}{\pm} 0.283$  | $0.860 \stackrel{1}{\pm} 0.283$  | $0.730 \stackrel{1}{\pm} 0.303$ | $0.730 \stackrel{1}{\pm} 0.303$ | $0.730 \stackrel{1}{\pm} 0.303$  | $0.730 \stackrel{1}{\pm} 0.303$  |
| yeast-2- $vs$ -4   | $0.921 \pm 0.100$               | $0.944 \pm 0.075$                | $0.832 \pm 0.118$                | $0.733 \pm 0.142$               | $0.743 \pm 0.142$               | $0.759 \pm 0.140$                | $0.770 \pm 0.131$                |
| $glass\hbox{-} 0\hbox{-} 6\hbox{-} vs\hbox{-} 5$               | $0.900 \pm 0.282$               | $0.860 \pm 0.300$                | $0.860 \pm 0.300$                | $0.680 \pm 0.357$               | $0.680 \pm 0.357$               | $0.680 \pm 0.357$                | $0.680 \pm 0.357$                |
| ecoli-0-3-4-6-vs-5   | $0.840 \pm 0.171$               | $0.860 \pm 0.159$                | $0.850 \pm 0.173$                | $0.830 \pm 0.169$               | $0.825 \stackrel{-}{\pm} 0.167$ | $0.830 \pm 0.169$                | $0.820 \pm 0.173$                |
| yeast - 0 - 3 - 5 - 9 - vs - 7 - 8                             | $0.992 \pm 0.033$               | $0.984 \pm 0.041$                | $0.710 \pm 0.197$                | $0.386 \pm 0.184$               | $0.448 \stackrel{-}{\pm} 0.172$ | $0.376 \stackrel{-}{\pm} 0.210$  | $0.450 \pm 0.211$                |
| $glass\hbox{-} 0\hbox{-} 1\hbox{-} 5\hbox{-} vs\hbox{-} 2$     | $0.675 \pm 0.253$               | $0.710 \pm 0.246$                | $0.605 \pm 0.263$                | $0.745 \pm 0.238$               | $0.745 \pm 0.238$               | $0.878 \stackrel{-}{\pm} 0.181$  | $0.895 \pm 0.179$                |
| ecoli-0-6-7-vs-5   | $0.720 \pm 0.210$               | $0.840 \stackrel{3}{\pm} 0.178$  | $0.820 \pm 0.173$                | $0.760 \stackrel{3}{\pm} 0.193$ | $0.750 \pm 0.193$               | $0.775 \pm 0.201$                | $0.775 \pm 0.188$                |
| ecoli-0-2-3-4- $vs$ -5   | $0.830 \pm 0.153$               | $0.850 \pm 0.150$                | $0.850 \pm 0.150$                | $0.835 \pm 0.155$               | $0.835 \pm 0.155$               | $0.835 \pm 0.155$                | $0.840 \pm 0.156$                |
| ecoli4   | $0.940 \stackrel{-}{\pm} 0.106$ | $0.950 \pm 0.099$                | $0.920 \pm 0.116$                | $0.880 \pm 0.160$               | $0.890 \pm 0.159$               | $0.900 \pm 0.158$                | $0.900 \pm 0.158$                |
| yeast5   | $0.996 \pm 0.031$               | $0.996 \pm 0.031$                | $0.996 \pm 0.031$                | $0.982 \pm 0.046$               | $0.982 \pm 0.046$               | $0.978 \pm 0.050$                | $0.978 \pm 0.050$                |
| ecoli-0-4-6-vs-5   | $0.780 \pm 0.184$               | $0.845 \pm 0.165$                | $0.845 \pm 0.165$                | $0.835 \pm 0.155$               | $0.835 \pm 0.155$               | $0.840 \pm 0.156$                | $0.840 \pm 0.156$                |
| led7digit-0-2-4-5-6-7-8-9-vs-1                                 | $0.816 \pm 0.137$               | $0.883 \stackrel{1}{\pm} 0.121$  | $0.856 \pm 0.137$                | $0.342 \pm 0.177$               | $0.345 \pm 0.179$               | $0.875 \pm 0.166$                | $0.875 \pm 0.166$                |
| ecoli- $0$ - $1$ - $vs$ - $5$                                  | $0.620 \pm 0.279$               | $0.745 \pm 0.237$                | $0.810 \pm 0.170$                | $0.805 \pm 0.152$               | $0.805 \pm 0.152$               | $0.820 \pm 0.150$                | $0.820 \pm 0.150$                |
| ecoli - 0 - 2 - 6 - 7 - vs - 3 - 5                             | $0.199 \pm 0.290$               | $0.309 \stackrel{1}{\pm} 0.319$  | $0.449 \stackrel{1}{\pm} 0.283$  | $0.696 \stackrel{1}{\pm} 0.198$ | $0.691 \stackrel{1}{\pm} 0.205$ | $0.699 \stackrel{1}{\pm} 0.176$  | $0.705 \stackrel{1}{\pm} 0.185$  |
| ecoli-0-1-4-7-vs-2-3-5-6                                       | $0.308 \pm 0.178$               | $0.343 \stackrel{1}{\pm} 0.237$  | $0.554 \pm 0.271$                | $0.633 \pm 0.211$               | $0.719 \pm 0.184$               | $0.636 \pm 0.184$                | $0.751 \pm 0.165$                |
| shuttle-c0-vs-c4   | $0.982 \pm 0.025$               | $0.980 \pm 0.027$                | $0.980 \pm 0.027$                | $0.988 \pm 0.018$               | $0.989 \pm 0.018$               | $0.988 \pm 0.018$                | $0.989 \pm 0.018$                |
| ecoli-0-6-7-vs-3-5   | $0.199 \pm 0.320$               | $0.289 \pm 0.364$                | $0.479 \pm 0.306$                | $0.669 \stackrel{2}{\pm} 0.192$ | $0.687 \pm 0.209$               | $0.674 \stackrel{2}{\pm} 0.166$  | $0.702 \pm 0.176$                |
| vowel0   | $0.889 \stackrel{-}{\pm} 0.081$ | $0.930 \stackrel{1}{\pm} 0.053$  | $0.952 \pm 0.057$                | $0.770 \pm 0.123$               | $0.867 \pm 0.103$               | $0.784 \pm 0.113$                | $0.866 \pm 0.089$                |
| glass4   | $0.210 \pm 0.244$               | $0.627 \pm 0.293$                | $0.627 \pm 0.278$                | $0.567 \pm 0.296$               | $0.593 \pm 0.283$               | $0.510 \pm 0.304$                | $0.557 \pm 0.301$                |
| yeast-0-5-6-7-9-vs-4   | $0.969 \pm 0.045$               | $0.977 \pm 0.041$                | $0.886 \pm 0.108$                | $0.738 \stackrel{1}{\pm} 0.112$ | $0.771 \pm 0.111$               | $0.733 \pm 0.187$                | $0.795 \pm 0.155$                |
| yeast - 0 - 2 - 5 - 6 - vs - 3 - 7 - 8 - 9                     | $0.372 \pm 0.096$               | $0.588 \pm 0.099$                | $0.588 \pm 0.091$                | $0.456 \pm 0.106$               | $0.534 \pm 0.116$               | $0.319 \pm 0.112$                | $0.430 \pm 0.145$                |
| ecoli- $0$ - $1$ - $vs$ - $2$ - $3$ - $5$                      | $0.218 \pm 0.314$               | $0.256 \pm 0.342$                | $0.647 \pm 0.268$                | $0.695 \pm 0.216$               | $0.695 \pm 0.216$               | $0.720 \pm 0.183$                | $0.744 \pm 0.159$                |
| ecoli-0-3-4-vs-5   | $0.845 \pm 0.186$               | $0.850 \pm 0.193$                | $0.845 \pm 0.205$                | $0.840\overset{1,2}{\pm}0.204$  | $0.840 \pm 0.204$               | $0.845 \pm 0.199$                | $0.845 \pm 0.199$                |
| glass5   | $0.920 \pm 0.208$               | $0.830 \pm 0.310$                | $0.830 \pm 0.310$                | $0.790 \pm 0.333$               | $0.800 \pm 0.316$               | $0.790 \pm 0.333$                | $0.800 \pm 0.316$                |
| yeast4   | $0.961 \pm 0.057$               | $0.971 \pm 0.048$                | $0.942 \pm 0.069$                | $0.711 \pm 0.141$               | $0.720 \pm 0.134$               | $0.900 \pm 0.135$                | $0.890 \pm 0.156$                |
| glass-0-4-vs-5   | $0.960 \pm 0.168$               | $0.900 \pm 0.223$                | $0.910 \pm 0.216$                | $0.850 \pm 0.269$               | $0.850 \pm 0.269$               | $0.850 \pm 0.269$                | $0.850 \overset{4.5}{\pm} 0.269$ |
| yeast6   | $0.986 \pm 0.042$               | $0.991 \pm 0.033$                | $0.931 \pm 0.086$                | $0.837 \pm 0.117$               | $0.837 \pm 0.117$               | $0.906 \pm 0.093$                | $0.891 \pm 0.101$                |
| page-blocks-1-3-vs-4   | $3,4,5,6,7 \\ 0.576 \pm 0.190$  | $0.597 \pm 0.202$                | $0.693 \pm 0.253$                | $0.537 \pm 0.208$               | $0.613 \pm 0.214$               | $0.508 \pm 0.176$                | $0.537 \pm 0.179$                |
| yeast-1-vs-7   | $0.973 \pm 0.077$               | $0.970 \pm 0.086$                | $0.797 \pm 0.214$                | $0.547 \pm 0.202$               | $0.557 \pm 0.209$               | $0.753 \pm 0.211$                | $0.777 \pm 0.207$                |
| ecoli-0-1-3-7-vs-2-6   | $0.700 \pm 0.400$               | $0.700 \pm 0.400$                | $0.700 \overset{4,5}{\pm} 0.400$ | $0.700 \pm 0.400$               | $0.700 \pm 0.400$               | $0.700 \overset{4.5}{\pm} 0.400$ | $0.700 \overset{4.5}{\pm} 0.400$ |
| yeast-1-4-5-8-vs-7   | $1.000 \pm 0.000$               | $1.000 \pm 0.000$                | $0.910 \pm 0.130$                | $0.513 \pm 0.193$               | $0.513 \pm 0.193$               | $0.847 \pm 0.213$                | $0.810 \pm 0.235$                |
| ecoli-0-1-4-7-vs-5-6   | $3,4,5,6,7 \\ 0.492 \pm 0.259$  | $3,4,5,6,7 \\ 0.680 \pm 0.274$   | $0.784 \pm 0.229$                | $0.736 \pm 0.217$               | $0.752 \pm 0.209$               | $0.732 \pm 0.177$                | $0.792 \pm 0.164$                |
| yeast-2-vs-8   | $0.890 \pm 0.218$               | $0.865 \stackrel{1}{\pm} 0.213$  | $0.585 \pm 0.232$                | $0.555 \stackrel{1}{\pm} 0.219$ | $0.555 \pm 0.219$               | $0.580 \stackrel{1}{\pm} 0.202$  | $0.565 \pm 0.216$                |
| yeast-0-2-5-7-9-vs-3-6-8                                       | $3,4,5,6,7 \\ 0.986 \pm 0.031$  | $0.987 \pm 0.026$                | $0.917 \pm 0.071$                | $0.840 \pm 0.080$               | $0.853 \pm 0.079$               | $0.839 \pm 0.085$                | $0.857 \pm 0.081$                |
| glass2   | $3,4,5,6,7 \\ 0.773 \pm 0.200$  | $0.830 \pm 0.187$                | $4,5,6,7 \\ 0.732 \pm 0.234$     | $0.732 \pm 0.198$               | $0.732 \pm 0.198$               | $0.903 \pm 0.142$                | $0.917 \pm 0.135$                |
|  | <u> </u>                        | 1,3,4,5                          | _                                | _                               | _                               | 1,2,3,4,5                        | 1,2,3,4,5                        |

Table 7: Results for Recall metric

|           | GNB (1) | OSB (2)   | OKNORAU (3) | TBAC (4) | OTBAC (5) | TBAW (6) | OTBAW (7) |
|-----------|---------|-----------|-------------|----------|-----------|----------|-----------|
| Mean rank | 4.037   | 5.378     | 4.780       | 2.622    | 3.220     | 3.598    | 4.366     |
|           | 4       | 1,3,4,5,6 | 4,5,6       | _        | 4         | 4        | 4,5,6     |

Table 8: Results for mean ranks according to Recall metric

| Dataset  | GNB (1)                           | OSB (2)                         | OKNORAU (3)                       | TBAC (4)                        | OTBAC (5)                       | TBAW (6)                          | OTBAW (7)                       |
|--|-----------------------------------|---------------------------------|-----------------------------------|---------------------------------|---------------------------------|-----------------------------------|---------------------------------|
| glass-0-1-6-vs-2   | $0.565 \pm 0.111$                 | $0.568 \pm 0.113$               | $0.600 \pm 0.145$                 | $0.713 \pm 0.117$               | $0.717 \pm 0.116$               | $0.613 \pm 0.108$                 | $0.614 \pm 0.106$               |
| ecoli-0-3-4-7-vs-5-6   | $0.778 \pm 0.080$                 | $0.835 \pm 0.079$               | $0.896 \pm 0.076$                 | $0.885 \pm 0.078$               | $0.885 \pm 0.078$               | $0.891 \pm 0.085$                 | $0.890 \pm 0.079$               |
| shuttle- $c2$ - $vs$ - $c4$  | $0.988 \stackrel{-}{\pm} 0.022$   | $0.999 \stackrel{1}{\pm} 0.005$ | $0.999 \pm 0.005$                 | $0.890 \pm 0.200$               | $0.890 \pm 0.200$               | $0.887 \pm 0.202$                 | $0.888 \pm 0.200$               |
| glass-0-1-4-6-vs-2   | $0.579 \pm 0.128$                 | $0.590 \pm 0.132$               | $0.617 \pm 0.150$                 | $0.728 \pm 0.104$               | $0.727 \pm 0.103$               | $0.635 \pm 0.091$                 | $0.639 \pm 0.085$               |
| yeast-1-2-8-9-vs-7   | $0.540 \pm 0.011$                 | $0.541 \pm 0.012$               | $0.590 \pm 0.048$                 | $0.685 \pm 0.087$               | $0.685 \pm 0.087$               | $0.601 \stackrel{1}{\pm} 0.056$   | $0.607 \pm 0.058$               |
| ecoli-0-1-4-6-vs-5   | $0.847 \stackrel{-}{\pm} 0.098$   | $0.890 \pm 0.088$               | $0.901 \pm 0.089$                 | $0.899 \pm 0.079$               | $0.902 \pm 0.076$               | $0.895 \pm 0.081$                 | $0.902 \pm 0.077$               |
| $glass\hbox{-} 0\hbox{-} 1\hbox{-} 6\hbox{-} vs\hbox{-} 5$   | $0.956 \pm 0.109$                 | $0.922 \pm 0.140$               | $0.923 \pm 0.141$                 | $0.861 \pm 0.151$               | $0.861 \pm 0.151$               | $0.861 \pm 0.151$                 | $0.861 \pm 0.151$               |
| yeast-2-vs-4   | $0.608 \pm 0.128$                 | $0.580 \pm 0.102$               | $0.849 \pm 0.099$                 | $0.856 \pm 0.071$               | $0.856 \pm 0.070$               | $0.848 \pm 0.083$                 | $0.856 \pm 0.069$               |
| glass-0-6-vs-5   | $0.945 \pm 0.140$                 | $0.925 \pm 0.149$               | $0.925 \pm 0.149$                 | $0.840 \pm 0.178$               | $0.840 \pm 0.178$               | $0.840 \pm 0.178$                 | $0.840 \pm 0.178$               |
| ecoli-0-3-4-6-vs-5   | $0.755 \pm 0.102$                 | $0.816 \pm 0.103$               | $0.896 \pm 0.105$                 | $0.897 \pm 0.089$               | $0.894 \pm 0.087$               | $0.897 \stackrel{-}{\pm} 0.090$   | $0.891 \pm 0.092$               |
| yeast - 0 - 3 - 5 - 9 - vs - 7 - 8   | $0.550 \pm 0.018$                 | $0.540 \stackrel{1}{\pm} 0.022$ | $0.698 \stackrel{1,2}{\pm} 0.081$ | $0.661 \pm 0.070$               | $0.684 \pm 0.067$               | $0.638 \stackrel{1,2}{\pm} 0.055$ | $0.658 \pm 0.066$               |
| $glass\hbox{-} 0\hbox{-} 1\hbox{-} 5\hbox{-} vs\hbox{-} 2$   | $0.555 \stackrel{2}{\pm} 0.134$   | $0.520 \pm 0.115$               | $0.614 \pm 0.144$                 | $0.706 \pm 0.114$               | $0.704 \pm 0.115$               | $0.578 \pm 0.083$                 | $0.582 \pm 0.085$               |
| ecoli-0-6-7-vs-5   | $0.813 \pm 0.124$                 | $0.841 \pm 0.105$               | $0.879 \pm 0.098$                 | $0.869 \pm 0.099$               | $0.862 \pm 0.099$               | $0.869 \stackrel{2}{\pm} 0.103$   | $0.868 \pm 0.099$               |
| ecoli-0-2-3-4-vs-5   | $0.780 \pm 0.098$                 | $0.836 \pm 0.096$               | $0.897 \pm 0.086$                 | $0.904 \pm 0.077$               | $0.904 \stackrel{1}{\pm} 0.078$ | $0.902 \pm 0.078$                 | $0.904 \pm 0.081$               |
| ecoli4   | $0.886 \pm 0.083$                 | $0.898 \stackrel{1}{\pm} 0.063$ | $0.932 \pm 0.071$                 | $0.933 \pm 0.081$               | $0.934 \pm 0.082$               | $0.940 \pm 0.079$                 | $0.937 \pm 0.080$               |
| yeast5   | $0.825 \pm 0.024$                 | $0.803 \stackrel{1}{\pm} 0.029$ | $0.846 \pm 0.024$                 | $0.972 \pm 0.024$               | $0.972 \pm 0.024$               | $0.965 \pm 0.036$                 | $0.964 \pm 0.040$               |
| ecoli-0-4-6-vs-5   | $0.851 \pm 0.114$                 | $0.884 \pm 0.103$               | $0.900 \pm 0.095$                 | $0.902 \pm 0.082$               | $0.901 \pm 0.082$               | $0.901 \pm 0.084$                 | $0.902 \pm 0.084$               |
| $led 7 digit \hbox{-} 0 \hbox{-} 2 \hbox{-} 4 \hbox{-} 5 \hbox{-} 6 \hbox{-} 7 \hbox{-} 8 \hbox{-} 9 \hbox{-} vs \hbox{-} 1$ | $0.853 \pm 0.073$                 | $0.874 \pm 0.063$               | $0.880 \pm 0.067$                 | $0.653 \pm 0.089$               | $0.654 \pm 0.091$               | $0.885 \pm 0.076$                 | $0.886 \pm 0.076$               |
| ecoli-0-1-vs-5   | $0.800 \stackrel{4.5}{\pm} 0.143$ | $0.865 \pm 0.121$               | $0.900 \pm 0.084$                 | $0.900 \pm 0.075$               | $0.900 \pm 0.075$               | $0.907 \pm 0.075$                 | $0.907 \pm 0.074$               |
| ecoli-0-2-6-7-vs-3-5   | $0.586 \pm 0.145$                 | $0.638 \stackrel{1}{\pm} 0.155$ | $0.710 \pm 0.139$                 | $0.834 \pm 0.102$               | $0.828 \pm 0.105$               | $0.822 \pm 0.089$                 | $0.825 \pm 0.097$               |
| ecoli-0-1-4-7-vs-2-3-5-6   | $0.651 \pm 0.090$                 | $0.667 \stackrel{1}{\pm} 0.117$ | $0.773 \pm 0.136$                 | $0.814 \pm 0.106$               | $0.855 \pm 0.093$               | $0.813 \pm 0.092$                 | $0.868 \pm 0.082$               |
| shuttle-c0-vs-c4   | $0.990 \pm 0.012$                 | $0.989 \pm 0.013$               | $0.989 \pm 0.013$                 | $0.994 \pm 0.009$               | $0.994 \pm 0.009$               | $0.994 \pm 0.009$                 | $0.994 \pm 0.009$               |
| ecoli-0-6-7-vs-3-5   | $0.587 \pm 0.158$                 | $0.630 \pm 0.175$               | $0.726 \pm 0.148$                 | $0.821 \pm 0.098$               | $0.829 \pm 0.106$               | $0.815 \pm 0.089$                 | $0.829 \pm 0.092$               |
| vowel0   | $0.915 \pm 0.037$                 | $0.905 \stackrel{1}{\pm} 0.025$ | $0.925 \pm 0.027$                 | $0.878 \pm 0.060$               | $0.919 \pm 0.051$               | $0.878 \pm 0.056$                 | $0.896 \pm 0.042$               |
| glass4   | $0.572 \pm 0.129$                 | $0.763 \pm 0.154$               | $0.785 \pm 0.138$                 | $0.756 \pm 0.151$               | $0.772 \pm 0.145$               | $0.695 \pm 0.163$                 | $0.718 \stackrel{6}{\pm} 0.162$ |
| yeast-0-5-6-7-9-vs-4   | $0.501 \pm 0.026$                 | $0.501 \pm 0.022$               | $0.713 \pm 0.135$                 | $0.797 \pm 0.049$               | $0.804 \pm 0.050$               | $0.718 \stackrel{1}{\pm} 0.095$   | $0.750 \stackrel{1}{\pm} 0.102$ |
| yeast - 0 - 2 - 5 - 6 - vs - 3 - 7 - 8 - 9   | $0.675 \stackrel{2}{\pm} 0.048$   | $0.772 \pm 0.049$               | $0.774 \pm 0.046$                 | $0.718 \pm 0.053$               | $0.754 \pm 0.056$               | $0.652 \pm 0.055$                 | $0.705 \pm 0.069$               |
| ecoli-0-1-vs-2-3-5   | $0.607 \pm 0.157$                 | $0.625 \pm 0.171$               | $0.821 \pm 0.135$                 | $0.845 \pm 0.108$               | $0.845 \pm 0.108$               | $0.854 \pm 0.092$                 | $0.866 \pm 0.081$               |
| ecoli-0-3-4-vs-5   | $0.788 \pm 0.105$                 | $0.846 \pm 0.111$               | $0.897 \pm 0.107$                 | $0.906 \pm 0.103$               | $0.906 \pm 0.104$               | $0.909 \pm 0.102$                 | $0.908 \pm 0.102$               |
| glass5   | $0.948 \pm 0.103$                 | $0.904 \stackrel{1}{\pm} 0.152$ | $0.905 \pm 0.153$                 | $0.893 \pm 0.165$               | $0.898 \pm 0.156$               | $0.891 \pm 0.164$                 | $0.896 \pm 0.156$               |
| yeast4   | $0.551 \pm 0.039$                 | $0.526 \pm 0.025$               | $0.585 \pm 0.046$                 | $0.809 \pm 0.068$               | $0.812 \pm 0.065$               | $0.672 \pm 0.071$                 | $0.649 \pm 0.090$               |
| glass-0-4-vs-5   | $0.975 \stackrel{2}{\pm} 0.083$   | $0.945 \pm 0.111$               | $0.950 \pm 0.108$                 | $0.925 \pm 0.134$               | $0.925 \pm 0.134$               | $0.925 \pm 0.134$                 | $0.925 \pm 0.134$               |
| yeast6   | $0.636 \pm 0.023$                 | $0.640 \pm 0.025$               | $0.769 \pm 0.044$                 | $0.888 \pm 0.056$               | $0.887 \pm 0.056$               | $0.837 \pm 0.045$                 | $0.832 \pm 0.061$               |
| page-blocks-1-3-vs-4   | $0.765 \pm 0.095$                 | $0.772 \pm 0.101$               | $0.821 \pm 0.127$                 | $0.755 \pm 0.106$               | $0.793 \pm 0.108$               | $0.740 \pm 0.089$                 | $0.753 \pm 0.090$               |
| yeast-1-vs-7   | $0.594 \pm 0.037$                 | $0.594 \pm 0.040$               | $0.696 \pm 0.104$                 | $0.666 \pm 0.093$               | $0.660 \pm 0.099$               | $0.675 \pm 0.088$                 | $0.677 \pm 0.089$               |
| ecoli-0-1-3-7-vs-2-6   | $0.831 \pm 0.193$                 | $0.844 \pm 0.199$               | $0.845 \pm 0.200$                 | $0.843 \pm 0.202$               | $0.840 \pm 0.204$               | $0.837 \pm 0.199$                 | $0.834 \pm 0.199$               |
| yeast-1-4-5-8- $vs$ -7   | $0.544 \pm 0.012$                 | $0.546 \pm 0.015$               | $0.571 \pm 0.062$                 | $0.630 \pm 0.097$               | $0.629 \pm 0.098$               | $0.579 \stackrel{1}{\pm} 0.063$   | $0.586 \pm 0.072$               |
| ecoli-0-1-4-7-vs-5-6   | $0.742 \pm 0.131$                 | $0.829 \stackrel{1}{\pm} 0.136$ | $0.882 \overset{1,2}{\pm} 0.115$  | $0.863 \pm 0.108$               | $0.870 \pm 0.104$               | $0.859 \pm 0.089$                 | $0.886 \pm 0.083$               |
| yeast-2-vs-8   | $0.637 \pm 0.090$                 | $0.703 \stackrel{1}{\pm} 0.077$ | $0.785 \pm 0.112$                 | $0.776 \stackrel{1}{\pm} 0.111$ | $0.776 \pm 0.111$               | $0.779 \stackrel{1}{\pm} 0.110$   | $0.775 \pm 0.112$               |
| yeast-0-2-5-7-9-vs-3-6-8   | $0.576 \pm 0.028$                 | $0.543 \stackrel{1}{\pm} 0.027$ | $0.813 \pm 0.112$                 | $0.899 \pm 0.033$               | $0.898 \pm 0.033$               | $0.868 \pm 0.058$                 | $0.888 \pm 0.054$               |
| glass2   | $0.607 \stackrel{2}{\pm} 0.098$   | $0.621 \pm 0.093$               | $0.638 \stackrel{1,2}{\pm} 0.123$ | $0.740 \pm 0.109$               | $0.739 \pm 0.109$               | $0.658 \pm 0.085$                 | $0.661 \pm 0.084$               |
|  | <u> </u>                          | _                               | 1                                 | 1,2,3,6,7                       | 1,2,3,6,7                       | 1,2                               | 1,2                             |

Table 9: Results for AUC metric

|           | GNB (1) | OSB (2) | OKNORAU (3) | TBAC (4) | OTBAC (5) | TBAW (6) | OTBAW (7) |
|-----------|---------|---------|-------------|----------|-----------|----------|-----------|
| Mean rank | 2.171   | 2.634   | 4.659       | 4.817    | 5.110     | 3.976    | 4.634     |
|           | _       | _       | 1,2         | 1,2,6    | 1,2,6     | 1,2      | 1,2,6     |

Table 10: Results for mean ranks according to AUC metric

| Dataset   | GNB (1)                             | OSB (2)                         | OKNORAU (3)                   | TBAC (4)                          | OTBAC (5)  | TBAW (6)                        | OTBAW (7)                 |
|---|-------------------------------------|---------------------------------|-------------------------------|-----------------------------------|--|---------------------------------|---------------------------|
| glass-0-1-6-vs-2  | $0.524 \pm 0.114$                   | $0.511 \pm 0.128$               | $0.572 \pm 0.187$             | $0.702 \pm 0.122$                 | $0.705 \pm 0.122$  | $0.543 \pm 0.094$               | $0.540 \pm 0.096$         |
| ecoli-0-3-4-7-vs-5-6  | $0.756 \pm 0.105$                   | $0.827 \pm 0.085$               | $0.889 \pm 0.083$             | $0.876 \pm 0.086$                 | $0.876 \pm 0.086$  | $0.882 \stackrel{2}{\pm} 0.095$ | $0.883 \pm 0.087$         |
| shuttle- $c2$ - $vs$ - $c4$   | $0.988 \pm 0.023$                   | $0.999 \stackrel{1}{\pm} 0.005$ | $0.999 \pm 0.005$             | $0.788 \pm 0.398$                 | $0.788 \pm 0.398$  | $0.786 \pm 0.397$               | $0.786 \pm 0.397$         |
| $glass\hbox{-}0\hbox{-}1\hbox{-}4\hbox{-}6\hbox{-}vs\hbox{-}2$  | $0.528 \pm 0.145$                   | $0.533 \pm 0.148$               | $0.590 \pm 0.178$             | $0.720 \pm 0.109$                 | $0.718 \pm 0.107$  | $0.576 \pm 0.086$               | $0.575 \pm 0.088$         |
| yeast-1-2-8-9-vs-7  | $0.281 \pm 0.039$                   | $0.283 \pm 0.041$               | $0.469 \pm 0.059$             | $0.655 \pm 0.117$                 | $0.655 \pm 0.117$  | $0.508 \pm 0.074$               | $0.507 \pm 0.085$         |
| ecoli- $0$ - $1$ - $4$ - $6$ - $vs$ - $5$   | $0.835 \pm 0.108$                   | $0.885 \pm 0.094$               | $0.894 \pm 0.099$             | $0.890 \pm 0.090$                 | $0.893 \pm 0.087$  | $0.885 \pm 0.093$               | $0.894 \pm 0.087$         |
| $glass\hbox{-} 0\hbox{-} 1\hbox{-} 6\hbox{-} vs\hbox{-} 5$  | $0.933 \pm 0.202$                   | $0.885 \pm 0.247$               | $0.886 \pm 0.247$             | $0.814 \pm 0.249$                 | $0.814 \pm 0.249$  | $0.813 \pm 0.249$               | $0.813 \pm 0.249$         |
| yeast-2-vs-4  | $0.445 \pm 0.216$                   | $0.399 \pm 0.186$               | $0.837 \pm 0.127$             | $0.842 \pm 0.084$                 | $0.844 \pm 0.083$  | $0.836 \pm 0.095$               | $0.847 \pm 0.080$         |
| $glass\hbox{-} 0\hbox{-} 6\hbox{-} vs\hbox{-} 5$  | $0.903 \stackrel{2}{\pm} 0.272$     | $0.880 \pm 0.276$               | $0.880 \pm 0.276$             | $0.755 \pm 0.332$                 | $0.755 \pm 0.332$  | $0.754 \pm 0.332$               | $0.754 \pm 0.332$         |
| ecoli-0-3-4-6-vs-5  | $0.735 \pm 0.109$                   | $0.807 \pm 0.106$               | $0.890 \pm 0.112$             | $0.889 \pm 0.099$                 | $0.886 \pm 0.097$  | $0.890 \pm 0.099$               | $0.883 \pm 0.102$         |
| yeast - 0 - 3 - 5 - 9 - vs - 7 - 8  | $0.324 \pm 0.051$                   | $0.297 \stackrel{1}{\pm} 0.067$ | $0.673 \pm 0.109$             | $0.577 \pm 0.139$                 | $0.622 \pm 0.128$  | $0.539 \pm 0.121$               | $0.582 \pm 0.127$         |
| $glass\hbox{-} 0\hbox{-} 1\hbox{-} 5\hbox{-} vs\hbox{-} 2$  | $0.518 \stackrel{2}{\pm} 0.148$     | $0.462 \pm 0.118$               | $0.588 \pm 0.180$             | $0.687 \pm 0.145$                 | $0.684 \pm 0.145$  | $0.477 \pm 0.090$               | $0.475 \pm 0.094$         |
| ecoli- $0$ - $6$ - $7$ - $vs$ - $5$   | $0.796 \pm 0.145$                   | $0.835 \pm 0.109$               | $0.872 \pm 0.106$             | $0.854 \pm 0.121$                 | $0.847 \pm 0.120$  | $0.855 \pm 0.124$               | $0.856 \pm 0.115$         |
| ecoli-0-2-3-4-vs-5  | $0.768 \pm 0.100$                   | $0.831 \pm 0.097$               | $0.893 \pm 0.092$             | $0.897 \pm 0.086$                 | $0.897 \pm 0.087$  | $0.895 \pm 0.087$               | $0.897 \pm 0.089$         |
| ecoli4  | $0.883 \pm 0.085$                   | $0.895 \stackrel{1}{\pm} 0.063$ | $0.930 \pm 0.073$             | $0.927 \pm 0.091$                 | $0.929 \pm 0.091$  | $0.935 \pm 0.089$               | $0.932 \pm 0.089$         |
| yeast5  | $0.807 \pm 0.028$                   | $0.779 \stackrel{1}{\pm} 0.037$ | $0.832 \pm 0.027$             | $0.971 \pm 0.024$                 | $0.971 \pm 0.024$  | $0.965 \pm 0.036$               | $0.964 \pm 0.040$         |
| ecoli-0-4-6-vs-5  | $0.842 \pm 0.122$                   | $0.879 \pm 0.108$               | $0.894 \pm 0.102$             | $0.895 \pm 0.090$                 | $0.895 \pm 0.090$  | $0.895 \pm 0.092$               | $0.896 \pm 0.091$         |
| $led 7 digit \hbox{-} 0\hbox{-} 2\hbox{-} 4\hbox{-} 5\hbox{-} 6\hbox{-} 7\hbox{-} 8\hbox{-} 9\hbox{-} vs\hbox{-} 1$ | $0.849 \pm 0.077$                   | $0.872 \pm 0.065$               | $0.876 \pm 0.071$             | $0.546 \pm 0.177$                 | $0.548 \pm 0.178$  | $0.878 \pm 0.094$               | $0.879 \pm 0.094$         |
| ecoli- $0$ - $1$ - $vs$ - $5$   | $0.725 \pm 0.286$                   | $0.838 \pm 0.180$               | $0.891 \pm 0.096$             | $0.891 \pm 0.086$                 | $0.891 \pm 0.086$  | $0.899 \pm 0.084$               | $0.899 \pm 0.084$         |
| ecoli - 0 - 2 - 6 - 7 - vs - 3 - 5  | $0.278 \pm 0.340$                   | $0.433 \pm 0.328$               | $0.605 \pm 0.261$             | $0.813 \pm 0.128$                 | $0.806 \pm 0.131$  | $0.804 \pm 0.112$               | $0.807 \pm 0.120$         |
| ecoli - 0 - 1 - 4 - 7 - vs - 2 - 3 - 5 - 6  | $0.517 \pm 0.198$                   | $0.537 \pm 0.223$               | $0.712 \pm 0.205$             | $0.782 \pm 0.136$                 | $0.836 \pm 0.117$  | $0.784 \pm 0.118$               | $0.854 \pm 0.102$         |
| shuttle-c0-vs-c4  | $0.990 \pm 0.013$                   | $0.989 \pm 0.013$               | $0.989 \pm 0.013$             | $0.994 \pm 0.009$                 | $0.994 \pm 0.009$  | $0.994 \pm 0.009$               | $0.994 \pm 0.009$         |
| ecoli-0-6-7- $vs$ -3-5  | $0.258 \pm 0.355$                   | $0.367 \pm 0.375$               | $0.619 \pm 0.282$             | $0.798 \pm 0.122$                 | $0.806 \pm 0.129$  | $0.796 \pm 0.110$               | $0.812 \pm 0.111$         |
| vowel0  | 0.913 ± 0.040                       | $0.904 \pm 0.024$               | $0.924 \pm 0.027$             | $0.868 \pm 0.070$                 | $0.915 \pm 0.056$  | $0.871 \pm 0.064$               | $0.894 \pm 0.045$         |
| glass4  | $0.304 \pm 0.325$                   | $0.708 \pm 0.252$               | $0.738 \pm 0.212$             | $0.677 \pm 0.281$                 | $0.704 \pm 0.265$  | $0.603 \pm 0.294$               | $0.644 \pm 0.275$         |
| yeast - 0 - 5 - 6 - 7 - 9 - vs - 4  | $0.164 \pm 0.068$                   | $0.141 \pm 0.061$               | $0.639 \pm 0.237$             | $0.790 \pm 0.053$                 | $0.800 \pm 0.052$  | $0.676 \pm 0.142$               | $0.718 \pm 0.150$         |
| $yeast\hbox{-} 0\hbox{-} 2\hbox{-} 5\hbox{-} 6\hbox{-} vs\hbox{-} 3\hbox{-} 7\hbox{-} 8\hbox{-} 9$                  | $0.598 \stackrel{2}{\pm} 0.077$     | $0.747 \pm 0.063$ $1,4,5,6,7$   | $0.749 \pm 0.059$ $1.4.5.6.7$ | $0.664 \pm 0.077$                 | $0.717 \pm 0.077$ $1,4,6,7$  | $0.552 \pm 0.096$               | $0.639 \pm 0.107$         |
| ecoli- $0$ - $1$ - $vs$ - $2$ - $3$ - $5$   | $0.305 \stackrel{\circ}{\pm} 0.352$ | $0.339 \pm 0.373$               | $0.776 \pm 0.202$             | $0.815 \pm 0.169$                 | $0.815 \pm 0.169$  | $0.836 \pm 0.114$               | $0.852 \pm 0.095$         |
| ecoli-0-3-4-vs-5  | $0.772 \pm 0.112$                   | $0.837 \pm 0.120$               | $0.887 \pm 0.126$             | $0.895 \pm 0.125$                 | $0.895 \pm 0.125$  | $0.898 \pm 0.122$               | $0.898 \pm 0.122$ $1,2,3$ |
| glass5  | $0.933 \pm 0.163$                   | $0.856 \pm 0.275$               | $0.858 \pm 0.275$             | $0.834 \pm 0.302$                 | $0.848 \pm 0.278$  | $0.832 \pm 0.301$               | $0.845 \pm 0.277$         |
| yeast4  | $0.361 \pm 0.067$                   | $0.275 \pm 0.049$               | $0.460 \pm 0.061$             | $0.798 \pm 0.082 \\ 1,2,3,6,7$    | $0.803 \pm 0.077$  | $0.605 \pm 0.105$               | $0.550 \pm 0.144$         |
| $glass\hbox{-} 0\hbox{-} 4\hbox{-} vs\hbox{-} 5$  | $0.963 \pm 0.149$                   | $0.928 \pm 0.170$               | $0.934 \pm 0.167$             | $0.896 \pm 0.219$                 | $0.896 \pm 0.219$  | $0.896 \pm 0.219$               | $0.896 \pm 0.219$         |
| yeast6  | $0.529 \pm 0.045$                   | $0.531 \pm 0.051$               | $0.746 \pm 0.056$             | $0.884 \pm 0.062$                 | $0.883 \pm 0.062$  | $0.829 \pm 0.050$               | $0.823 \pm 0.067$ $1,2,3$ |
| $page-blocks-1\hbox{-}3\hbox{-}vs\hbox{-}4$   | $0.730 \pm 0.130$                   | $0.739 \pm 0.136$               | $0.794 \pm 0.164$             | $0.709 \stackrel{all}{\pm} 0.145$ | $0.759 \pm 0.144$  | $0.691 \pm 0.128$               | $0.710 \pm 0.126$         |
| yeast-1- $vs$ -7  | $0.452 \pm 0.051$                   | $0.453 \pm 0.058$               | $0.670 \pm 0.134$             | $0.641 \pm 0.112$                 | $0.638 \pm 0.119$  | $0.645 \pm 0.098$               | $0.650 \pm 0.099$         |
| ecoli- $0$ - $1$ - $3$ - $7$ - $vs$ - $2$ - $6$   | $0.725 \pm 0.377$                   | $0.737 \pm 0.385$               | $0.738 \pm 0.385$             | $0.737 \pm 0.385$                 | $0.736 \pm 0.384$  | $0.732 \pm 0.381$               | $0.729 \pm 0.380$         |
| yeast-1-4-5-8- $vs$ -7  | $0.293 \pm 0.044$                   | $0.299 \pm 0.050$               | $0.451 \pm 0.069$             | $0.602 \pm 0.142$                 | $0.602 \pm 0.142$  | $0.471 \pm 0.102$               | $0.490 \pm 0.114$         |
| ecoli- $0$ - $1$ - $4$ - $7$ - $vs$ - $5$ - $6$   | $0.669 \pm 0.203$                   | $0.789 \pm 0.207$               | $0.864 \pm 0.150$             | $0.837 \pm 0.170$                 | $0.845 \pm 0.166$  | $0.843 \pm 0.107$               | $0.876 \pm 0.095$         |
| yeast-2- $vs$ -8  | $0.518 \pm 0.136$                   | $0.650 \pm 0.094$               | $0.737 \pm 0.176$             | $0.728 \pm 0.153$                 | $0.728 \pm 0.153$  | $0.738 \pm 0.146$               | $0.728 \pm 0.153$         |
| yeast - 0 - 2 - 5 - 7 - 9 - vs - 3 - 6 - 8  | $0.398 \pm 0.065$                   | $0.303 \pm 0.073$               | $0.784 \pm 0.161$             | $0.896 \pm 0.036$                 | $0.895 \pm 0.036$  | $0.860 \pm 0.065$               | $0.884 \pm 0.061$         |
| glass2  | $0.570 \stackrel{2}{\pm} 0.109$     | $0.577 \pm 0.078$               | $0.614 \pm 0.137$             | $0.732 \pm 0.113$                 | $ \begin{array}{c} 1,2,3,6\\0.731 \pm 0.113\\\\1,2,3,6,7 \end{array} $ | $0.605 \pm 0.083$               | $0.606 \pm 0.080$ $1,2$   |

Table 11: Results for GMEAN metric

|           | GNB (1) | OSB (2) | OKNORAU (3) | TBAC (4) | OTBAC (5) | TBAW (6) | OTBAW (7) |
|-----------|---------|---------|-------------|----------|-----------|----------|-----------|
| Mean rank | 2.220   | 2.659   | 4.854       | 4.598    | 5.012     | 4.000    | 4.659     |
|           | _       | _       | 1,2         | 1,2      | 1,2,6     | 1,2      | 1,2,6     |

Table 12: Results for mean ranks according to GMEAN metric