Dataset	kNN (1)	OSB (2)	OKNORAU (3)	TBAC (4)	OTBAC (5)	TBAW (6)	OTBAW (7)
glass-0-1-6-vs-2	0.522 ± 0.062	0.686 ± 0.128	0.679 ± 0.126	0.763 ± 0.092	0.745 ± 0.090	0.739 ± 0.094	0.747 ± 0.096
ecoli-0-3-4-7-vs-5-6	0.869 ± 0.097	$0.900 \stackrel{1}{\pm} 0.071$	$0.898 \stackrel{1}{\pm} 0.071$	0.879 ± 0.074	0.878 ± 0.078	0.900 ± 0.077	0.883 ± 0.077
shuttle- $c2$ - vs - $c4$	0.585 ± 0.177	$0.995 \stackrel{3}{\pm} 0.034$	0.995 ± 0.034	0.855 ± 0.218	0.910 ± 0.178	0.860 ± 0.218	0.920 ± 0.176
glass-0-1-4-6-vs-2	0.518 ± 0.062	0.707 ± 0.110	0.699 ± 0.122	$0.750 \stackrel{1}{\pm} 0.113$	$0.740 \stackrel{1}{\pm} 0.106$	$0.721 \stackrel{1}{\pm} 0.106$	$0.738 \stackrel{1}{\pm} 0.098$
yeast-1-2-8-9- vs -7	0.508 ± 0.024	$0.640 \stackrel{1}{\pm} 0.086$	$0.650 \stackrel{1}{\pm} 0.087$	0.649 ± 0.091	0.643 ± 0.095	$0.674 \stackrel{1}{\pm} 0.084$	0.682 ± 0.087
ecoli-0-1-4-6-vs-5	0.886 ± 0.091	$0.920 \stackrel{1}{\pm} 0.075$	0.918 ± 0.074	$0.901 \stackrel{1}{\pm} 0.080$	$0.903 \stackrel{1}{\pm} 0.077$	0.904 ± 0.078	0.905 ± 0.078
$glass\hbox{-} 0\hbox{-} 1\hbox{-} 6\hbox{-} vs\hbox{-} 5$	0.668 ± 0.151	0.884 ± 0.147	0.879 ± 0.150	0.845 ± 0.160	0.838 ± 0.160	0.846 ± 0.153	0.847 ± 0.154
yeast-2- vs -4	0.820 ± 0.066	0.877 ± 0.063	0.879 ± 0.061	$0.839 \stackrel{1}{\pm} 0.063$	$0.846 \stackrel{1}{\pm} 0.065$	$0.843 \stackrel{1}{\pm} 0.068$	0.853 ± 0.063
$glass\hbox{-} 0\hbox{-} 6\hbox{-} vs\hbox{-} 5$	0.714 ± 0.194	0.920 ± 0.139	0.930 ± 0.113	0.805 ± 0.181	$0.796 \stackrel{1}{\pm} 0.187$	$0.830 \stackrel{1}{\pm} 0.155$	0.816 ± 0.170
ecoli-0-3-4-6-vs-5	0.895 ± 0.094	0.917 ± 0.087	0.914 ± 0.087	$0.896 \stackrel{1}{\pm} 0.088$	$0.900 \stackrel{1}{\pm} 0.090$	0.895 ± 0.092	0.893 ± 0.092
yeast-0-3-5-9-vs-7-8	0.641 ± 0.058	0.707 ± 0.060	0.706 ± 0.059	$0.652 \stackrel{1}{\pm} 0.067$	$0.650 \stackrel{1}{\pm} 0.061$	0.666 ± 0.066	0.655 ± 0.057
$glass\hbox{-}0\hbox{-}1\hbox{-}5\hbox{-}vs\hbox{-}2$	0.533 ± 0.066	0.682 ± 0.145	0.681 ± 0.142	0.728 ± 0.131	0.727 ± 0.108	0.690 ± 0.126	0.723 ± 0.105
ecoli-0-6-7-vs-5	$0.840 \stackrel{-}{\pm} 0.108$	0.872 ± 0.098	0.874 ± 0.096	0.869 ± 0.102	0.865 ± 0.100	0.869 ± 0.099	0.871 ± 0.107
ecoli-0-2-3-4-vs-5	0.890 ± 0.083	$0.913 \stackrel{4}{\pm} 0.080$	0.910 ± 0.079	0.907 ± 0.080	$0.908 \stackrel{-}{\pm} 0.080$	$0.908 \stackrel{-}{\pm} 0.080$	$0.908 \stackrel{-}{\pm} 0.080$
ecoli4	0.894 ± 0.100	$0.919 \stackrel{3}{\pm} 0.097$	0.918 ± 0.097	0.924 ± 0.091	0.938 ± 0.081	0.932 ± 0.088	0.932 ± 0.082
yeast5	0.821 ± 0.064	0.935 ± 0.049	0.934 ± 0.053	0.926 ± 0.061	0.940 ± 0.052	0.940 ± 0.053	0.930 ± 0.049
ecoli-0-4-6- vs -5	0.901 ± 0.084	0.916 ± 0.082	0.916 ± 0.081	0.902 ± 0.080	0.906 ± 0.083	0.902 ± 0.085	0.906 ± 0.083
$led 7 digit \hbox{-} 0\hbox{-} 2\hbox{-} 4\hbox{-} 5\hbox{-} 6\hbox{-} 7\hbox{-} 8\hbox{-} 9\hbox{-} vs\hbox{-} 1$	0.635 ± 0.077	0.899 ± 0.069	0.878 ± 0.086	0.615 ± 0.080	0.653 ± 0.087	0.885 ± 0.073	0.874 ± 0.119
ecoli- 0 - 1 - vs - 5	$0.891 \stackrel{4}{\pm} 0.089$	0.920 ± 0.074	0.918 ± 0.074	0.903 ± 0.081	$0.908 \stackrel{4}{\pm} 0.075$	0.908 ± 0.079	0.912 ± 0.072
ecoli - 0 - 2 - 6 - 7 - vs - 3 - 5	0.797 ± 0.125	0.856 ± 0.087	0.872 ± 0.081	0.831 ± 0.109	0.835 ± 0.103	0.842 ± 0.100	0.839 ± 0.099
ecoli - 0 - 1 - 4 - 7 - vs - 2 - 3 - 5 - 6	0.833 ± 0.100	0.848 ± 0.082	0.850 ± 0.081	0.861 ± 0.081	0.858 ± 0.081	0.856 ± 0.081	0.858 ± 0.077
shuttle-c0-vs-c4	0.996 ± 0.008	0.996 ± 0.008	0.996 ± 0.008	0.995 ± 0.008	0.995 ± 0.008	0.995 ± 0.008	0.995 ± 0.008
ecoli- 0 - 6 - 7 - vs - 3 - 5	0.792 ± 0.119	0.845 ± 0.104	0.861 ± 0.102	0.826 ± 0.104	0.829 ± 0.105	0.830 ± 0.106	0.834 ± 0.100
vowel0	0.970 ± 0.038	0.999 ± 0.002	$0.999 \stackrel{1}{\pm} 0.002$	0.804 ± 0.068	0.895 ± 0.062	0.932 ± 0.052	0.904 ± 0.058
glass4	0.750 ± 0.158	0.909 ± 0.143	0.909 ± 0.143	0.786 ± 0.141	$0.805 \stackrel{4}{\pm} 0.152$	0.789 ± 0.150	0.808 ± 0.154
yeast - 0 - 5 - 6 - 7 - 9 - vs - 4	0.649 ± 0.074	0.805 ± 0.060	0.804 ± 0.059	0.785 ± 0.054	0.789 ± 0.050	0.801 ± 0.050	0.801 ± 0.059
yeast - 0 - 2 - 5 - 6 - vs - 3 - 7 - 8 - 9	0.756 ± 0.042	0.795 ± 0.046	0.790 ± 0.045	$0.765 \stackrel{1}{\pm} 0.052$	0.776 ± 0.053	0.760 ± 0.053	0.760 ± 0.054
ecoli- 0 - 1 - vs - 2 - 3 - 5	0.833 ± 0.093	0.879 ± 0.093	0.877 ± 0.091	0.855 ± 0.090	0.859 ± 0.087	0.858 ± 0.087	0.855 ± 0.088
ecoli- 0 - 3 - 4 - vs - 5	0.903 ± 0.105	0.916 ± 0.100	0.913 ± 0.098	0.912 ± 0.104	0.911 ± 0.104	0.909 ± 0.104	0.905 ± 0.110
glass5	0.648 ± 0.165	0.820 ± 0.198	0.829 ± 0.199	0.815 ± 0.180	0.837 ± 0.180	0.827 ± 0.175	0.838 ± 0.181
yeast4	0.555 ± 0.043	0.724 ± 0.072	0.728 ± 0.076	0.747 ± 0.071	0.749 ± 0.071	0.782 ± 0.079	0.783 ± 0.072
$glass\hbox{-} 0\hbox{-} 4\hbox{-} vs\hbox{-} 5$	0.744 ± 0.204	0.971 ± 0.064 $1,4,5,6,7$	0.981 ± 0.045 $1,4,5,6,7$	0.838 ± 0.156	0.856 ± 0.159	0.860 ± 0.147	0.832 ± 0.159
yeast6	0.757 ± 0.091	0.811 ± 0.097	0.813 ± 0.098	0.839 ± 0.088 $1,2,3$	0.845 ± 0.082 $1,2,3$	0.854 ± 0.082 $1,2,3$	0.860 ± 0.076 $1,2,3$
page-blocks-1-3-vs-4	0.818 ± 0.106	0.929 ± 0.073	0.930 ± 0.072	0.756 ± 0.102	0.792 ± 0.105	0.816 ± 0.114	0.810 ± 0.102
yeast-1-vs-7	0.529 ± 0.043	0.646 ± 0.099	0.661 ± 0.105	0.637 ± 0.092	0.622 ± 0.098	0.656 ± 0.104	$0.649 \overset{4,5}{\pm} 0.104$
ecoli-0-1-3-7-vs-2-6	0.850 ± 0.200	0.840 ± 0.197 $6,7$	$0.841 \pm 0.197 \\ 6,7$	0.842 ± 0.208	0.837 ± 0.206	0.827 ± 0.199	$0.835 \pm 0.202 \\ 6$
yeast-1-4-5-8- vs -7	0.501 ± 0.010	0.580 ± 0.079	0.588 ± 0.086	0.596 ± 0.086	0.594 ± 0.091	0.623 ± 0.102	0.618 ± 0.093 $1,2,3$
ecoli-0-1-4-7-vs-5-6	0.865 ± 0.098	0.907 ± 0.070	0.908 ± 0.067	0.894 ± 0.078	0.889 ± 0.083	0.897 ± 0.073	0.894 ± 0.082
yeast-2-vs-8	0.774 ± 0.114	0.784 ± 0.122 $1,4,5,6,7$	$0.790 \stackrel{2}{\pm} 0.112$	0.773 ± 0.116	0.776 ± 0.111	0.773 ± 0.116	0.775 ± 0.111
$yeast\hbox{-}0\hbox{-}2\hbox{-}5\hbox{-}7\hbox{-}9\hbox{-}vs\hbox{-}3\hbox{-}6\hbox{-}8$	0.892 ± 0.042	0.896 ± 0.039	0.894 ± 0.041	0.897 ± 0.039	0.901 ± 0.038 $1,3$	0.896 ± 0.041	0.898 ± 0.037
glass2	0.547 ± 0.083	0.710 ± 0.131	0.703 ± 0.111	0.755 ± 0.106	0.757 ± 0.103	0.746 ± 0.093	0.753 ± 0.102
	<u> </u>	1	1	1,2,3,6,7	1,2,3,4,6	1,2,3	1,2,3,6

Table 1: Results for BAC metric

	$\mid \text{kNN (1)} \mid \text{OSB (2)} \mid \text{OKNORAU (3)} \mid \text{TBAC (4)} \mid \text{OTBAC (5)} \mid \text{TBAW (6)} \mid \text{OTBAW (7)}$									
$Mean\ rank$	1.585	5.256	5.232	3.402	4.037	4.134	4.354			
	_	1,4,5,6	1,4,5,6	1	1,4	1,4	1,4			

Table 2: Results for mean ranks according to BAC metric

Dataset	kNN (1)	OSB (2)	OKNORAU (3)	TBAC (4)	OTBAC (5)	TBAW (6)	OTBAW (7)
glass-0-1-6-vs-2	0.088 ± 0.169	0.352 ± 0.163	0.337 ± 0.158	0.350 ± 0.090	0.316 ± 0.077	0.307 ± 0.077	0.316 ± 0.087
ecoli-0-3-4-7-vs-5-6	0.813 ± 0.131	0.773 ± 0.101	0.753 ± 0.100	0.795 ± 0.115	0.787 ± 0.121	0.784 ± 0.123	0.779 ± 0.125
shuttle- $c2$ - vs - $c4$	0.180 ± 0.366	0.993 ± 0.046	0.993 ± 0.046	$0.720 \stackrel{3}{\pm} 0.433$	0.833 ± 0.348	0.727 ± 0.435	0.847 ± 0.347
$glass\hbox{-} 0\hbox{-} 1\hbox{-} 4\hbox{-} 6\hbox{-} vs\hbox{-} 2$	0.074 ± 0.165	0.358 ± 0.140	0.350 ± 0.160	$0.334 \stackrel{1}{\pm} 0.104$	$0.313 \stackrel{1}{\pm} 0.097$	$0.288 \stackrel{1}{\pm} 0.091$	$0.307 \stackrel{1}{\pm} 0.081$
yeast-1-2-8-9- vs -7	0.026 ± 0.079	0.249 ± 0.132	0.250 ± 0.121	0.175 ± 0.078	0.162 ± 0.088	$0.166 \stackrel{1}{\pm} 0.059$	0.178 ± 0.063
ecoli- 0 - 1 - 4 - 6 - vs - 5	0.845 ± 0.127	0.855 ± 0.112	0.832 ± 0.103	0.823 ± 0.111	0.814 ± 0.108	0.824 ± 0.110	0.818 ± 0.109
$glass\hbox{-} 0\hbox{-} 1\hbox{-} 6\hbox{-} vs\hbox{-} 5$	0.332 ± 0.282	0.611 ± 0.253	0.612 ± 0.264	0.547 ± 0.250	0.527 ± 0.247	0.561 ± 0.239	0.539 ± 0.242
yeast-2- vs -4	0.752 ± 0.104	0.766 ± 0.090	0.762 ± 0.092	$0.760 \stackrel{1}{\pm} 0.096$	$0.764 \stackrel{1}{\pm} 0.097$	$0.743 \stackrel{1}{\pm} 0.103$	$0.755 \stackrel{1}{\pm} 0.096$
$glass\hbox{-} 0\hbox{-} 6\hbox{-} vs\hbox{-} 5$	0.490 ± 0.393	$0.785 \stackrel{6}{\pm} 0.266$	0.801 ± 0.219	0.648 ± 0.327	0.614 ± 0.346	0.695 ± 0.267	0.646 ± 0.302
ecoli-0-3-4-6-vs-5	0.853 ± 0.140	0.852 ± 0.131	0.830 ± 0.130	0.778 ± 0.148	0.779 ± 0.153	0.781 ± 0.155	$0.770 \stackrel{1}{\pm} 0.157$
yeast - 0 - 3 - 5 - 9 - vs - 7 - 8	0.397 ± 0.126	0.403 ± 0.080	0.393 ± 0.077	0.401 ± 0.130	0.396 ± 0.127	0.405 ± 0.117	0.398 ± 0.112
$glass\hbox{-} 0\hbox{-} 1\hbox{-} 5\hbox{-} vs\hbox{-} 2$	0.113 ± 0.179	0.346 ± 0.179	0.336 ± 0.169	0.335 ± 0.115	0.321 ± 0.098	0.289 ± 0.096	0.313 ± 0.086
ecoli-0-6-7-vs-5	0.774 ± 0.170	0.727 ± 0.153	0.719 ± 0.148	0.782 ± 0.169	0.769 ± 0.166	0.765 ± 0.163	0.754 ± 0.175
ecoli-0-2-3-4-vs-5	0.852 ± 0.121	0.825 ± 0.129	0.806 ± 0.128	0.826 ± 0.134	0.819 ± 0.134	0.824 ± 0.136	0.820 ± 0.133
ecoli4	0.853 ± 0.143	$0.802 \stackrel{3}{\pm} 0.141$	0.794 ± 0.140	0.867 ± 0.136	0.870 ± 0.133	0.854 ± 0.150	0.827 ± 0.136
yeast5	0.706 ± 0.114	0.706 ± 0.078	0.694 ± 0.081	0.707 ± 0.091	0.698 ± 0.080	0.674 ± 0.084	0.687 ± 0.082
ecoli-0-4-6-vs-5	0.860 ± 0.134	0.851 ± 0.141	0.846 ± 0.134	0.794 ± 0.133	0.793 ± 0.142	0.794 ± 0.142	0.792 ± 0.144
$led 7 digit \hbox{-} 0 \hbox{-} 2 \hbox{-} 4 \hbox{-} 5 \hbox{-} 6 \hbox{-} 7 \hbox{-} 8 \hbox{-} 9 \hbox{-} vs \hbox{-} 1$	0.388 ± 0.185	0.672 ± 0.094	0.661 ± 0.121	0.324 ± 0.185	0.391 ± 0.184	0.733 ± 0.102	0.667 ± 0.172
ecoli-0-1- vs -5	$0.855 \stackrel{4}{\pm} 0.117$	0.865 ± 0.105	0.847 ± 0.106	0.869 ± 0.108	$0.874 \stackrel{4}{\pm} 0.102$	0.871 ± 0.109	0.875 ± 0.102
ecoli - 0 - 2 - 6 - 7 - vs - 3 - 5	0.699 ± 0.217	0.727 ± 0.135	0.723 ± 0.130	0.728 ± 0.186	$0.728 \stackrel{3}{\pm} 0.174$	0.710 ± 0.179	$0.705 \stackrel{3}{\pm} 0.185$
ecoli - 0 - 1 - 4 - 7 - vs - 2 - 3 - 5 - 6	0.773 ± 0.159	0.688 ± 0.123	0.683 ± 0.117	0.798 ± 0.119	0.786 ± 0.121	0.760 ± 0.126	0.764 ± 0.126
shuttle-c0-vs-c4	0.996 ± 0.008	0.996 ± 0.008	0.996 ± 0.008	0.995 ± 0.008	0.995 ± 0.008	0.995 ± 0.008	0.995 ± 0.008
ecoli-0-6-7-vs-3-5	0.689 ± 0.199	0.708 ± 0.167	0.710 ± 0.164	0.719 ± 0.180	0.722 ± 0.177	0.701 ± 0.182	0.716 ± 0.172
vowel0	0.963 ± 0.046	0.989 ± 0.020	0.990 ± 0.019	$0.706 \stackrel{6}{\pm} 0.115$	$0.827 \stackrel{6}{\pm} 0.085$	0.878 ± 0.071	0.864 ± 0.078
glass4	0.572 ± 0.309	0.709 ± 0.248	0.704 ± 0.247	0.535 ± 0.231	0.552 ± 0.249	0.534 ± 0.242	0.560 ± 0.254
yeast - 0 - 5 - 6 - 7 - 9 - vs - 4	0.405 ± 0.157	0.564 ± 0.089	0.557 ± 0.086	0.558 ± 0.082	0.548 ± 0.090	0.485 ± 0.056	0.520 ± 0.097
yeast - 0 - 2 - 5 - 6 - vs - 3 - 7 - 8 - 9	0.626 ± 0.075	0.554 ± 0.064	0.536 ± 0.062	0.621 ± 0.086	0.625 ± 0.088	0.596 ± 0.093	0.611 ± 0.087
ecoli-0-1- vs -2-3-5	0.773 ± 0.150	0.752 ± 0.141	0.742 ± 0.137	0.803 ± 0.136	0.807 ± 0.131	0.799 ± 0.134	0.781 ± 0.143
ecoli-0-3-4-vs-5	0.861 ± 0.162	0.840 ± 0.156	0.817 ± 0.154	0.822 ± 0.162	0.817 ± 0.164	0.816 ± 0.165	0.804 ± 0.175
glass5	$\begin{array}{c} 3,4,5,6,7 \\ 0.325 \pm 0.332 \end{array}$	0.540 ± 0.320	0.543 ± 0.321	0.454 ± 0.250	0.447 ± 0.229	0.444 ± 0.224	0.459 ± 0.243
yeast4	0.170 ± 0.122	0.385 ± 0.101	0.375 ± 0.100	0.384 ± 0.093	$0.392 \stackrel{1}{\pm} 0.091$	$0.345 \stackrel{1}{\pm} 0.074$	$0.350 \stackrel{1}{\pm} 0.072$
$glass\hbox{-} 0\hbox{-} 4\hbox{-} vs\hbox{-} 5$	0.547 ± 0.415	0.891 ± 0.147	0.903 ± 0.138	0.646 ± 0.272	0.669 ± 0.276	$0.668 \stackrel{1}{\pm} 0.251$	$0.641 \stackrel{1}{\pm} 0.272$
yeast6	0.553 ± 0.158	0.473 ± 0.131	0.470 ± 0.134	0.528 ± 0.117	0.506 ± 0.112	0.461 ± 0.104	0.458 ± 0.109
page-blocks-1-3-vs-4	$\begin{array}{c} 2,3,5,6,7 \\ 0.648 \pm 0.152 \end{array}$	0.703 ± 0.113	0.709 ± 0.114	0.527 ± 0.183	0.613 ± 0.183	0.625 ± 0.177	0.671 ± 0.172
yeast-1-vs-7	$0.101 \stackrel{4}{\pm} 0.143$	0.294 ± 0.141	0.304 ± 0.139	0.230 ± 0.090	$0.227 \stackrel{4}{\pm} 0.110$	$0.227 \stackrel{4}{\pm} 0.083$	0.225 ± 0.088
ecoli-0-1-3-7-vs-2-6	0.727 ± 0.386	0.533 ± 0.314	0.554 ± 0.334	$0.668 \stackrel{1}{\pm} 0.394$	0.586 ± 0.353	$0.423 \stackrel{1}{\pm} 0.270$	0.531 ± 0.325
yeast-1-4-5-8-vs-7	0.004 ± 0.031	0.164 ± 0.107	$0.169 \stackrel{6}{\pm} 0.111$	0.140 ± 0.065	0.133 ± 0.056	0.149 ± 0.068	0.143 ± 0.055
ecoli-0-1-4-7-vs-5-6	0.812 ± 0.160	0.787 ± 0.111	0.773 ± 0.104	0.832 ± 0.108	$0.820 \stackrel{1}{\pm} 0.117$	$0.800 \stackrel{1}{\pm} 0.115$	$0.808 \stackrel{1}{\pm} 0.133$
yeast-2-vs-8	0.661 ± 0.209	0.551 ± 0.195	0.536 ± 0.170	0.661 ± 0.209	0.665 ± 0.200	0.660 ± 0.211	0.656 ± 0.206
yeast-0-2-5-7-9-vs-3-6-8	0.829 ± 0.059	$0.750 \stackrel{3}{\pm} 0.052$	0.736 ± 0.054	0.823 ± 0.054	0.822 ± 0.054	0.819 ± 0.059	0.819 ± 0.057
glass2	0.152 ± 0.209	$0.366 \stackrel{3}{\pm} 0.169$	0.356 ± 0.149	0.337 ± 0.106	0.328 ± 0.097	$0.300 \overset{2,3}{\pm} 0.073$	0.319 ± 0.082
	_	1,5,6,7	1,5,6,7	1,5,6,7	1,6	1	1,6

Table 3: Results for F1 metric

	kNN (1)	OSB (2)	OKNORAU (3)	TBAC (4)	OTBAC (5)	TBAW (6)	OTBAW (7)
Mean rank	3.622	4.988	4.159	4.585	4.159	3.280	3.207
	_	1,3,6,7	7	1,6,7	6,7	_	_

Table 4: Results for mean ranks according to F1 metric

Dataset	kNN (1)	OSB (2)	OKNORAU (3)	TBAC (4)	OTBAC (5)	TBAW (6)	OTBAW (7)
glass-0-1-6-vs-2	0.161 ± 0.334	0.289 ± 0.172	0.271 ± 0.142	0.228 ± 0.069	0.199 ± 0.055	0.191 ± 0.055	0.198 ± 0.064
ecoli-0-3-4-7-vs-5-6	0.944 ± 0.091	0.747 ± 0.149	0.710 ± 0.148	0.837 ± 0.145	0.815 ± 0.140	$0.758 \stackrel{1}{\pm} 0.144$	$0.783 \stackrel{1}{\pm} 0.149$
shuttle-c2-vs-c4	0.200 ± 0.400	$1.000 \stackrel{3}{\pm} 0.000$	1.000 ± 0.000	0.740 ± 0.438	0.860 ± 0.346	0.740 ± 0.438	0.860 ± 0.346
glass-0-1-4-6-vs-2	0.133 ± 0.310	0.277 ± 0.118	0.272 ± 0.132	$0.217 \stackrel{1}{\pm} 0.074$	$0.198 \stackrel{1}{\pm} 0.066$	$0.179 \stackrel{1}{\pm} 0.063$	$0.193 \stackrel{1}{\pm} 0.054$
yeast-1-2-8-9- vs -7	0.070 ± 0.223	0.209 ± 0.115	0.200 ± 0.099	0.113 ± 0.051	0.109 ± 0.078	$0.100 \stackrel{1}{\pm} 0.037$	$0.109 \overset{1,6}{\pm} 0.040$
ecoli-0-1-4-6-vs-5	0.960 ± 0.100	0.883 ± 0.135	0.840 ± 0.136	0.867 ± 0.145	0.837 ± 0.141	0.859 ± 0.143	0.841 ± 0.139
$glass\hbox{-}0\hbox{-}1\hbox{-}6\hbox{-}vs\hbox{-}5$	0.373 ± 0.371	$0.529 \stackrel{3}{\pm} 0.267$	0.530 ± 0.275	0.471 ± 0.253	0.448 ± 0.251	0.487 ± 0.244	0.457 ± 0.249
yeast-2- vs -4	0.922 ± 0.095	0.767 ± 0.111	0.753 ± 0.118	0.863 ± 0.101	0.850 ± 0.103	$0.810 \stackrel{5,7}{\pm} 0.131$	0.811 ± 0.135
glass-0-6-vs-5	$0.600 \stackrel{all}{\pm} 0.469$	0.768 ± 0.304	0.782 ± 0.266	0.748 ± 0.378	0.678 ± 0.397	$0.805 \overset{2,3}{\pm} 0.317$	0.715 ± 0.359
ecoli-0-3-4-6- vs -5	0.946 ± 0.119	$0.880 \stackrel{1}{\pm} 0.146$	0.839 ± 0.156	0.752 ± 0.167	0.746 ± 0.174	0.763 ± 0.177	0.742 ± 0.177
yeast - 0 - 3 - 5 - 9 - vs - 7 - 8	0.605 ± 0.176	0.326 ± 0.070	0.310 ± 0.069	0.556 ± 0.181	0.516 ± 0.183	0.480 ± 0.180	0.506 ± 0.192
$glass\hbox{-}0\hbox{-}1\hbox{-}5\hbox{-}vs\hbox{-}2$	0.186 ± 0.333	$0.281 \stackrel{3}{\pm} 0.175$	0.260 ± 0.132	0.219 ± 0.080	0.204 ± 0.072	0.180 ± 0.066	$0.197 \overset{2,3}{\pm} 0.059$
ecoli-0-6-7-vs-5	0.953 ± 0.114	0.723 ± 0.193	0.696 ± 0.187	0.838 ± 0.191	0.815 ± 0.188	0.800 ± 0.193	0.768 ± 0.197
ecoli-0-2-3-4-vs-5	$0.960 \stackrel{all}{\pm} 0.092$	0.835 ± 0.176	0.801 ± 0.182	0.846 ± 0.177	0.825 ± 0.174	0.837 ± 0.180	0.831 ± 0.180
ecoli4	0.973 ± 0.073	$0.810 \stackrel{3}{\pm} 0.180$	0.791 ± 0.178	0.905 ± 0.132	0.876 ± 0.151	0.864 ± 0.167	0.818 ± 0.183
yeast5	0.794 ± 0.140	0.591 ± 0.089	0.576 ± 0.089	0.602 ± 0.100	0.575 ± 0.085	0.543 ± 0.088	0.569 ± 0.092
ecoli-0-4-6-vs-5	0.935 ± 0.135	0.873 ± 0.169	0.866 ± 0.165	0.780 ± 0.176	0.766 ± 0.179	0.780 ± 0.183	0.766 ± 0.186
led7 digit - 0 - 2 - 4 - 5 - 6 - 7 - 8 - 9 - vs - 1	0.782 ± 0.304	0.559 ± 0.098	0.569 ± 0.124	0.544 ± 0.310	0.504 ± 0.261	0.698 ± 0.122	0.602 ± 0.163
ecoli-0-1- vs -5	0.972 ± 0.076	0.904 ± 0.124	$0.871 \stackrel{2}{\pm} 0.140$	0.965 ± 0.090	0.960 ± 0.094	0.954 ± 0.101	0.948 ± 0.109
ecoli - 0 - 2 - 6 - 7 - vs - 3 - 5	0.933 ± 0.175	0.751 ± 0.190	0.708 ± 0.195	0.808 ± 0.198	0.802 ± 0.200	0.726 ± 0.212	0.723 ± 0.226
ecoli - 0 - 1 - 4 - 7 - vs - 2 - 3 - 5 - 6	0.979 ± 0.065	0.681 ± 0.163	0.666 ± 0.155	0.914 ± 0.116	0.893 ± 0.135	0.822 ± 0.141	0.828 ± 0.171
shuttle-c0-vs-c4	1.000 ± 0.000	1.000 ± 0.000	1.000 ± 0.000	$^{2,3,6,7}_{1.000 \pm 0.000}$	$2,3,6,7$ 1.000 ± 0.000	1.000 ± 0.000	1.000 ± 0.000
ecoli-0- 6 - 7 - vs - 3 - 5	0.907 ± 0.169	0.738 ± 0.204	0.697 ± 0.198	0.811 ± 0.202	0.810 ± 0.201	0.743 ± 0.213	0.775 ± 0.202
vowel0	0.989 ± 0.027	0.979 ± 0.038	0.981 ± 0.036	0.840 ± 0.110	0.867 ± 0.090	0.889 ± 0.077	0.933 ± 0.074
glass4	0.728 ± 0.384	0.640 ± 0.271	0.632 ± 0.267	0.516 ± 0.276	$0.511 \stackrel{4}{\pm} 0.271$	0.514 ± 0.285	0.521 ± 0.277
yeast - 0 - 5 - 6 - 7 - 9 - vs - 4	0.647 ± 0.237	0.488 ± 0.106	$4,5,6,7$ 0.475 ± 0.097	0.511 ± 0.109	0.487 ± 0.126	0.367 ± 0.065	0.424 ± 0.120
yeast - 0 - 2 - 5 - 6 - vs - 3 - 7 - 8 - 9	0.779 ± 0.092	0.475 ± 0.061	0.450 ± 0.060	0.721 ± 0.088	0.689 ± 0.102	0.673 ± 0.136	0.721 ± 0.107
ecoli- 0 - 1 - vs - 2 - 3 - 5	0.968 ± 0.081	0.749 ± 0.164	0.732 ± 0.171	0.947 ± 0.114	0.943 ± 0.115	0.921 ± 0.129	0.887 ± 0.164
ecoli-0-3-4- vs -5	0.958 ± 0.111	0.874 ± 0.160	0.830 ± 0.165	0.830 ± 0.164	0.821 ± 0.172	0.820 ± 0.168	0.804 ± 0.180
glass5	0.377 ± 0.406	0.478 ± 0.309	0.476 ± 0.309	0.365 ± 0.242	0.344 ± 0.209	0.336 ± 0.191	0.358 ± 0.229
yeast4	0.358 ± 0.276	0.329 ± 0.098	0.308 ± 0.085	0.304 ± 0.080	0.316 ± 0.088	0.239 ± 0.053	0.244 ± 0.054
glass-0-4-vs-5	0.660 ± 0.473	$3,4,6,7$ 0.853 ± 0.204 $1,4,5,6,7$	$ \begin{array}{c} 6,7 \\ 0.850 \pm 0.200 \\ 1,4,5,6,7 \end{array} $	0.646 ± 0.320	0.668 ± 0.331	0.652 ± 0.304	0.660 ± 0.336
yeast6	0.626 ± 0.178	0.383 ± 0.117 $6,7$	0.376 ± 0.117 $6,7$	0.434 ± 0.109 $2,3,5,6,7$	0.400 ± 0.106	0.343 ± 0.099	0.341 ± 0.113
page-blocks-1-3-vs-4	0.686 ± 0.174	0.584 ± 0.111	0.595 ± 0.121	0.542 ± 0.204	0.657 ± 0.214	0.637 ± 0.204	0.757 ± 0.206
yeast-1-vs-7	0.330 ± 0.464	0.261 ± 0.137	0.256 ± 0.124	0.158 ± 0.063	0.171 ± 0.095	0.146 ± 0.055	0.148 ± 0.058
ecoli- 0 - 1 - 3 - 7 - vs - 2 - 6	0.790 ± 0.401	0.504 ± 0.356	$0.536 \pm 0.376 \\ 6$	0.679 ± 0.417	0.569 ± 0.391	0.363 ± 0.308	0.505 ± 0.376
yeast-1-4-5-8- vs -7	0.007 ± 0.046	0.133 ± 0.094	0.132 ± 0.093	0.087 ± 0.042	0.081 ± 0.034	0.089 ± 0.042	0.085 ± 0.033
ecoli-0-1-4-7-vs-5-6	0.967 ± 0.091	0.769 ± 0.163	0.743 ± 0.162	0.895 ± 0.120	0.885 ± 0.135	0.809 ± 0.146	0.834 ± 0.156
yeast-2-vs-8	0.908 ± 0.200	0.576 ± 0.247	0.526 ± 0.217	0.908 ± 0.200	0.911 ± 0.190	0.898 ± 0.207	0.874 ± 0.214
yeast - 0 - 2 - 5 - 7 - 9 - vs - 3 - 6 - 8	0.871 ± 0.068	0.686 ± 0.065	0.663 ± 0.064	0.840 ± 0.063 $2,3$	0.829 ± 0.067 2,3	0.836 ± 0.071	0.831 ± 0.076 $2,3$
glass2	$\begin{array}{c c} & all \\ 0.260 \pm 0.387 \\ & - \end{array}$	$0.290 \pm 0.147 \\ 3,4,5,6,7$	$0.280 \pm 0.132 4,5,6,7$	$0.221 \pm 0.083 \\ 5,6,7$	$\begin{array}{c} 2.3 \\ 0.211 \pm 0.075 \\ 6 \end{array}$	0.186 ± 0.053	0.204 ± 0.061 6

Table 5: Results for Precision metric

	kNN (1)	OSB (2)	OKNORAU (3)	TBAC (4)	OTBAC (5)	TBAW (6)	OTBAW (7)
Mean rank	5.549	4.378	3.524	4.585	3.744	3.037	3.183
	3,4,5,6,7	3,6,7	_	3,5,6,7	_	_	_

Table 6: Results for mean ranks according to Precision metric

Dataset	kNN (1)	OSB (2)	OKNORAU (3)	TBAC (4)	OTBAC (5)	TBAW (6)	OTBAW (7)
glass-0-1-6-vs-2	0.065 ± 0.123	0.513 ± 0.242	0.497 ± 0.251	0.802 ± 0.191	0.815 ± 0.193	0.827 ± 0.194	0.827 ± 0.194
ecoli - 0 - 3 - 4 - 7 - vs - 5 - 6	0.744 ± 0.196	0.836 ± 0.148	0.840 ± 0.149	0.776 ± 0.147	0.776 ± 0.153	0.832 ± 0.151	0.792 ± 0.149
shuttle-c2-vs-c4	0.170 ± 0.355	0.990 ± 0.069	0.990 ± 0.069	0.710 ± 0.436	0.820 ± 0.357	0.720 ± 0.437	0.840 ± 0.352
$glass\hbox{-} 0\hbox{-} 1\hbox{-} 4\hbox{-} 6\hbox{-} vs\hbox{-} 2$	0.055 ± 0.122	0.545 ± 0.231	0.525 ± 0.252	0.760 ± 0.215	0.772 ± 0.210	$0.782 \stackrel{1}{\pm} 0.208$	0.780 ± 0.189
yeast-1-2-8-9- vs -7	0.017 ± 0.049	0.320 ± 0.172	0.347 ± 0.172	0.400 ± 0.185	0.400 ± 0.208	0.497 ± 0.164	0.503 ± 0.171
ecoli-0-1-4-6- vs -5	0.775 ± 0.182	0.850 ± 0.150	0.850 ± 0.150	0.815 ± 0.164	0.820 ± 0.158	0.820 ± 0.158	0.825 ± 0.160
$glass\hbox{-} 0\hbox{-} 1\hbox{-} 6\hbox{-} vs\hbox{-} 5$	0.360 ± 0.316	$0.810 \stackrel{1}{\pm} 0.298$	$0.800 \stackrel{1}{\pm} 0.300$	0.740 ± 0.320	$0.730 \stackrel{1}{\pm} 0.319$	$0.740 \stackrel{1}{\pm} 0.303$	$0.750 \stackrel{1}{\pm} 0.304$
yeast-2-vs-4	0.647 ± 0.132	0.782 ± 0.129	$0.789 \stackrel{1}{\pm} 0.126$	0.691 ± 0.126	$0.707 \stackrel{1}{\pm} 0.131$	$0.707 \stackrel{1}{\pm} 0.138$	$0.729 \stackrel{1}{\pm} 0.130$
glass-0-6-vs-5	0.440 ± 0.382	0.870 ± 0.279	0.890 ± 0.229	0.630 ± 0.357	0.620 ± 0.368	0.680 ± 0.312	0.660 ± 0.338
ecoli-0-3-4-6-vs-5	0.795 ± 0.185	0.850 ± 0.173	0.850 ± 0.173	0.825 ± 0.167	0.835 ± 0.170	0.820 ± 0.173	0.820 ± 0.173
yeast - 0 - 3 - 5 - 9 - vs - 7 - 8	0.306 ± 0.115	$0.540 \stackrel{1}{\pm} 0.121$	$0.550 \stackrel{1}{\pm} 0.118$	0.338 ± 0.141	$0.338 \stackrel{-}{\pm} 0.121$	0.386 ± 0.142	0.356 ± 0.123
$glass\hbox{-} 0\hbox{-} 1\hbox{-} 5\hbox{-} vs\hbox{-} 2$	0.090 ± 0.139	0.513 ± 0.286	0.515 ± 0.288	$0.745 \stackrel{1}{\pm} 0.266$	$0.798 \stackrel{1}{\pm} 0.221$	0.768 ± 0.247	$0.805 \stackrel{1}{\pm} 0.222$
ecoli-0-6-7-vs-5	0.685 ± 0.216	$0.780 \stackrel{1}{\pm} 0.197$	0.790 ± 0.195	0.755 ± 0.196	0.750 ± 0.193	0.760 ± 0.193	0.770 ± 0.205
ecoli-0-2-3-4- vs -5	0.785 ± 0.165	$0.850 \stackrel{1}{\pm} 0.158$	0.850 ± 0.158	$0.835 \stackrel{1}{\pm} 0.155$	0.840 ± 0.156	$0.840 \stackrel{1}{\pm} 0.156$	0.840 ± 0.156
ecoli4	0.790 ± 0.202	$0.855 \stackrel{1}{\pm} 0.200$	$0.855 \stackrel{1}{\pm} 0.200$	$0.855 \stackrel{1}{\pm} 0.180$	0.885 ± 0.159	$0.875 \stackrel{1}{\pm} 0.175$	$0.880 \stackrel{1}{\pm} 0.167$
yeast5	0.647 ± 0.127	$0.889 \stackrel{1}{\pm} 0.098$	$0.889 \stackrel{1}{\pm} 0.106$	$0.871 \stackrel{1}{\pm} 0.122$	$0.901 \stackrel{1}{\pm} 0.104$	$0.903 \stackrel{1}{\pm} 0.106$	0.882 ± 0.098
ecoli-0-4-6-vs-5	0.810 ± 0.162	$0.850 \stackrel{1}{\pm} 0.158$	0.850 ± 0.158	$0.835 \stackrel{1}{\pm} 0.155$	0.845 ± 0.157	0.835 ± 0.162	0.845 ± 0.157
$led7digit\hbox{-}0\hbox{-}2\hbox{-}4\hbox{-}5\hbox{-}6\hbox{-}7\hbox{-}8\hbox{-}9\hbox{-}vs\hbox{-}1$	0.279 ± 0.155	0.863 ± 0.140	0.816 ± 0.173	0.250 ± 0.161	0.339 ± 0.170	0.805 ± 0.152	0.799 ± 0.243
ecoli-0-1- vs -5	0.785 ± 0.180	0.850 ± 0.150	0.850 ± 0.150	0.810 ± 0.162	$0.820 \overset{1,4}{\pm} 0.150$	0.820 ± 0.158	0.830 ± 0.145
ecoli - 0 - 2 - 6 - 7 - vs - 3 - 5	0.597 ± 0.251	$0.746 \stackrel{1}{\pm} 0.180$	$0.788 \stackrel{1}{\pm} 0.170$	0.680 ± 0.210	0.691 ± 0.199	0.718 ± 0.191	0.714 ± 0.182
ecoli-0-1-4-7-vs-2-3-5-6	0.668 ± 0.202	0.733 ± 0.167	0.741 ± 0.168	$0.730 \stackrel{1}{\pm} 0.164$	$0.727 \stackrel{1}{\pm} 0.163$	$0.729 \stackrel{1}{\pm} 0.161$	0.734 ± 0.154
shuttle-c0-vs-c4	0.992 ± 0.016	$0.992 \stackrel{1}{\pm} 0.016$	0.992 ± 0.016	$0.990 \stackrel{1}{\pm} 0.017$	$0.990 \stackrel{1}{\pm} 0.017$	$0.990 \stackrel{1}{\pm} 0.017$	$0.990 \stackrel{1}{\pm} 0.017$
ecoli-0-6-7-vs-3-5	0.593 ± 0.237	0.724 ± 0.205	0.765 ± 0.203	0.672 ± 0.201	0.678 ± 0.204	0.690 ± 0.203	0.695 ± 0.193
vowel0	0.941 ± 0.077	1.000 ± 0.000	$1.000 \stackrel{all}{\pm} 0.000$	$0.621 \stackrel{1}{\pm} 0.137$	$0.803 \stackrel{1}{\pm} 0.125$	$0.876 \stackrel{1}{\pm} 0.103$	0.814 ± 0.117
glass4	0.513 ± 0.310	0.857 ± 0.278	0.857 ± 0.278	0.620 ± 0.272	$0.660 \stackrel{4}{\pm} 0.294$	0.627 ± 0.293	0.663 ± 0.299
yeast - 0 - 5 - 6 - 7 - 9 - vs - 4	0.317 ± 0.153	0.693 ± 0.123	0.695 ± 0.123	$0.642 \stackrel{1}{\pm} 0.115$	0.661 ± 0.107	$0.746 \stackrel{1}{\pm} 0.120$	0.722 ± 0.125
yeast - 0 - 2 - 5 - 6 - vs - 3 - 7 - 8 - 9	0.529 ± 0.083	0.673 ± 0.093	0.671 ± 0.091	$0.555 \stackrel{1}{\pm} 0.106$	0.582 ± 0.108	0.554 ± 0.111	0.544 ± 0.112
ecoli-0-1-vs-2-3-5	0.670 ± 0.187	0.791 ± 0.188	0.791 ± 0.184	$0.715 \stackrel{1}{\pm} 0.179$	0.723 ± 0.173	$0.723 \stackrel{1}{\pm} 0.173$	0.722 ± 0.173
ecoli-0-3-4-vs-5	0.810 ± 0.209	0.850 ± 0.200	0.850 ± 0.200	$0.845 \stackrel{1}{\pm} 0.205$	$0.845 \stackrel{1}{\pm} 0.205$	$0.840 \stackrel{1}{\pm} 0.204$	$0.835 \stackrel{1}{\pm} 0.215$
glass5	0.310 ± 0.330	0.670 ± 0.395	0.690 ± 0.398	0.690 ± 0.359	0.740 ± 0.363	0.720 ± 0.348	0.740 ± 0.363
yeast4	0.117 ± 0.088	0.484 ± 0.146	0.497 ± 0.156	0.540 ± 0.143	0.542 ± 0.146	0.636 ± 0.163	0.638 ± 0.149
glass-0-4-vs-5	$0.490 \stackrel{-}{\pm} 0.406$	$0.970 \stackrel{1}{\pm} 0.118$	$0.990 \stackrel{1}{\pm} 0.069$	0.730 ± 0.319	0.770 ± 0.319	0.780 ± 0.302	0.720 ± 0.318
yeast6	0.523 ± 0.184	0.649 ± 0.196	0.654 ± 0.198	$0.700 \stackrel{1}{\pm} 0.178$	$0.717 \stackrel{1}{\pm} 0.165$	$0.746 \stackrel{1}{\pm} 0.169$	$0.760 \stackrel{1}{\pm} 0.157$
page-blocks-1-3-vs-4	0.657 ± 0.217	$0.901 \stackrel{1}{\pm} 0.144$	0.901 ± 0.144	0.541 ± 0.207	0.607 ± 0.208	0.658 ± 0.232	0.636 ± 0.203
yeast-1-vs-7	0.060 ± 0.086	0.373 ± 0.195	0.413 ± 0.208	0.447 ± 0.183	0.390 ± 0.212	0.537 ± 0.219	$0.500 \stackrel{4}{\pm} 0.223$
ecoli-0-1-3-7-vs-2-6	0.700 ± 0.400	$0.700 \stackrel{1}{\pm} 0.400$	$0.700 \overset{1,2}{\pm} 0.400$	0.700 ± 0.400	$0.700 \stackrel{1}{\pm} 0.400$	0.700 ± 0.400	0.700 ± 0.400
yeast-1-4-5-8-vs-7	0.003 ± 0.023	0.230 ± 0.159	0.253 ± 0.173	0.373 ± 0.171	0.390 ± 0.193	0.467 ± 0.197	0.467 ± 0.185
ecoli-0-1-4-7-vs-5-6	0.732 ± 0.198	$0.840 \stackrel{1}{\pm} 0.144$	0.844 ± 0.140	0.796 ± 0.157	0.788 ± 0.166	0.812 ± 0.146	0.804 ± 0.162
yeast-2-vs-8	0.550 ± 0.229	0.590 ± 0.248	0.610 ± 0.230	$0.550 \stackrel{1}{\pm} 0.229$	0.555 ± 0.219	$0.550 \stackrel{1}{\pm} 0.229$	$0.555 \stackrel{1}{\pm} 0.219$
yeast - 0 - 2 - 5 - 7 - 9 - vs - 3 - 6 - 8	0.797 ± 0.084	0.835 ± 0.081	0.834 ± 0.084	0.812 ± 0.078	0.821 ± 0.076	0.809 ± 0.083	0.814 ± 0.076
glass2	0.117 ± 0.164	0.537 ± 0.265	0.528 ± 0.227	$0.757 \stackrel{1}{\pm} 0.193$	0.778 ± 0.191	$0.808 \stackrel{1}{\pm} 0.174$	$0.775 \stackrel{1}{\pm} 0.200$
	_	1	1	1,2,3	1,2,3	1,2,3,4	1,2,3

Table 7: Results for Recall metric

	kNN (1)	OSB (2)	OKNORAU (3)	TBAC (4)	OTBAC (5)	TBAW (6)	OTBAW (7)
Mean rank	1.415	5.098	5.451	2.915	3.951	4.524	4.646
	_	1,4,5	1,2,4,5	1	1,4	1,4	1,4,5

Table 8: Results for mean ranks according to Recall metric

Dataset	kNN (1)	OSB (2)	OKNORAU (3)	TBAC (4)	OTBAC (5)	TBAW (6)	OTBAW (7)
glass-0-1-6-vs-2	0.522 ± 0.062	0.686 ± 0.128	0.679 ± 0.126	0.763 ± 0.092	0.745 ± 0.090	0.739 ± 0.094	0.747 ± 0.096
ecoli-0-3-4-7-vs-5-6	0.869 ± 0.097	$0.900 \stackrel{1}{\pm} 0.071$	0.898 ± 0.071	0.879 ± 0.074	0.878 ± 0.078	0.900 ± 0.077	0.883 ± 0.077
shuttle-c2-vs-c4	0.585 ± 0.177	$0.995 \stackrel{3}{\pm} 0.034$	0.995 ± 0.034	0.855 ± 0.218	$0.910 \stackrel{-}{\pm} 0.178$	0.860 ± 0.218	0.920 ± 0.176
$glass\hbox{-}0\hbox{-}1\hbox{-}4\hbox{-}6\hbox{-}vs\hbox{-}2$	0.518 ± 0.062	0.707 ± 0.110	0.699 ± 0.122	$0.750 \stackrel{1}{\pm} 0.113$	$0.740 \stackrel{1}{\pm} 0.106$	$0.721 \stackrel{1}{\pm} 0.106$	$0.738 \stackrel{1}{\pm} 0.098$
yeast-1-2-8-9-vs-7	0.508 ± 0.024	$0.640 \stackrel{1}{\pm} 0.086$	0.650 ± 0.087	0.649 ± 0.091	0.643 ± 0.095	$0.674 \stackrel{1}{\pm} 0.084$	0.682 ± 0.087
ecoli- 0 - 1 - 4 - 6 - vs - 5	0.886 ± 0.091	$0.920 \stackrel{1}{\pm} 0.075$	0.918 ± 0.074	$0.901 \stackrel{1}{\pm} 0.080$	$0.903 \stackrel{1}{\pm} 0.077$	0.904 ± 0.078	0.905 ± 0.078
$glass\hbox{-} 0\hbox{-} 1\hbox{-} 6\hbox{-} vs\hbox{-} 5$	0.668 ± 0.151	0.884 ± 0.147	0.879 ± 0.150	0.845 ± 0.160	0.838 ± 0.160	0.846 ± 0.153	0.847 ± 0.154
yeast-2-vs-4	0.820 ± 0.066	0.877 ± 0.063	0.879 ± 0.061	$0.839 \stackrel{1}{\pm} 0.063$	$0.846 \stackrel{1}{\pm} 0.065$	$0.843 \stackrel{1}{\pm} 0.068$	0.853 ± 0.063
$glass\hbox{-} 0\hbox{-} 6\hbox{-} vs\hbox{-} 5$	0.714 ± 0.194	0.920 ± 0.139	0.930 ± 0.113	0.805 ± 0.181	0.796 ± 0.187	$0.830 \stackrel{1}{\pm} 0.155$	0.816 ± 0.170
ecoli- 0 - 3 - 4 - 6 - vs - 5	0.895 ± 0.094	0.917 ± 0.087	0.914 ± 0.087	$0.896 \stackrel{1}{\pm} 0.088$	$0.900 \stackrel{1}{\pm} 0.090$	0.895 ± 0.092	0.893 ± 0.092
yeast - 0 - 3 - 5 - 9 - vs - 7 - 8	0.641 ± 0.058	0.707 ± 0.060	0.706 ± 0.059	$0.652 \stackrel{1}{\pm} 0.067$	$0.650 \stackrel{1}{\pm} 0.061$	0.666 ± 0.066	0.655 ± 0.057
$glass\hbox{-} 0\hbox{-} 1\hbox{-} 5\hbox{-} vs\hbox{-} 2$	0.533 ± 0.066	0.682 ± 0.145	0.681 ± 0.142	0.728 ± 0.131	0.727 ± 0.108	$0.690 \stackrel{1}{\pm} 0.126$	0.723 ± 0.105
ecoli-0-6-7-vs-5	0.840 ± 0.108	$0.872 \stackrel{1}{\pm} 0.098$	0.874 ± 0.096	0.869 ± 0.102	0.865 ± 0.100	$0.869 \stackrel{1}{\pm} 0.099$	0.871 ± 0.107
ecoli- 0 - 2 - 3 - 4 - vs - 5	0.890 ± 0.083	0.913 ± 0.080	0.910 ± 0.079	0.907 ± 0.080	0.908 ± 0.080	0.908 ± 0.080	0.908 ± 0.080
ecoli4	0.894 ± 0.100	$0.919 \stackrel{3}{\pm} 0.097$	$0.918 \stackrel{-}{\pm} 0.097$	0.924 ± 0.091	0.938 ± 0.081	0.932 ± 0.088	0.932 ± 0.082
yeast5	0.821 ± 0.064	0.935 ± 0.049	0.934 ± 0.053	0.926 ± 0.061	0.940 ± 0.052	0.940 ± 0.053	$0.930 \stackrel{3}{\pm} 0.049$
ecoli-0-4-6-vs-5	0.901 ± 0.084	0.916 ± 0.082	0.916 ± 0.081	$0.902 \stackrel{1}{\pm} 0.080$	0.906 ± 0.083	$0.902 \stackrel{1}{\pm} 0.085$	0.906 ± 0.083
led7digit-0-2-4-5-6-7-8-9-vs-1	0.635 ± 0.077	0.899 ± 0.069	0.878 ± 0.086	$0.615 \stackrel{1}{\pm} 0.080$	0.653 ± 0.087	$0.885 \stackrel{1}{\pm} 0.073$	0.874 ± 0.119
ecoli-0-1- vs -5	$0.891 \stackrel{4}{\pm} 0.089$	0.920 ± 0.074	0.918 ± 0.074	0.903 ± 0.081	$0.908 \stackrel{4}{\pm} 0.075$	0.908 ± 0.079	0.912 ± 0.072
ecoli-0-2-6-7-vs-3-5	0.797 ± 0.125	0.856 ± 0.087	$0.872 \stackrel{-}{\pm} 0.081$	0.831 ± 0.109	0.835 ± 0.103	0.842 ± 0.100	0.839 ± 0.099
ecoli-0-1-4-7-vs-2-3-5-6	0.833 ± 0.100	$0.848 \stackrel{1}{\pm} 0.082$	0.850 ± 0.081	0.861 ± 0.081	0.858 ± 0.081	$0.856 \stackrel{1}{\pm} 0.081$	0.858 ± 0.077
shuttle-c0-vs-c4	0.996 ± 0.008	0.996 ± 0.008	0.996 ± 0.008	0.995 ± 0.008	0.995 ± 0.008	0.995 ± 0.008	0.995 ± 0.008
ecoli-0-6-7-vs-3-5	0.792 ± 0.119	0.845 ± 0.104	0.861 ± 0.102	0.826 ± 0.104	0.829 ± 0.105	0.830 ± 0.106	0.834 ± 0.100
vowel0	0.970 ± 0.038	0.999 ± 0.002	$0.999 \stackrel{1}{\pm} 0.002$	0.804 ± 0.068	$0.895 \stackrel{-}{\pm} 0.062$	0.932 ± 0.052	0.904 ± 0.058
glass4	0.750 ± 0.158	0.909 ± 0.143	0.909 ± 0.143	0.786 ± 0.141	$0.805 \stackrel{4}{\pm} 0.152$	0.789 ± 0.150	0.808 ± 0.154
yeast - 0 - 5 - 6 - 7 - 9 - vs - 4	0.649 ± 0.074	0.805 ± 0.060	0.804 ± 0.059	0.785 ± 0.054	0.789 ± 0.050	0.801 ± 0.050	0.801 ± 0.059
yeast - 0 - 2 - 5 - 6 - vs - 3 - 7 - 8 - 9	0.756 ± 0.042	0.795 ± 0.046	0.790 ± 0.045	$0.765 \stackrel{1}{\pm} 0.052$	$0.776 \stackrel{1}{\pm} 0.053$	0.760 ± 0.053	0.760 ± 0.054
ecoli- 0 - 1 - vs - 2 - 3 - 5	0.833 ± 0.093	0.879 ± 0.093	0.877 ± 0.091	0.855 ± 0.090	0.859 ± 0.087	0.858 ± 0.087	0.855 ± 0.088
ecoli-0-3-4-vs-5	0.903 ± 0.105	0.916 ± 0.100	0.913 ± 0.098	0.912 ± 0.104	0.911 ± 0.104	0.909 ± 0.104	0.905 ± 0.110
glass5	0.648 ± 0.165	0.820 ± 0.198	0.829 ± 0.199	0.815 ± 0.180	0.837 ± 0.180	0.827 ± 0.175	0.838 ± 0.181
yeast4	0.555 ± 0.043	0.724 ± 0.072	0.728 ± 0.076	$0.747 \stackrel{1}{\pm} 0.071$	0.749 ± 0.071	0.782 ± 0.079	0.783 ± 0.072
$glass\hbox{-} 0\hbox{-} 4\hbox{-} vs\hbox{-} 5$	0.744 ± 0.204	$0.971 \stackrel{1}{\pm} 0.064$	$0.981 \stackrel{1}{\pm} 0.045$	0.838 ± 0.156	0.856 ± 0.159	0.860 ± 0.147	0.832 ± 0.159
yeast6	0.757 ± 0.091	0.811 ± 0.097	0.813 ± 0.098	0.839 ± 0.088	0.845 ± 0.082	0.854 ± 0.082	0.860 ± 0.076
page-blocks-1-3-vs-4	0.818 ± 0.106	0.929 ± 0.073	$0.930 \stackrel{1}{\pm} 0.072$	0.756 ± 0.102	0.792 ± 0.105	0.816 ± 0.114	0.810 ± 0.102
yeast-1-vs-7	0.529 ± 0.043	0.646 ± 0.099	0.661 ± 0.105	0.637 ± 0.092	$0.622 \stackrel{4}{\pm} 0.098$	$0.656 \stackrel{4}{\pm} 0.104$	$0.649 \overset{4,5}{\pm} 0.104$
ecoli-0-1-3-7-vs-2-6	0.850 ± 0.200	$0.840 \stackrel{1}{\pm} 0.197$	0.841 ± 0.197	$0.842 \stackrel{1}{\pm} 0.208$	$0.837 \stackrel{1}{\pm} 0.206$	0.827 ± 0.199	0.835 ± 0.202
yeast-1-4-5-8- vs -7	0.501 ± 0.010	0.580 ± 0.079	0.588 ± 0.086	0.596 ± 0.086	0.594 ± 0.091	0.623 ± 0.102	0.618 ± 0.093
ecoli-0-1-4-7-vs-5-6	0.865 ± 0.098	$0.907 \stackrel{1}{\pm} 0.070$	$0.908 \stackrel{1}{\pm} 0.067$	$0.894 \stackrel{1}{\pm} 0.078$	$0.889 \stackrel{1}{\pm} 0.083$	0.897 ± 0.073	0.894 ± 0.082
yeast-2-vs-8	0.774 ± 0.114	$0.784 \stackrel{-}{\pm} 0.122$	$0.790 \stackrel{2}{\pm} 0.112$	0.773 ± 0.116	0.776 ± 0.111	$0.773 \stackrel{4}{\pm} 0.116$	0.775 ± 0.111
yeast-0-2-5-7-9-vs-3-6-8	0.892 ± 0.042	0.896 ± 0.039	0.894 ± 0.041	0.897 ± 0.039	0.901 ± 0.038	0.896 ± 0.041	0.898 ± 0.037
glass2	0.547 ± 0.083	$0.710 \stackrel{3}{\pm} 0.131$	0.703 ± 0.111	0.755 ± 0.106	0.757 ± 0.103	0.746 ± 0.093	0.753 ± 0.102
	<u> </u>	1	1	1,2,3,6,7	1,2,3,4,6	1,2,3	1,2,3,6

Table 9: Results for AUC metric

	kNN (1)	OSB (2)	OKNORAU (3)	TBAC (4)	OTBAC (5)	TBAW (6)	OTBAW (7)
Mean rank	1.585	5.256	5.232	3.402	4.037	4.134	4.354
	_	1,4,5,6	1,4,5,6	1	1,4	1,4	1,4

Table 10: Results for mean ranks according to AUC metric

Dataset	kNN (1)	OSB (2)	OKNORAU (3)	TBAC (4)	OTBAC (5)	TBAW (6)	OTBAW (7)
glass-0-1-6-vs-2	0.118 ± 0.222	0.637 ± 0.192	0.618 ± 0.208	0.753 ± 0.095	0.733 ± 0.092	0.724 ± 0.094	0.734 ± 0.097
ecoli - 0 - 3 - 4 - 7 - vs - 5 - 6	0.852 ± 0.116	0.894 ± 0.079	0.892 ± 0.078	0.869 ± 0.085	0.867 ± 0.088	0.894 ± 0.085	0.874 ± 0.085
shuttle-c2-vs-c4	0.182 ± 0.369	$0.994 \stackrel{3}{\pm} 0.041$	0.994 ± 0.041	0.722 ± 0.433	0.837 ± 0.346	0.728 ± 0.435	0.848 ± 0.347
$glass\hbox{-}0\hbox{-}1\hbox{-}4\hbox{-}6\hbox{-}vs\hbox{-}2$	0.098 ± 0.210	0.660 ± 0.183	0.636 ± 0.225	$0.739 \stackrel{1}{\pm} 0.120$	$0.724 \stackrel{1}{\pm} 0.141$	$0.709 \stackrel{1}{\pm} 0.107$	$0.729 \stackrel{1}{\pm} 0.099$
yeast-1-2-8-9-vs-7	0.041 ± 0.122	$0.515 \stackrel{1}{\pm} 0.205$	0.545 ± 0.183	0.573 ± 0.173	0.550 ± 0.217	0.640 ± 0.116	0.647 ± 0.119
ecoli-0-1-4-6-vs-5	0.873 ± 0.105	0.913 ± 0.083	0.911 ± 0.082	0.892 ± 0.092	0.894 ± 0.088	0.895 ± 0.088	0.897 ± 0.089
$glass\hbox{-} 0\hbox{-} 1\hbox{-} 6\hbox{-} vs\hbox{-} 5$	0.459 ± 0.368	0.844 ± 0.247	0.839 ± 0.248	0.794 ± 0.269	0.786 ± 0.268	0.803 ± 0.245	0.805 ± 0.245
yeast-2-vs-4	0.797 ± 0.083	0.868 ± 0.072	0.871 ± 0.070	$0.822 \stackrel{1}{\pm} 0.076$	$0.831 \stackrel{1}{\pm} 0.078$	$0.828 \stackrel{1}{\pm} 0.081$	$0.840 \stackrel{1}{\pm} 0.074$
glass-0-6-vs-5	0.521 ± 0.407	0.885 ± 0.244	0.912 ± 0.171	0.711 ± 0.336	0.694 ± 0.350	0.772 ± 0.264	0.741 ± 0.305
ecoli-0-3-4-6-vs-5	0.883 ± 0.108	0.910 ± 0.098	0.907 ± 0.098	$0.889 \stackrel{1}{\pm} 0.098$	0.893 ± 0.100	0.886 ± 0.102	0.885 ± 0.103
yeast-0-3-5-9-vs-7-8	0.533 ± 0.123	0.682 ± 0.080	0.684 ± 0.078	$0.554 \stackrel{1}{\pm} 0.136$	$0.556 \stackrel{1}{\pm} 0.125$	$0.588 \stackrel{1}{\pm} 0.133$	$0.569 \stackrel{1}{\pm} 0.119$
$glass\hbox{-} 0\hbox{-} 1\hbox{-} 5\hbox{-} vs\hbox{-} 2$	0.161 ± 0.246	0.612 ± 0.248	$0.610 \stackrel{all}{\pm} 0.247$	0.706 ± 0.166	0.707 ± 0.140	0.666 ± 0.151	0.701 ± 0.137
ecoli-0-6-7-vs-5	0.814 ± 0.139	$0.858 \stackrel{1}{\pm} 0.116$	0.862 ± 0.114	0.854 ± 0.120	0.850 ± 0.118	0.854 ± 0.117	0.857 ± 0.125
ecoli-0-2-3-4-vs-5	0.878 ± 0.100	$0.906 \stackrel{4}{\pm} 0.089$	0.903 ± 0.088	0.900 ± 0.088	0.901 ± 0.089	0.902 ± 0.089	0.901 ± 0.088
ecoli4	0.879 ± 0.124	$0.908 \stackrel{3}{\pm} 0.116$	0.908 ± 0.116	0.916 ± 0.104	0.932 ± 0.091	0.924 ± 0.104	0.925 ± 0.094
yeast5	0.798 ± 0.083	0.932 ± 0.053	0.931 ± 0.057	0.922 ± 0.067	0.937 ± 0.056	0.937 ± 0.058	0.928 ± 0.053
ecoli-0-4-6-vs-5	0.892 ± 0.095	$0.910 \stackrel{1}{\pm} 0.091$	$0.909 \stackrel{1}{\pm} 0.090$	$0.896 \stackrel{1}{\pm} 0.088$	0.900 ± 0.091	$0.895 \stackrel{1}{\pm} 0.094$	$0.900 \stackrel{1}{\pm} 0.091$
led7digit-0-2-4-5-6-7-8-9-vs-1	0.494 ± 0.179	0.895 ± 0.075	0.870 ± 0.099	$0.450 \stackrel{1}{\pm} 0.205$	0.545 ± 0.177	0.876 ± 0.088	0.855 ± 0.162
ecoli-0-1-vs-5	0.879 ± 0.104	0.913 ± 0.083	0.912 ± 0.082	0.894 ± 0.092	$0.900 \stackrel{4}{\pm} 0.084$	0.899 ± 0.089	0.905 ± 0.081
ecoli-0-2-6-7-vs-3-5	0.747 ± 0.192	0.841 ± 0.106	0.861 ± 0.093	0.807 ± 0.136	0.813 ± 0.127	0.825 ± 0.122	0.822 ± 0.116
ecoli-0-1-4-7-vs-2-3-5-6	0.805 ± 0.133	$0.833 \stackrel{1}{\pm} 0.098$	0.836 ± 0.098	0.845 ± 0.099	0.842 ± 0.099	$0.841 \stackrel{1}{\pm} 0.098$	0.844 ± 0.093
shuttle-c0-vs-c4	0.996 ± 0.008	0.996 ± 0.008	0.996 ± 0.008	0.995 ± 0.008	0.995 ± 0.008	0.995 ± 0.008	0.995 ± 0.008
ecoli-0-6-7-vs-3-5	0.750 ± 0.159	0.826 ± 0.127	0.847 ± 0.120	0.802 ± 0.129	0.805 ± 0.130	0.809 ± 0.130	0.814 ± 0.121
vowel0	0.969 ± 0.041	0.999 ± 0.002	$0.999 \stackrel{1}{\pm} 0.002$	0.778 ± 0.091	$0.887 \stackrel{-}{\pm} 0.072$	0.929 ± 0.056	$0.897 \stackrel{-}{\pm} 0.066$
glass4	0.641 ± 0.310	0.875 ± 0.243	0.875 ± 0.243	0.735 ± 0.230	0.751 ± 0.258	0.730 ± 0.255	0.753 ± 0.260
yeast - 0 - 5 - 6 - 7 - 9 - vs - 4	0.532 ± 0.164	0.793 ± 0.071	0.793 ± 0.070	0.768 ± 0.066	0.775 ± 0.060	0.795 ± 0.057	0.793 ± 0.067
yeast - 0 - 2 - 5 - 6 - vs - 3 - 7 - 8 - 9	0.719 ± 0.058	0.784 ± 0.055	0.779 ± 0.053	$0.732 \stackrel{1}{\pm} 0.072$	$0.748 \stackrel{1}{\pm} 0.071$	0.727 ± 0.072	0.724 ± 0.073
ecoli-0-1-vs-2-3-5	0.807 ± 0.125	$0.867 \stackrel{all}{\pm} 0.111$	0.866 ± 0.108	0.836 ± 0.110	0.842 ± 0.106	0.841 ± 0.106	0.838 ± 0.106
ecoli-0-3-4-vs-5	0.888 ± 0.132	$0.905 \stackrel{1}{\pm} 0.122$	0.902 ± 0.121	0.901 ± 0.126	0.900 ± 0.126	0.898 ± 0.126	0.893 ± 0.135
glass5	0.394 ± 0.387	0.713 ± 0.376	0.723 ± 0.379	0.738 ± 0.324	0.762 ± 0.328	0.760 ± 0.308	0.763 ± 0.329
yeast4	0.288 ± 0.183	$0.674 \stackrel{1}{\pm} 0.108$	$0.681 \stackrel{1}{\pm} 0.113$	0.711 ± 0.098	0.713 ± 0.097	0.761 ± 0.100	$0.764 \stackrel{1}{\pm} 0.091$
glass-0-4-vs-5	0.560 ± 0.419	$0.969 \stackrel{1}{\pm} 0.072$	$0.981 \stackrel{1}{\pm} 0.048$	0.784 ± 0.267	0.807 ± 0.269	0.818 ± 0.243	0.779 ± 0.266
yeast6	0.707 ± 0.136	0.784 ± 0.129	0.787 ± 0.130	0.819 ± 0.115	$0.829 \stackrel{1}{\pm} 0.101$	$0.841 \stackrel{1}{\pm} 0.101$	0.849 ± 0.091
page-blocks-1-3-vs-4	0.789 ± 0.138	$0.925 \stackrel{1}{\pm} 0.081$	0.926 ± 0.081	0.700 ± 0.187	0.753 ± 0.163	0.781 ± 0.171	0.781 ± 0.131
yeast-1-vs-7	0.142 ± 0.199	0.553 ± 0.192	0.583 ± 0.187	0.594 ± 0.129	$0.545 \stackrel{4}{\pm} 0.174$	$0.628 \stackrel{4}{\pm} 0.131$	0.604 ± 0.173
ecoli-0-1-3-7-vs-2-6	0.741 ± 0.387	$0.733 \stackrel{1}{\pm} 0.382$	0.734 ± 0.383	$0.738 \stackrel{1}{\pm} 0.387$	0.734 ± 0.383	0.724 ± 0.377	$0.731^{+0.381}_{\pm 0.381}$
yeast-1-4-5-8-vs-7	0.008 ± 0.056	$0.416 \stackrel{6}{\pm} 0.200$	0.434 ± 0.211	0.530 ± 0.156	0.531 ± 0.160	0.580 ± 0.166	0.582 ± 0.142
ecoli-0-1-4-7-vs-5-6	0.844 ± 0.132	$0.901 \stackrel{1}{\pm} 0.078$	$0.902 \stackrel{1}{\pm} 0.074$	0.884 ± 0.088	0.878 ± 0.094	0.889 ± 0.081	0.885 ± 0.093
yeast-2-vs-8	0.718 ± 0.181	$0.735 \stackrel{-}{\pm} 0.187$	0.754 ± 0.151	0.718 ± 0.181	0.728 ± 0.154	$0.718 \stackrel{4}{\pm} 0.181$	0.727 ± 0.154
yeast-0-2-5-7-9-vs-3-6-8	0.885 ± 0.047	0.893 ± 0.043	0.890 ± 0.045	0.892 ± 0.043	0.896 ± 0.042	0.890 ± 0.046	0.893 ± 0.042
glass2	0.201 ± 0.271	0.651 ± 0.217	0.653 ± 0.184	0.748 ± 0.109	$0.749 \stackrel{1}{\pm} 0.105$	0.737 ± 0.092	0.744 ± 0.104
	<u> </u>	1	1	1,2,3,6,7	1,2,3,4,6	1,2,3	1,2,3,6

Table 11: Results for GMEAN metric

	kNN (1)	OSB (2)	OKNORAU (3)	TBAC (4)	OTBAC (5)	TBAW (6)	OTBAW (7)
$Mean\ rank$	1.524	5.159	5.061	3.415	4.134	4.207	4.500
	_	1,4,5,6	1,4,6	1	1,4	1,4	1,4

Table 12: Results for mean ranks according to GMEAN metric