JFOTS

No Author Given

No Institute Given

1 Results

Table 1. CART – AUC

Dataset name Sl	MOTE	polynom-fit-SMOTE	Lee	SMOBD	G-SMOTE	LVO-SMOTE	Assembled-SMOTE	SMOTE-TomekLinks	JFOTS-pr	JFOTS-rc	JFOTS-prom
abalone19 0.56		0.503 ± 0.015		0.565 ± 0.042	0.545 ± 0.052	0.537 ± 0.051	0.555 ± 0.047	0.561 ± 0.042	0.505 ± 0.019	0.540 ± 0.045	0.547 ± 0.070
abalone9 - 18 0.66	65 ± 0.059	0.609 ± 0.040	0.672 ± 0.051	0.685 ± 0.051	0.653 ± 0.033	0.684 ± 0.082	0.649 ± 0.038	0.667 ± 0.062	0.658 ± 0.041	0.561 ± 0.075	0.613 ± 0.061
$ecoli - 0 - 1 - 3 - 7_v s_2 - 6 0.79$		0.815 ± 0.063		0.790 ± 0.115			0.790 ± 0.115	0.790 ± 0.115	0.694 ± 0.110		0.713 ± 0.115
$qlass - 0 - 1 - 6_v s_2 = 0.62$		0.570 ± 0.054	0.663 ± 0.054		0.609 ± 0.057		0.633 ± 0.108	0.628 ± 0.055	0.653 ± 0.106	0.576 ± 0.043	
$glass - 0 - 1 - 6_v s_5$ 0.86		0.858 ± 0.133				0.894 ± 0.133	0.860 ± 0.133	0.860 ± 0.133	0.765 ± 0.151		0.763 ± 0.158
glass2 0.59		0.563 ± 0.077		0.610 ± 0.101			0.575 ± 0.094	0.606 ± 0.124	0.586 ± 0.076		0.616 ± 0.091
glass4 0.85		0.835 ± 0.053		0.845 ± 0.086			0.853 ± 0.090	0.854 ± 0.086		0.764 ± 0.140	
glass5 0.85		0.849 ± 0.153	0.851 ± 0.154	0.851 ± 0.154	0.862 ± 0.160	0.935 ± 0.107	0.851 ± 0.154	0.851 ± 0.154	0.836 ± 0.150		0.791 ± 0.156
$page - blocks - 1 - 3_v s_4$ 0.96		0.949 ± 0.060	0.966 ± 0.068	0.964 ± 0.068	0.972 ± 0.063		0.983 ± 0.032	0.969 ± 0.059	0.902 ± 0.062		0.924 ± 0.089
yeast - 0 - 5 - 6 - 7 - 9 - 84 - 0.69		0.680 ± 0.048	0.713 ± 0.047	0.694 ± 0.056	0.677 ± 0.039	0.712 ± 0.055	0.688 ± 0.037	0.701 ± 0.042	0.662 ± 0.046	0.496 ± 0.008	0.675 ± 0.058
ueast - 1 - 2 - 8 - 9 - 8 = 0.58	88 ± 0.028	0.578 ± 0.047	0.590 ± 0.030	0.578 ± 0.047	0.599 ± 0.051	0.647 ± 0.062	0.586 ± 0.023	0.604 ± 0.044	0.554 ± 0.057	0.511 ± 0.004	0.561 ± 0.041
yeast - 1 - 4 - 5 - 8 - 87 = 0.53		0.554 ± 0.026					0.551 ± 0.029	0.526 ± 0.048	0.506 ± 0.033	0.505 ± 0.003	
$yeast - 1_v s_7 = 0.61$		0.623 ± 0.049	0.601 ± 0.067	0.635 ± 0.052		0.659 ± 0.038	0.616 ± 0.048	0.609 ± 0.053	0.584 ± 0.046	0.511 ± 0.029	
$yeast - 2_v s_4 = 0.84$		0.840 ± 0.055					0.865 ± 0.042	0.839 ± 0.037	0.815 ± 0.050		0.810 ± 0.033
$yeast - 2vs_8 = 0.73$		0.762 ± 0.068		0.778 ± 0.084			0.747 ± 0.065	0.741 ± 0.087	0.756 ± 0.049		0.743 ± 0.049
yeast4 0.67		0.637 ± 0.032				0.719 ± 0.055		0.678 ± 0.046		0.497 ± 0.009	
yeast5 0.86		0.846 ± 0.068				0.878 ± 0.049	0.868 ± 0.057	0.864 ± 0.076	0.841 ± 0.048	0.510 ± 0.001	
yeast6 0.73		0.692 ± 0.047	0.725 ± 0.067	0.747 ± 0.062		0.768 ± 0.051	0.742 ± 0.059	0.731 ± 0.064	0.679 ± 0.058	0.521 ± 0.033	0.687 ± 0.050
cleveland $-0_v s_4$ 0.81		0.731 ± 0.129			0.750 ± 0.127		0.801 ± 0.063	0.814 ± 0.055	0.756 ± 0.084		0.690 ± 0.070
$ecoli - 0 - 1 - 4 - 7_v s_2 - 3 - 5 - 6 0.79$	92 ± 0.074	0.794 ± 0.048	0.822 ± 0.039	0.790 ± 0.069	0.776 ± 0.066	0.822 ± 0.050	0.827 ± 0.054	0.806 ± 0.077	0.721 ± 0.104	0.550 ± 0.083	
$ecoli - 0 - 1_v s_2 - 3 - 5 0.79$		0.806 ± 0.102	0.784 ± 0.059	0.749 ± 0.042	0.788 ± 0.041	0.841 ± 0.058	0.781 ± 0.050	0.800 ± 0.062	0.753 ± 0.087	0.649 ± 0.137	0.759 ± 0.083
$ecoli - 0 - 2 - 6 - 7_v s_3 - 5 0.79$		0.787 ± 0.062		0.822 ± 0.075			0.778 ± 0.066	0.802 ± 0.047	0.773 ± 0.057	0.566 ± 0.120	
$ecoli - 0 - 6 - 7_v s_3 - 5 0.79$		0.794 ± 0.048				0.834 ± 0.060	0.790 ± 0.056	0.796 ± 0.069		0.594 ± 0.147	
$ecoli - 0 - 6 - 7_v s_5$ 0.84		0.840 ± 0.074	0.828 ± 0.068		0.837 ± 0.064	0.842 ± 0.044	0.825 ± 0.060		0.850 ± 0.078	0.574 ± 0.127	0.835 ± 0.094
$qlass - 0 - 1 - 4 - 6_v s_2$ 0.59		0.560 ± 0.082				0.638 ± 0.077	0.558 ± 0.066	0.576 ± 0.062		0.557 ± 0.034	
$glass - 0 - 1 - 5_v s_2 = 0.68$		0.597 ± 0.068		0.713 ± 0.110			0.649 ± 0.079	0.678 ± 0.062		0.536 ± 0.072	
$yeast - 0 - 2 - 5 - 6_v s_3 - 7 - 8 - 9 0.71$		0.712 ± 0.051			0.717 ± 0.033		0.709 ± 0.037	0.700 ± 0.034	0.646 ± 0.062	0.541 ± 0.061	0.643 ± 0.035
yeast - 0 - 3 - 5 - 9 - 87 - 8 - 0.59		0.638 ± 0.041		0.623 ± 0.050	0.614 ± 0.049		0.615 ± 0.028	0.630 ± 0.031	0.550 ± 0.059		0.563 ± 0.064
$abalone - 17_v s_7 - 8 - 9 - 10 0.64$		0.642 ± 0.033				0.667 ± 0.024		0.642 ± 0.036		0.569 ± 0.057	
$abalone - 19_v s_1 0 - 11 - 12 - 13 0.55$		0.517 ± 0.024		0.548 ± 0.035			0.557 ± 0.034	0.560 ± 0.028		0.514 ± 0.041	
$abalone - 20_v s_8 - 9 - 10 0.69$		0.584 ± 0.065	0.674 ± 0.065	0.682 ± 0.050	0.630 ± 0.071	0.789 ± 0.061	0.681 ± 0.059	0.696 ± 0.050	0.621 ± 0.054	0.589 ± 0.042	
$abalone - 21_v s_8 = 0.72$		0.655 ± 0.074	0.699 ± 0.092	0.691 ± 0.116	0.736 ± 0.075	0.790 ± 0.070	0.692 ± 0.105	0.734 ± 0.126	0.712 ± 0.125	0.614 ± 0.092	
flare - F = 0.55		0.581 ± 0.030		0.578 ± 0.038			0.576 ± 0.048	0.577 ± 0.035			0.666 ± 0.078
$kddcup - buffer_overflow_v s_back$ 1.00		$1,000 \pm 0.000$	1.000 ± 0.000								
$kddcup - rootkit - imap_v s_back$ 1.00		1.000 ± 0.000	0.982 ± 0.036	0.982 ± 0.036	0.982 ± 0.036						
$kr - vs - k - zero_v s_e ight$ 0.96	61 ± 0.050	0.965 ± 0.051	0.965 ± 0.052	0.965 ± 0.051	0.968 ± 0.042	0.954 ± 0.074	0.954 ± 0.058	0.961 ± 0.050	0.771 ± 0.082	0.702 ± 0.042	0.858 ± 0.115
$poker - 8 - 9_v s_5 = 0.57$	72 ± 0.039	0.558 ± 0.049	0.566 ± 0.032	0.572 ± 0.032	0.545 ± 0.051	0.585 ± 0.070	0.543 ± 0.028	0.572 ± 0.039	0.531 ± 0.048	0.517 ± 0.054	0.522 ± 0.031
$poker - 8 - 9_v s_6 = 0.68$		0.824 ± 0.141	0.670 ± 0.096	0.644 ± 0.084			0.657 ± 0.105	0.680 ± 0.087			0.999 ± 0.001
$poker - 8_v s_6 = 0.68$		0.685 ± 0.163	0.703 ± 0.123	0.685 ± 0.095	0.691 ± 0.098	0.669 ± 0.162	0.677 ± 0.100	0.685 ± 0.101	0.931 ± 0.085	0.931 ± 0.084	0.832 ± 0.165
$poker - 9_v s_7 = 0.56$	64 ± 0.082	0.548 ± 0.063	0.564 ± 0.082	0.562 ± 0.084	0.586 ± 0.095	0.613 ± 0.127	0.563 ± 0.081	0.564 ± 0.082	0.686 ± 0.209	0.647 ± 0.162	0.621 ± 0.158
winequality $- red - 3_v s_5$ 0.51	16 ± 0.043	0.529 ± 0.066	0.506 ± 0.040	0.518 ± 0.045	0.528 ± 0.089	0.565 ± 0.056	0.525 ± 0.064	0.516 ± 0.043	0.519 ± 0.047	0.528 ± 0.049	0.557 ± 0.062
winequality - red - 4 0.55	52 ± 0.048	0.528 ± 0.030	0.576 ± 0.029	0.572 ± 0.036	0.564 ± 0.040	0.571 ± 0.036	0.548 ± 0.017	0.552 ± 0.050	0.537 ± 0.031	0.531 ± 0.031	0.547 ± 0.038
$winequality - red - 8_v s_6 - 7$ 0.54	43 ± 0.041	0.557 ± 0.050	0.550 ± 0.039	0.562 ± 0.051	0.556 ± 0.054	0.555 ± 0.043	0.545 ± 0.048	0.543 ± 0.041	0.544 ± 0.043	0.529 ± 0.053	0.539 ± 0.039
winequality $- red - 8_v s_6$ 0.60	09 ± 0.052	0.608 ± 0.064	0.605 ± 0.046	0.603 ± 0.067	0.579 ± 0.047	0.614 ± 0.058	0.630 ± 0.056	0.609 ± 0.052	0.577 ± 0.044	0.566 ± 0.063	0.571 ± 0.058
winequality $-$ white $-3 - 9_v s_5$ 0.56	66 ± 0.063	0.544 ± 0.047	0.540 ± 0.054	0.546 ± 0.056	0.533 ± 0.061	0.643 ± 0.056	0.535 ± 0.037	0.566 ± 0.063	0.528 ± 0.031	0.509 ± 0.019	0.525 ± 0.021
winequality $-$ white $-3_v s_7$ 0.53	39 ± 0.045	0.557 ± 0.060	0.576 ± 0.061	0.567 ± 0.055	0.590 ± 0.046	0.737 ± 0.086	0.524 ± 0.047	0.539 ± 0.045	0.546 ± 0.032	0.578 ± 0.076	0.574 ± 0.066
$winequality - white - 9_v s_4 = 0.72$	22 ± 0.163	0.672 ± 0.100	0.721 ± 0.162	0.721 ± 0.162	0.722 ± 0.162	0.692 ± 0.141	0.721 ± 0.162	0.722 ± 0.163		0.573 ± 0.112	
zoo - 3 - 0.65	58 ± 0.189	0.608 ± 0.123	0.665 ± 0.158	0.650 ± 0.156	0.635 ± 0.160	0.738 ± 0.159	0.639 ± 0.122	0.658 ± 0.189	0.509 ± 0.127	0.509 ± 0.127	0.000 ± 0.000
ecoli1 0.84	41 ± 0.056	0.818 ± 0.039	0.827 ± 0.049	0.836 ± 0.039	0.837 ± 0.041	0.842 ± 0.033	0.822 ± 0.048	0.860 ± 0.041	0.751 ± 0.067	0.556 ± 0.105	0.000 ± 0.000
ecoli2 0.85	55 ± 0.028	0.838 ± 0.035	0.850 ± 0.033	0.852 ± 0.036	0.848 ± 0.028	0.866 ± 0.037	0.852 ± 0.041	0.855 ± 0.028	0.777 ± 0.083	0.578 ± 0.113	0.000 ± 0.000
ecoli3 0.74	45 ± 0.049	0.748 ± 0.065	0.768 ± 0.067	0.772 ± 0.049	0.766 ± 0.053	0.833 ± 0.049	0.775 ± 0.051	0.755 ± 0.053	0.760 ± 0.050	0.554 ± 0.100	0.000 ± 0.000
glass0 0.76	67 ± 0.036	0.770 ± 0.060	0.772 ± 0.038	0.787 ± 0.033		0.802 ± 0.041	0.794 ± 0.040	0.774 ± 0.025	0.746 ± 0.051	0.673 ± 0.069	
glass1 0.71		0.733 ± 0.031	0.727 ± 0.054		0.714 ± 0.045		0.726 ± 0.061	0.716 ± 0.033		0.591 ± 0.058	
haberman 0.58		0.567 ± 0.025	0.573 ± 0.041	0.563 ± 0.045	0.572 ± 0.052		0.565 ± 0.055	0.596 ± 0.045	0.584 ± 0.025	0.536 ± 0.058	
page-blocks0 0.91	17 ± 0.012	0.898 ± 0.010	0.915 ± 0.010	0.914 ± 0.008	0.906 ± 0.009	0.900 ± 0.009	0.919 ± 0.011	0.917 ± 0.008	0.907 ± 0.013	0.895 ± 0.014	0.000 ± 0.000
pima 0.66	65 ± 0.020	0.673 ± 0.023	0.660 ± 0.021	0.665 ± 0.015	0.660 ± 0.023	0.678 ± 0.027	0.658 ± 0.021	0.670 ± 0.025	0.659 ± 0.030	0.600 ± 0.041	0.000 ± 0.000
vehicle1 0.66		0.668 ± 0.021	0.680 ± 0.032	0.671 ± 0.025		0.685 ± 0.023	0.674 ± 0.024	0.676 ± 0.014	0.663 ± 0.019	0.665 ± 0.021	
vehicle3 0.66		0.690 ± 0.023			0.669 ± 0.016		0.674 ± 0.020	0.667 ± 0.013	0.662 ± 0.038	0.680 ± 0.023	
yeast1 0.64		0.653 ± 0.017					0.652 ± 0.021	0.641 ± 0.009		0.507 ± 0.002	
yeast3 0.86	64 ± 0.029	0.832 ± 0.033	0.863 ± 0.024	0.849 ± 0.015	0.848 ± 0.025	0.860 ± 0.027	0.854 ± 0.031	0.867 ± 0.030	0.826 ± 0.029	0.504 ± 0.003	0.000 ± 0.000

Table 2. SVM – AUC

		polynom-fit-SMOTE	Lee	SMOBD	G-SMOTE	LVQ-SMOTE		E SMOTE-TomekLinks	JFOTS-pr	JFOTS-rc	JFOTS-prom
abalone19 0.5	593 ± 0.063	0.569 ± 0.048	0.593 ± 0.057	0.599 ± 0.065	0.602 ± 0.063	0.655 ± 0.056	0.593 ± 0.062	0.593 ± 0.063	0.620 ± 0.082	0.597 ± 0.083	0.610 ± 0.047
abalone9 - 18 0.7	740 ± 0.052	0.698 ± 0.036	0.745 ± 0.035	0.750 ± 0.042	0.738 ± 0.055	0.782 ± 0.043	0.739 ± 0.038	0.739 ± 0.051	0.678 ± 0.060	0.661 ± 0.091	0.668 ± 0.076
$ecoli - 0 - 1 - 3 - 7_v s_2 - 6 0.8$	845 ± 0.075	0.847 ± 0.078	0.838 ± 0.074	0.842 ± 0.076	0.845 ± 0.079	0.828 ± 0.078	0.844 ± 0.075	0.845 ± 0.075	0.844 ± 0.110	0.840 ± 0.110	0.861 ± 0.092
$glass - 0 - 1 - 6_v s_2$ 0.7	740 ± 0.099	0.697 ± 0.081	0.744 ± 0.090	0.740 ± 0.079	0.690 ± 0.076	0.622 ± 0.083	0.743 ± 0.072	0.740 ± 0.100	0.724 ± 0.090	0.673 ± 0.092	0.694 ± 0.065
$glass - 0 - 1 - 6_v s_5$ 0.8	820 ± 0.098	0.792 ± 0.117	0.820 ± 0.098	0.820 ± 0.098	0.792 ± 0.116	0.843 ± 0.147	0.820 ± 0.098	0.820 ± 0.098	0.784 ± 0.123	0.869 ± 0.153	0.808 ± 0.146
glass2 0.6	642 ± 0.143	0.638 ± 0.134	0.648 ± 0.140	0.637 ± 0.137	0.651 ± 0.137	0.677 ± 0.158	0.648 ± 0.146	0.641 ± 0.143	0.626 ± 0.130	0.631 ± 0.118	0.643 ± 0.119
glass4 0.8	892 ± 0.094	0.852 ± 0.116	0.883 ± 0.108	0.876 ± 0.121	0.876 ± 0.103	0.870 ± 0.111	0.876 ± 0.082	0.892 ± 0.094	0.821 ± 0.068	0.788 ± 0.142	0.810 ± 0.085
glass5 0.8	818 ± 0.106	0.809 ± 0.103	0.828 ± 0.099	0.828 ± 0.099	0.817 ± 0.106	0.854 ± 0.155	0.818 ± 0.106	0.818 ± 0.106	0.788 ± 0.098	0.870 ± 0.119	0.847 ± 0.117
$page - blocks - 1 - 3_v s_4$ 0.9	904 ± 0.114	0.791 ± 0.070	0.908 ± 0.112	0.907 ± 0.112	0.903 ± 0.119	0.796 ± 0.048	0.888 ± 0.116	0.904 ± 0.114	0.819 ± 0.074	0.862 ± 0.073	0.835 ± 0.124
$yeast - 0 - 5 - 6 - 7 - 9_v s_4 = 0.7$	749 ± 0.047	0.741 ± 0.037	0.762 ± 0.040	0.752 ± 0.049	0.747 ± 0.055	0.765 ± 0.030	0.749 ± 0.041	0.746 ± 0.047	0.696 ± 0.066	0.496 ± 0.008	0.706 ± 0.068
$yeast - 1 - 2 - 8 - 9_v s_7$ 0.6	606 ± 0.041	0.594 ± 0.054	0.608 ± 0.050	0.605 ± 0.049	0.620 ± 0.049	0.673 ± 0.069	0.605 ± 0.053	0.610 ± 0.038	0.566 ± 0.052	0.511 ± 0.004	0.584 ± 0.039
$yeast - 1 - 4 - 5 - 8_v s_7$ 0.5	571 ± 0.051	0.568 ± 0.051	0.564 ± 0.047	0.561 ± 0.037	0.577 ± 0.047	0.600 ± 0.034	0.557 ± 0.035	0.571 ± 0.050	0.543 ± 0.035	0.505 ± 0.003	0.576 ± 0.050
$yeast - 1_v s_7 = 0.6$		0.671 ± 0.046	0.691 ± 0.039	0.692 ± 0.043	0.664 ± 0.066	0.686 ± 0.064	0.683 ± 0.040	0.689 ± 0.041	0.596 ± 0.086	0.512 ± 0.030	0.630 ± 0.066
$yeast - 2_v s_4 = 0.8$	870 ± 0.039	0.862 ± 0.040	0.873 ± 0.039	0.875 ± 0.045	0.871 ± 0.046	0.869 ± 0.034	0.868 ± 0.046	0.870 ± 0.038	0.848 ± 0.033	0.605 ± 0.174	0.855 ± 0.054
$yeast - 2_v s_8 = 0.7$		0.773 ± 0.051	0.747 ± 0.043	0.756 ± 0.040		0.795 ± 0.064	0.740 ± 0.063	0.736 ± 0.046	0.756 ± 0.071		0.692 ± 0.091
	765 ± 0.034	0.746 ± 0.032				0.792 ± 0.032	0.757 ± 0.024	0.764 ± 0.034	0.688 ± 0.023		0.744 ± 0.086
	927 ± 0.029	0.924 ± 0.030	0.927 ± 0.029	0.927 ± 0.029	0.930 ± 0.028	0.941 ± 0.024	0.927 ± 0.029	0.927 ± 0.029	0.900 ± 0.064	0.510 ± 0.001	0.860 ± 0.135
	843 ± 0.049	0.840 ± 0.046	0.848 ± 0.054			0.862 ± 0.034	0.842 ± 0.053	0.843 ± 0.049	0.756 ± 0.054	0.520 ± 0.031	0.816 ± 0.041
cleveland $-0_v s_4$ 0.7		0.681 ± 0.082				0.845 ± 0.052	0.719 ± 0.088	0.719 ± 0.089	0.718 ± 0.048	0.666 ± 0.101	
$ecoli - 0 - 1 - 4 - 7_v s_2 - 3 - 5 - 6$ 0.8		0.851 ± 0.020	0.867 ± 0.029	0.866 ± 0.019		0.884 ± 0.033	0.871 ± 0.037	0.872 ± 0.032	0.758 ± 0.130		0.836 ± 0.070
$ecoli - 0 - 1_v s_2 - 3 - 5 \ 0.8$		0.865 ± 0.044				0.886 ± 0.047	0.858 ± 0.045	0.853 ± 0.041	0.793 ± 0.088	0.692 ± 0.199	
$ecoli - 0 - 2 - 6 - 7_v s_3 - 5$ 0.8		0.842 ± 0.061	0.838 ± 0.056	0.843 ± 0.056		0.871 ± 0.050	0.835 ± 0.043 0.835 ± 0.059	0.834 ± 0.056	0.793 ± 0.053 0.827 ± 0.054	0.667 ± 0.149	
$ecoli - 0 - 2 - 0 - 7_v s_3 - 5 \ 0.8$		0.851 ± 0.056				0.869 ± 0.060	0.846 ± 0.061	0.846 ± 0.055	0.845 ± 0.051	0.680 ± 0.159	
$ecoli - 0 - 6 - 7_v s_5 - 0.8$		0.863 ± 0.043		0.859 ± 0.043			0.859 ± 0.044	0.862 ± 0.042	0.843 ± 0.031 0.861 ± 0.044	0.647 ± 0.163	
$econ = 0 - 6 - t_v s_5$ 0.8 $glass = 0 - 1 - 4 - 6_v s_2$ 0.7		0.669 ± 0.128	0.863 ± 0.044 0.713 ± 0.107	0.839 ± 0.043 0.702 ± 0.131	0.860 ± 0.042 0.665 ± 0.120		0.859 ± 0.044 0.716 ± 0.127	0.862 ± 0.042 0.709 ± 0.101	0.861 ± 0.044 0.609 ± 0.085		0.631 ± 0.134
		0.669 ± 0.128 0.659 ± 0.067		0.702 ± 0.131 0.711 ± 0.071			0.716 ± 0.127 0.685 ± 0.068	0.709 ± 0.101 0.696 ± 0.063	0.609 ± 0.085 0.673 ± 0.066	0.662 ± 0.083 0.616 ± 0.162	
$glass - 0 - 1 - 5_v s_2$ 0.6											
$yeast - 0 - 2 - 5 - 6_v s_3 - 7 - 8 - 9 0.7$		0.775 ± 0.041				0.791 ± 0.030	0.781 ± 0.029	0.783 ± 0.026	0.735 ± 0.062		0.765 ± 0.050
$yeast - 0 - 3 - 5 - 9_v s_7 - 8$ 0.6		0.640 ± 0.032	0.687 ± 0.036			0.660 ± 0.053	0.692 ± 0.034	0.695 ± 0.036	0.634 ± 0.069	0.516 ± 0.027	
$abalone - 17_v s_7 - 8 - 9 - 10 0.8$		0.742 ± 0.040		0.810 ± 0.034		0.823 ± 0.025	0.816 ± 0.024	0.813 ± 0.019	0.677 ± 0.073	0.722 ± 0.090	
$abalone - 19_v s_1 0 - 11 - 12 - 13 0.6$		0.582 ± 0.058	0.637 ± 0.061	0.636 ± 0.052		0.659 ± 0.075	0.629 ± 0.067	0.633 ± 0.062	0.631 ± 0.085		0.572 ± 0.097
$abalone - 20_v s_8 - 9 - 10 0.8$		0.775 ± 0.041				0.884 ± 0.051	0.798 ± 0.055	0.806 ± 0.048	0.743 ± 0.109	0.742 ± 0.103	
$abalone - 21_v s_8 = 0.7$		0.788 ± 0.120	0.798 ± 0.116			0.839 ± 0.070	0.798 ± 0.117	0.799 ± 0.117	0.771 ± 0.144	0.728 ± 0.125	
flare - F = 0.7		0.689 ± 0.046		0.743 ± 0.049			0.738 ± 0.045	0.738 ± 0.040		0.575 ± 0.068	
$kddcup - buffer_overflow_v s_back$ 0.9		0.997 ± 0.010		0.993 ± 0.013			0.993 ± 0.013	0.993 ± 0.013	0.997 ± 0.010	0.997 ± 0.010	
$kddcup - rootkit - imap_v s_b ack$ 0.9		0.977 ± 0.023		0.977 ± 0.023			0.973 ± 0.030	0.977 ± 0.023	0.977 ± 0.042		
$kr - vs - k - zero_v s_e ight$ 0.9		0.934 ± 0.057		0.937 ± 0.052			0.934 ± 0.057	0.937 ± 0.052	0.845 ± 0.076	0.701 ± 0.041	
$poker - 8 - 9_v s_5 = 0.6$		0.588 ± 0.066	0.617 ± 0.058	0.613 ± 0.056		0.677 ± 0.074	0.614 ± 0.047	0.625 ± 0.067	0.634 ± 0.079	0.562 ± 0.085	
$poker - 8 - 9_v s_6 = 0.7$		0.724 ± 0.047				0.937 ± 0.055	0.749 ± 0.086	0.757 ± 0.064		0.986 ± 0.037	
$poker - 8_v s_6 = 0.7$		0.712 ± 0.059	0.783 ± 0.073	0.789 ± 0.066		0.968 ± 0.051	0.789 ± 0.065	0.783 ± 0.073	0.869 ± 0.123		
$poker - 9_v s_7 = 0.6$		0.624 ± 0.097		0.636 ± 0.104			0.611 ± 0.087			0.686 ± 0.139	
winequality $- red - 3_v s_5$ 0.5		0.542 ± 0.050		0.540 ± 0.049		0.608 ± 0.057	0.550 ± 0.050	0.540 ± 0.049	0.539 ± 0.096	0.526 ± 0.117	
winequality - red - 4 = 0.6	638 ± 0.034	0.611 ± 0.029	0.632 ± 0.033	0.644 ± 0.035	0.625 ± 0.032	0.617 ± 0.029	0.641 ± 0.034	0.637 ± 0.033	0.548 ± 0.026	0.599 ± 0.051	0.609 ± 0.050
winequality $- red - 8_v s_6 - 7$ 0.5	571 ± 0.054	0.550 ± 0.055	0.572 ± 0.054	0.571 ± 0.054	0.555 ± 0.062	0.541 ± 0.063	0.557 ± 0.048	0.571 ± 0.054	0.542 ± 0.067	0.518 ± 0.081	0.550 ± 0.060
winequality $- red - 8_v s_6$ 0.6	614 ± 0.031	0.610 ± 0.024	0.615 ± 0.031	0.615 ± 0.030	0.625 ± 0.030	0.627 ± 0.065	0.625 ± 0.030	0.614 ± 0.031	0.637 ± 0.044	0.609 ± 0.096	0.622 ± 0.079
winequality $-$ white $-3 - 9_v s_5$ 0.5	565 ± 0.051	0.529 ± 0.045	0.559 ± 0.057	0.560 ± 0.048	0.542 ± 0.039	0.685 ± 0.039	0.557 ± 0.051	0.565 ± 0.051	0.519 ± 0.064	0.528 ± 0.055	0.565 ± 0.055
$winequality - white - 3_v s_7 = 0.5$	533 ± 0.049	0.528 ± 0.041	0.549 ± 0.066	0.547 ± 0.067	0.546 ± 0.039	0.756 ± 0.077	0.539 ± 0.047	0.533 ± 0.049	0.561 ± 0.063	0.607 ± 0.121	0.594 ± 0.077
$winequality - white - 9_v s_4 = 0.8$	815 ± 0.134	0.815 ± 0.134	0.815 ± 0.134	0.699 ± 0.218	0.815 ± 0.134	0.695 ± 0.214	0.815 ± 0.134	0.815 ± 0.134	0.707 ± 0.175	0.707 ± 0.175	0.707 ± 0.175
zoo - 3 0.6	311 ± 0.162	0.611 ± 0.162	0.611 ± 0.162	0.597 ± 0.163	0.611 ± 0.162	0.397 ± 0.275	0.611 ± 0.162	0.611 ± 0.162	0.547 ± 0.174	0.547 ± 0.174	0.000 ± 0.000
ecoli1 0.8	885 ± 0.027	0.886 ± 0.020	0.886 ± 0.020	0.884 ± 0.020	0.883 ± 0.024	0.889 ± 0.015	0.881 ± 0.022	0.884 ± 0.026	0.875 ± 0.033	0.576 ± 0.145	0.000 ± 0.000
	940 ± 0.024	0.932 ± 0.034	0.941 ± 0.024	0.940 ± 0.026	0.939 ± 0.025	0.938 ± 0.021	0.942 ± 0.022	0.939 ± 0.025	0.860 ± 0.082	0.604 ± 0.146	
	889 ± 0.022	0.893 ± 0.024		0.894 ± 0.017			0.887 ± 0.021	0.892 ± 0.021	0.858 ± 0.056		0.000 ± 0.000
	779 ± 0.040	0.790 ± 0.020		0.778 ± 0.037			0.792 ± 0.034	0.778 ± 0.036	0.742 ± 0.032	0.724 ± 0.065	
	701 ± 0.038	0.689 ± 0.043	0.690 ± 0.038	0.696 ± 0.034			0.698 ± 0.039	0.701 ± 0.044	0.694 ± 0.062		0.000 ± 0.000
haberman 0.6		0.642 ± 0.035	0.619 ± 0.026		0.611 ± 0.039		0.614 ± 0.034	0.611 ± 0.028	0.613 ± 0.039	0.559 ± 0.092	
page - blocks0 0.9		0.900 ± 0.008	0.931 ± 0.020	0.923 ± 0.009	0.931 ± 0.008		0.930 ± 0.008	0.932 ± 0.008	0.879 ± 0.034		0.000 ± 0.000
	727 ± 0.030	0.722 ± 0.027	0.729 ± 0.023	0.726 ± 0.003			0.732 ± 0.028	0.728 ± 0.032	0.706 ± 0.018	0.666 ± 0.030	
vehicle1 0.7		0.749 ± 0.023		0.720 ± 0.022 0.790 ± 0.020			0.791 ± 0.019	0.728 ± 0.032 0.793 ± 0.025		0.804 ± 0.018	
vehicle3 0.7		0.749 ± 0.023 0.734 ± 0.017		0.797 ± 0.026			0.791 ± 0.019 0.789 ± 0.018	0.793 ± 0.025 0.790 ± 0.021		0.789 ± 0.027	
	789 ± 0.022 711 ± 0.013	0.695 ± 0.013		0.797 ± 0.026 0.707 ± 0.020			0.789 ± 0.018 0.709 ± 0.014	0.790 ± 0.021 0.712 ± 0.013		0.789 ± 0.027 0.507 ± 0.002	
	893 ± 0.022	0.884 ± 0.027		0.707 ± 0.020 0.893 ± 0.026			0.709 ± 0.014 0.895 ± 0.023	0.712 ± 0.013 0.893 ± 0.022		0.507 ± 0.002 0.504 ± 0.003	
yeast3 0.8	695 ± 0.022	0.884 ± 0.027	0.694 ± 0.020	0.695 ± 0.026	0.000 ± 0.020	0.690 ± 0.020	0.695 ± 0.023	0.695 ± 0.022	0.807 ± 0.019	0.504 ± 0.003	0.000 ± 0.000

Table 3. KNN – BAC

Dataset name SMOTE	polynom-fit-SMOTE		SMOBD	G-SMOTE	LVQ-SMOTE	Assembled-SMOT	E SMOTE-TomekLinks			JFOTS-prom
$abalone19 \ 0.568 \pm 0.069$	0.519 ± 0.028	0.568 ± 0.069	0.567 ± 0.069	0.549 ± 0.043	0.554 ± 0.047	0.565 ± 0.062	0.568 ± 0.069	0.520 ± 0.030	0.497 ± 0.011	0.520 ± 0.032
$abalone9 - 18 \ 0.719 \pm 0.033$	0.704 ± 0.044	0.704 ± 0.034		0.700 ± 0.048		0.714 ± 0.041	0.720 ± 0.033		0.572 ± 0.063	
$ecoli - 0 - 1 - 3 - 7_v s_2 - 6 \ 0.834 \pm 0.075$	0.835 ± 0.076			0.835 ± 0.076		0.834 ± 0.075	0.834 ± 0.075		0.800 ± 0.106	
$glass - 0 - 1 - 6_v s_2 0.718 \pm 0.086$	0.682 ± 0.045			0.700 ± 0.056		0.725 ± 0.082	0.717 ± 0.085		0.606 ± 0.086	
$glass - 0 - 1 - 6_v s_5 0.914 \pm 0.097$	0.915 ± 0.098	0.914 ± 0.097			0.881 ± 0.120	0.914 ± 0.097	0.914 ± 0.097		0.842 ± 0.192	
$glass2 0.630 \pm 0.134$	0.633 ± 0.137	0.637 ± 0.151			0.627 ± 0.112	0.635 ± 0.145	0.628 ± 0.133		0.583 ± 0.096	
$glass4 \ 0.901 \pm 0.057$	0.903 ± 0.068			0.879 ± 0.071	0.863 ± 0.038	0.892 ± 0.048	0.901 ± 0.057		0.752 ± 0.141	
$glass5 0.931 \pm 0.110$	0.933 ± 0.110	0.921 ± 0.116			0.862 ± 0.108	0.931 ± 0.110	0.931 ± 0.110		0.867 ± 0.136	
$page - blocks - 1 - 3_v s_4 \ 0.983 \pm 0.023$				0.949 ± 0.095	0.980 ± 0.016	0.976 ± 0.025	0.983 ± 0.023		0.835 ± 0.086	
$yeast - 0 - 5 - 6 - 7 - 9_v s_4 0.727 \pm 0.045$	0.740 ± 0.038	0.730 ± 0.040			0.731 ± 0.045	0.718 ± 0.035	0.725 ± 0.043			0.643 ± 0.072
$yeast - 1 - 2 - 8 - 9_v s_7 0.672 \pm 0.048$	0.685 ± 0.045	0.668 ± 0.040			0.660 ± 0.052	0.667 ± 0.051	0.672 ± 0.048		0.500 ± 0.000	
$yeast - 1 - 4 - 5 - 8_v s_7$ 0.611 ± 0.040	0.595 ± 0.062 0.723 ± 0.042	0.614 ± 0.044		0.571 ± 0.051 0.702 ± 0.055	0.577 ± 0.042 0.690 ± 0.033	0.605 ± 0.039 0.701 ± 0.051	0.611 ± 0.038 0.722 ± 0.035		0.500 ± 0.000 0.499 ± 0.002	
$yeast - 1_vs_7 0.723 \pm 0.036$				0.702 ± 0.033 0.873 ± 0.029					0.499 ± 0.002 0.603 ± 0.158	
$yeast - 2_vs_4$ 0.873 ± 0.030 $yeast - 2_vs_8$ 0.802 ± 0.051	0.863 ± 0.035 0.810 ± 0.046			0.803 ± 0.029 0.803 ± 0.044		0.875 ± 0.027 0.798 ± 0.051	0.874 ± 0.030 0.801 ± 0.050		0.534 ± 0.105	
$yeast - 2.58 - 0.802 \pm 0.031$ $yeast4 - 0.729 \pm 0.025$	0.733 ± 0.034			0.803 ± 0.044 0.713 ± 0.033		0.735 ± 0.031	0.801 ± 0.030 0.729 ± 0.025		0.534 ± 0.105 0.500 ± 0.000	
$yeast5 0.929 \pm 0.036$	0.920 ± 0.035				0.933 ± 0.049	0.929 ± 0.034	0.929 ± 0.025 0.929 ± 0.036		0.500 ± 0.000	
$yeast6 0.814 \pm 0.044$	0.816 ± 0.038				0.829 ± 0.035	0.809 ± 0.043	0.929 ± 0.030 0.814 ± 0.044		0.500 ± 0.000	
$cleveland - 0_v s_4 = 0.876 \pm 0.069$	0.868 ± 0.036			0.873 ± 0.033		0.883 ± 0.024	0.876 ± 0.069		0.719 ± 0.135	
$ecoli - 0 - 1 - 4 - 7_v s_2 - 3 - 5 - 6$ 0.883 ± 0.018	0.878 ± 0.024			0.884 ± 0.022		0.882 ± 0.021	0.884 ± 0.018		0.568 ± 0.099	
$ecoli - 0 - 1_v s_2 - 3 - 5 \ 0.884 \pm 0.024$	0.887 ± 0.026			0.879 ± 0.024		0.886 ± 0.030	0.884 ± 0.024		0.689 ± 0.160	
$ecoli - 0 - 2 - 6 - 7_v s_3 - 5 0.839 \pm 0.051$	0.839 ± 0.051			0.843 ± 0.057		0.838 ± 0.049	0.839 ± 0.050		0.588 ± 0.122	
$ecoli - 0 - 6 - 7_v s_3 - 5 0.851 \pm 0.054$	0.855 ± 0.053			0.847 ± 0.061		0.851 ± 0.052	0.852 ± 0.053		0.614 ± 0.143	
$ecoli - 0 - 6 - 7_v s_5$ 0.866 ± 0.047	0.865 ± 0.056				0.870 ± 0.036	0.865 ± 0.049	0.867 ± 0.048		0.589 ± 0.123	
$glass - 0 - 1 - 4 - 6_v s_2 \ 0.674 \pm 0.098$		0.671 ± 0.103		0.645 ± 0.101		0.666 ± 0.105	0.669 ± 0.095		0.582 ± 0.110	
$glass - 0 - 1 - 5_v s_2 0.676 \pm 0.059$	0.674 ± 0.055	0.684 ± 0.063				0.683 ± 0.059	0.675 ± 0.060		0.622 ± 0.128	
$yeast - 0 - 2 - 5 - 6_v s_3 - 7 - 8 - 9 0.772 \pm 0.031$	0.768 ± 0.025	0.775 ± 0.028	0.772 ± 0.026	0.773 ± 0.030	0.764 ± 0.033	0.772 ± 0.031	0.773 ± 0.032	0.684 ± 0.075	0.533 ± 0.058	0.683 ± 0.036
$yeast - 0 - 3 - 5 - 9_v s_7 - 8 \ 0.679 \pm 0.037$	0.675 ± 0.035				0.681 ± 0.050	0.669 ± 0.030	0.680 ± 0.038		0.502 ± 0.011	
$abalone - 17_v s_7 - 8 - 9 - 10 \ 0.749 \pm 0.046$	0.719 ± 0.034	0.752 ± 0.045				0.743 ± 0.044	0.749 ± 0.046	0.606 ± 0.033	0.582 ± 0.077	0.612 ± 0.072
$abalone - 19_v s_1 0 - 11 - 12 - 13 \ 0.583 \pm 0.037$	0.551 ± 0.025	0.587 ± 0.040	0.589 ± 0.047	0.554 ± 0.046	0.569 ± 0.045	0.570 ± 0.044	0.582 ± 0.037	0.535 ± 0.032	0.515 ± 0.033	0.523 ± 0.044
$abalone - 20_v s_8 - 9 - 10 \ 0.750 \pm 0.055$	0.662 ± 0.025	0.758 ± 0.062	0.761 ± 0.067	0.667 ± 0.058	0.709 ± 0.052	0.743 ± 0.082	0.746 ± 0.058	0.635 ± 0.056	0.549 ± 0.077	0.638 ± 0.049
$abalone - 21_v s_8 \ 0.830 \ \pm \ 0.084$	0.771 ± 0.079	0.815 ± 0.074	0.815 ± 0.076	0.797 ± 0.080	0.794 ± 0.065	0.822 ± 0.080	0.830 ± 0.084	0.703 ± 0.095	0.667 ± 0.121	0.710 ± 0.089
$flare - F = 0.693 \pm 0.044$	0.674 ± 0.035			0.671 ± 0.043		0.694 ± 0.041	0.692 ± 0.044		0.504 ± 0.009	
$kddcup - buffer_overflow_v s_back 0.957 \pm 0.047$	0.957 ± 0.047				0.960 ± 0.042	0.947 ± 0.043	0.957 ± 0.047		0.957 ± 0.045	
$kddcup - rootkit - imap_v s_b ack 0.973 \pm 0.022$		0.973 ± 0.022			0.945 ± 0.027	0.955 ± 0.050	0.973 ± 0.022		0.964 ± 0.040	
$kr - vs - k - zero_v s_e ight$ 0.940 ± 0.050	0.930 ± 0.053			0.926 ± 0.061		0.929 ± 0.060	0.940 ± 0.050			0.749 ± 0.175
$poker - 8 - 9_v s_5 0.609 \pm 0.059$	0.578 ± 0.036				0.643 ± 0.048	0.614 ± 0.061	0.609 ± 0.059		0.514 ± 0.036	
$poker - 8 - 9_v s_6 0.949 \pm 0.040$	0.912 ± 0.033			0.904 ± 0.053		0.937 ± 0.031	0.949 ± 0.040	0.988 ± 0.038		
$poker - 8_v s_6 0.942 \pm 0.061$	0.851 ± 0.057				0.978 ± 0.018	0.932 ± 0.078	0.942 ± 0.061		0.931 ± 0.113	
$poker - 9_v s_7 0.839 \pm 0.152$	0.839 ± 0.152			0.816 ± 0.135		0.828 ± 0.145	0.839 ± 0.152		0.806 ± 0.192	
winequality $- red - 3_v s_5$ 0.584 \pm 0.061	0.577 ± 0.053				0.592 ± 0.064	0.575 ± 0.052	0.584 ± 0.061		0.493 ± 0.033	
winequality $- red - 4 \ 0.597 \pm 0.027$	0.583 ± 0.043			0.588 ± 0.036		0.602 ± 0.024	0.597 ± 0.026		0.521 ± 0.038	
$winequality - red - 8_v s_6 - 7 \ 0.530 \pm 0.064$	0.543 ± 0.068			0.536 ± 0.055		0.534 ± 0.055	0.531 ± 0.064		0.534 ± 0.070	
winequality $- red - 8_v s_6$ 0.635 \pm 0.050				0.595 ± 0.050	0.600 ± 0.052	0.632 ± 0.043	0.635 ± 0.050		0.584 ± 0.077	
winequality – white – 3 – 9_vs_5 0.618 \pm 0.030				0.573 ± 0.029	0.602 ± 0.053	0.599 ± 0.034	0.618 ± 0.030		0.518 ± 0.029	
winequality – white – 3_vs_7 0.630 \pm 0.086	0.573 ± 0.064			0.577 ± 0.058 0.879 ± 0.092	0.644 ± 0.084	0.630 ± 0.099 0.878 ± 0.091	0.630 ± 0.086 0.878 ± 0.091		0.599 ± 0.089 0.726 ± 0.177	
winequality - white - 9_vs_4 0.878 \pm 0.091 zoo - 3 0.827 \pm 0.157	0.882 ± 0.095 0.827 ± 0.157	0.878 ± 0.091 0.827 ± 0.157				0.878 ± 0.091 0.827 ± 0.157	0.878 ± 0.091 0.827 ± 0.157		0.726 ± 0.177 0.630 ± 0.130	
ecoli 0.864 ± 0.026	0.827 ± 0.137 0.863 ± 0.019			0.827 ± 0.137 0.870 ± 0.026	0.864 ± 0.028	0.827 ± 0.137 0.863 ± 0.033	0.827 ± 0.137 0.867 ± 0.023		0.563 ± 0.130 0.563 ± 0.127	
ecoli 0.864 ± 0.026 ecoli 0.915 ± 0.028	0.922 ± 0.019			0.870 ± 0.026 0.919 ± 0.029	0.864 ± 0.028 0.911 ± 0.021	0.863 ± 0.033 0.914 ± 0.027	0.867 ± 0.023 0.915 ± 0.028		0.563 ± 0.127 0.584 ± 0.138	
ecoli3 0.866 ± 0.019	0.922 ± 0.025 0.857 ± 0.022	0.868 ± 0.015			0.851 ± 0.021 0.851 ± 0.028	0.861 ± 0.027 0.861 ± 0.018	0.915 ± 0.028 0.865 ± 0.015		0.584 ± 0.138 0.575 ± 0.119	
glass0 0.791 ± 0.035	0.799 ± 0.036			0.793 ± 0.028	0.787 ± 0.028	0.800 ± 0.030	0.800 ± 0.013		0.700 ± 0.116	
$glass0 0.791 \pm 0.033$ $glass1 0.738 \pm 0.047$	0.749 ± 0.053	0.745 ± 0.034			0.740 ± 0.031	0.736 ± 0.030	0.738 ± 0.051		0.551 ± 0.081	
$haberman 0.601 \pm 0.034$	0.616 ± 0.036	0.587 ± 0.044			0.587 ± 0.031	0.584 ± 0.029	0.599 ± 0.030		0.531 ± 0.081 0.535 ± 0.074	
$page - blocks0 0.929 \pm 0.010$	0.911 ± 0.012			0.924 ± 0.039		0.931 ± 0.009	0.930 ± 0.010		0.905 ± 0.012	
$pima 0.685 \pm 0.021$	0.708 ± 0.018			0.683 ± 0.017		0.687 ± 0.017	0.693 ± 0.024		0.616 ± 0.053	
$vehicle1 0.723 \pm 0.026$	0.740 ± 0.017			0.726 ± 0.017	0.720 ± 0.022	0.731 ± 0.022	0.724 ± 0.027		0.716 ± 0.030	
vehicle3 0.708 ± 0.018	0.700 ± 0.029			0.709 ± 0.017	0.692 ± 0.023	0.712 ± 0.022	0.706 ± 0.020			0.000 ± 0.000
$yeast1 = 0.675 \pm 0.010$	0.697 ± 0.012			0.668 ± 0.012		0.674 ± 0.013	0.678 ± 0.010			0.000 ± 0.000
$yeast3 0.873 \pm 0.017$	0.874 ± 0.021			0.870 ± 0.018		0.874 ± 0.017	0.872 ± 0.017			0.000 ± 0.000

Table 4. CART – G-mean

Dataset name SMOTE	polynom-fit-SMOT	E Lee SMOBD	G-SMOTE LVQ-SM	OTE Assembled-SMO	ΓΕ SMOTE-TomekLinks	JFOTS-pr	JFOTS-rc	JFOTS-prom
$abalone19 \ 0.365 \pm 0.14$	$8 0.075 \pm 0.114$	0.312 ± 0.168 0.387 \pm 0.11	0 0.282 ± 0.174 0.332 ± 0	0.116 0.358 ± 0.122	0.365 ± 0.148	0.084 ± 0.132	0.354 ± 0.206	0.365 ± 0.176
$abalone9 - 18 \ 0.605 \pm 0.10$	0.508 ± 0.072	$0.619 \pm 0.082 0.639 \pm 0.076$	0.584 ± 0.056 0.640 \pm	0.133 0.588 ± 0.059	0.610 ± 0.105	0.583 ± 0.073	0.442 ± 0.144	0.511 ± 0.106
$ecoli - 0 - 1 - 3 - 7_v s_2 - 6 0.723 \pm 0.25$			0.793 ± 0.086 0.736 ± 0		0.723 ± 0.254	0.594 ± 0.232		0.619 ± 0.241
$glass - 0 - 1 - 6_v s_2$ 0.565 ± 0.08		0.614 ± 0.088 0.573 ± 0.101			0.564 ± 0.085	0.567 ± 0.180		0.516 ± 0.105
$glass - 0 - 1 - 6_v s_5$ 0.829 ± 0.18		0.829 ± 0.185 0.829 ± 0.185			0.829 ± 0.185	0.704 ± 0.209		0.701 ± 0.213
$glass2 0.431 \pm 0.26$		0.402 ± 0.248 0.495 ± 0.204						0.526 ± 0.148
$glass4 \ 0.841 \pm 0.10$	0.823 ± 0.064	0.841 ± 0.103 0.831 ± 0.101	0.847 ± 0.097 0.789 ± 0	0.113 0.840 ± 0.104	0.841 ± 0.102	0.761 ± 0.154	0.740 ± 0.159	0.732 ± 0.148
$glass5 0.813 \pm 0.20$	$6 0.812 \pm 0.205$	0.813 ± 0.206 0.813 ± 0.206	0.826 ± 0.212 0.924 \pm	0.129 0.813 ± 0.206	0.813 ± 0.206	0.796 ± 0.201	0.874 ± 0.165	0.742 ± 0.204
$page - blocks - 1 - 3_v s_4 = 0.967 \pm 0.06$		0.962 ± 0.077 0.961 ± 0.076			0.967 ± 0.065	0.895 ± 0.070	0.874 ± 0.113	
$yeast - 0 - 5 - 6 - 7 - 9_v s_4 - 0.658 \pm 0.08$	$8 0.631 \pm 0.068$	$0.683 \pm 0.066 0.654 \pm 0.085$	0.631 ± 0.063 0.694 ±	0.070 0.649 ± 0.054	0.671 ± 0.056	0.603 ± 0.074	0.091 ± 0.057	0.627 ± 0.088
$yeast - 1 - 2 - 8 - 9_v s_7 0.475 \pm 0.05$		0.485 ± 0.061 0.453 ± 0.100			0.503 ± 0.081		0.143 ± 0.028	
$yeast - 1 - 4 - 5 - 8_v s_7 - 0.357 \pm 0.15$	0.397 ± 0.066	0.350 ± 0.169 0.336 ± 0.140	0.326 ± 0.185 0.388 ± 0	0.102 0.420 ± 0.060	0.344 ± 0.142	0.196 ± 0.172	0.099 ± 0.027	0.365 ± 0.195
$yeast - 1_v s_7 = 0.531 \pm 0.09$		0.515 ± 0.103 0.568 ± 0.087			0.526 ± 0.084	0.439 ± 0.103	0.099 ± 0.170	
$yeast - 2_v s_4 = 0.837 \pm 0.05$		0.858 ± 0.049 0.851 ± 0.079			0.831 ± 0.042	0.800 ± 0.060	0.256 ± 0.341	
$yeast - 2_v s_8 = 0.689 \pm 0.12$		0.737 ± 0.149 0.750 \pm 0.11			0.704 ± 0.128	0.715 ± 0.068	0.187 ± 0.191	
$yeast4 = 0.612 \pm 0.07$	$6 0.541 \pm 0.057$	$0.631 \pm 0.094 0.634 \pm 0.076$	0.538 ± 0.073 0.684 \pm	0.077 0.597 ± 0.139	0.614 ± 0.079	0.605 ± 0.088	0.113 ± 0.022	0.472 ± 0.110
$yeast5 = 0.848 \pm 0.08$	$9 0.829 \pm 0.086$	0.830 ± 0.077 0.845 ± 0.081	0.841 ± 0.076 0.873 ±	0.055 0.858 ± 0.066	0.850 ± 0.091	0.826 ± 0.058	0.142 ± 0.009	0.717 ± 0.209
$yeast6 - 0.683 \pm 0.09$		0.675 ± 0.103 0.707 ± 0.090			0.684 ± 0.095	0.603 ± 0.088	0.188 ± 0.138	
$cleveland - 0_v s_4 \ 0.800 \ \pm \ 0.00$		0.753 ± 0.151 0.753 ± 0.111	0.676 ± 0.253 0.717 ± 0	0.060 0.782 ± 0.079	0.800 ± 0.067		0.701 ± 0.137	
$ecoli - 0 - 1 - 4 - 7_v s_2 - 3 - 5 - 6 0.772 \pm 0.09$		0.810 ± 0.047 0.771 ± 0.088	0.751 ± 0.082 0.818 \pm	0.053 0.815 ± 0.063	0.787 ± 0.100	0.652 ± 0.161	0.244 ± 0.269	0.708 ± 0.117
$ecoli - 0 - 1_v s_2 - 3 - 5 \ 0.779 \pm 0.07$	$7 0.773 \pm 0.149$	0.759 ± 0.078 0.719 ± 0.058	0.768 ± 0.055 0.831 ±	0.076 0.759 ± 0.064	0.781 ± 0.077	0.709 ± 0.154	0.430 ± 0.360	0.728 ± 0.106
$ecoli - 0 - 2 - 6 - 7_v s_3 - 5 0.782 \pm 0.05$		0.795 ± 0.067 0.807 ± 0.090	0.817 ± 0.064 0.820 \pm	0.070 0.758 ± 0.079	0.785 ± 0.060	0.744 ± 0.074	0.292 ± 0.293	0.786 ± 0.075
$ecoli - 0 - 6 - 7_v s_3 - 5 0.777 \pm 0.08$	$4 0.772 \pm 0.059$	0.795 ± 0.067 0.800 ± 0.075	0.819 ± 0.081 0.826 \pm	0.068 0.774 ± 0.068	0.779 ± 0.084	0.743 ± 0.081	0.366 ± 0.320	0.729 ± 0.154
$ecoli - 0 - 6 - 7_v s_5$ 0.828 ± 0.07	$7 = 0.825 \pm 0.087$	$0.816 \pm 0.076 0.827 \pm 0.080$	0.823 ± 0.074 0.835 \pm	0.050 0.812 ± 0.067	0.827 ± 0.079	0.833 ± 0.106	0.363 ± 0.250	0.813 ± 0.124
$glass - 0 - 1 - 4 - 6_v s_2$ 0.487 ± 0.10		0.512 ± 0.136 0.481 ± 0.121	0.520 ± 0.131 0.597 \pm	0.106 0.424 ± 0.113	0.428 ± 0.176	0.362 ± 0.211	0.432 ± 0.067	0.453 ± 0.121
$glass - 0 - 1 - 5_v s_2 0.649 \pm 0.09$	$2 0.508 \pm 0.112$	0.628 ± 0.114 0.679 \pm 0.14	2 0.560 ± 0.113 0.534 ± 0	0.196 0.593 ± 0.112	0.635 ± 0.083	0.486 ± 0.172	0.366 ± 0.165	0.468 ± 0.142
$yeast - 0 - 2 - 5 - 6_v s_3 - 7 - 8 - 9 \ 0.684 \pm 0.05$	0.673 ± 0.070	0.712 ± 0.047 0.685 ± 0.037	0.686 ± 0.045 0.703 ± 0	0.062 0.680 ± 0.048	0.668 ± 0.049	0.564 ± 0.122	0.493 ± 0.054	0.566 ± 0.054
$yeast - 0 - 3 - 5 - 9_v s_7 - 8 \ 0.531 \pm 0.07$	$1 0.568 \pm 0.068$	0.567 ± 0.069 0.576 ± 0.070	0.551 ± 0.068 0.587 ±	0.066 0.561 ± 0.045	0.584 ± 0.050	0.366 ± 0.169	0.153 ± 0.120	0.470 ± 0.107
$abalone - 17_v s_7 - 8 - 9 - 10 \ 0.559 \pm 0.07$	$3 - 0.546 \pm 0.062$	0.557 ± 0.075 0.586 ± 0.075	0.552 ± 0.077 0.605 \pm	0.036 0.562 ± 0.067	0.557 ± 0.066	0.519 ± 0.116	0.417 ± 0.164	0.507 ± 0.070
$abalone - 19_v s_1 0 - 11 - 12 - 13 0.382 \pm 0.14$		0.379 ± 0.154 0.382 ± 0.097	0.300 ± 0.185 0.468 \pm	0.114 0.393 ± 0.092	0.411 ± 0.076	0.200 ± 0.180	0.316 ± 0.183	0.312 ± 0.223
$abalone - 20_v s_8 - 9 - 10 \ 0.634 \pm 0.08$	$1 = 0.371 \pm 0.210$	0.593 ± 0.123 0.611 ± 0.088	0.504 ± 0.132 0.771 \pm	0.078 0.609 ± 0.098	0.634 ± 0.081	0.476 ± 0.171	0.484 ± 0.102	0.485 ± 0.116
$abalone - 21_v s_8 - 0.633 \pm 0.25$	$3 = 0.554 \pm 0.125$	0.604 ± 0.221 0.585 ± 0.241					0.473 ± 0.204	
$flare - F = 0.367 \pm 0.09$		$0.394 \pm 0.110 0.419 \pm 0.093$						0.589 ± 0.146
$kddcup - buffer_overflow_v s_back 1.000 \pm 0.00$		$1.000 \pm 0.000 1.000 \pm 0.000$						1.000 ± 0.000
$kddcup - rootkit - imap_v s_b ack 1.000 \pm 0.00$		$1.000 \pm 0.000 1.000 \pm 0.000$					0.981 ± 0.038	
$kr - vs - k - zero_v s_e ight$ 0.959 ± 0.05		0.963 ± 0.055 0.963 ± 0.055			0.959 ± 0.053		0.697 ± 0.043	
$poker - 8 - 9_v s_5 = 0.386 \pm 0.14$		$0.386 \pm 0.080 0.404 \pm 0.078$					0.330 ± 0.202	
$poker - 8 - 9_v s_6 = 0.595 \pm 0.14$		0.573 ± 0.155 0.529 ± 0.151						0.999 ± 0.001
$poker - 8_v s_6 = 0.569 \pm 0.22$		$0.615 \pm 0.179 0.590 \pm 0.164$					0.924 ± 0.093	
$poker - 9_v s_7 - 0.267 \pm 0.27$		0.267 ± 0.274 0.267 ± 0.274					0.449 ± 0.338	
$winequality - red - 3_v s_5$ 0.132 \pm 0.20		0.088 ± 0.176 0.132 ± 0.202					0.218 ± 0.218	
$winequality - red - 4 0.391 \pm 0.12$		0.458 ± 0.069 0.446 ± 0.078					0.393 ± 0.111	
$winequality - red - 8_v s_6 - 7 \ 0.314 \pm 0.16$		0.327 ± 0.174 0.352 ± 0.188			0.314 ± 0.168		0.201 ± 0.213	
$winequality - red - 8_v s_6 = 0.498 \pm 0.10$		$0.491 \pm 0.099 0.463 \pm 0.187$			0.498 ± 0.107		0.327 ± 0.229	
$winequality - white - 3 - 9_v s_5$ 0.361 \pm 0.20		0.285 ± 0.201 0.319 ± 0.189					0.168 ± 0.137	
$winequality - white - 3_v s_7 = 0.296 \pm 0.16$		0.372 ± 0.208 0.383 ± 0.159			0.296 ± 0.165		0.347 ± 0.249	
$winequality - white - 9_v s_4 = 0.588 \pm 0.32$			0.588 ± 0.329 0.558 ± 0		0.588 ± 0.329		0.263 ± 0.325	
$zoo - 3 - 0.451 \pm 0.39$		$0.496 \pm 0.344 0.480 \pm 0.336$			0.451 ± 0.391		0.321 ± 0.266	
$ecoli1 \ 0.835 \pm 0.06$		0.821 ± 0.056 0.830 ± 0.045			0.857 ± 0.044		0.204 ± 0.285	
$ecoli2 = 0.850 \pm 0.03$			0.842 ± 0.031 0.863 ±				0.275 ± 0.300	
$ecoli3 \ 0.719 \pm 0.06$		$0.748 \pm 0.084 0.754 \pm 0.061$			0.732 ± 0.067		0.262 ± 0.268	
$glass0 0.763 \pm 0.03$		0.765 ± 0.043 0.784 ± 0.035			0.772 ± 0.025	0.740 ± 0.058	0.651 ± 0.093	0.000 ± 0.000
$glass1 0.716 \pm 0.02$		$0.723 \pm 0.058 0.723 \pm 0.060$			0.712 ± 0.036		0.488 ± 0.104	
$haberman 0.564 \pm 0.04$		0.546 ± 0.061 0.531 ± 0.060			0.573 ± 0.056		0.465 ± 0.089	0.000 ± 0.000
$page-blocks0$ 0.915 \pm 0.01		0.913 ± 0.011 0.912 ± 0.008			0.916 ± 0.008		0.891 ± 0.016	
$pima 0.659 \pm 0.02$		0.653 ± 0.022 0.658 ± 0.016			0.664 ± 0.026		0.581 ± 0.055	
$vehicle1 \ 0.649 \pm 0.03$		0.663 ± 0.042 0.654 ± 0.031			0.661 ± 0.021	0.645 ± 0.023	0.645 ± 0.025	
$vehicle3 \ 0.652 \pm 0.02$		0.636 ± 0.027 0.665 ± 0.033			0.653 ± 0.015		0.667 ± 0.026	
$yeast1 = 0.633 \pm 0.02$		0.642 ± 0.019 0.639 ± 0.013			0.628 ± 0.010		0.118 ± 0.016	
$yeast3 = 0.859 \pm 0.03$	$2 0.822 \pm 0.038$	0.858 ± 0.027 0.843 ± 0.017	0.841 ± 0.028 0.855 ± 0	0.030 0.847 ± 0.035	0.862 ± 0.033	0.814 ± 0.035	0.113 ± 0.031	0.000 ± 0.000

Table 5. SVM - G-mean

Dataset name	SMOTE	polynom-fit-SMOTE	Lee	SMOBD	G-SMOTE	IVO-SMOTE	Accombled-SMOTI	E SMOTE-TomekLinks	JFOTS-pr	IFOTS-re	JFOTS-prom
	0.500 ± 0.124	0.397 ± 0.159	0.501 ± 0.119	0.509 ± 0.129		0.618 ± 0.081	0.500 ± 0.124	0.500 ± 0.124	0.569 ± 0.152	0.548 ± 0.125	0.591 ± 0.039
abalone9 - 18		0.649 ± 0.055		0.736 ± 0.051		0.769 ± 0.051	0.723 ± 0.046	0.721 ± 0.064	0.602 ± 0.109	0.638 ± 0.113	
$ecoli - 0 - 1 - 3 - 7_v s_2 - 6$		0.828 ± 0.099	0.821 ± 0.095		0.827 ± 0.100		0.826 ± 0.097	0.826 ± 0.097		0.818 ± 0.140	
$qlass - 0 - 1 - 6_v s_2$		0.660 ± 0.109		0.730 ± 0.089		0.551 ± 0.150	0.732 ± 0.084	0.721 ± 0.121		0.609 ± 0.144	
$glass - 0 - 1 - 6_v s_5$		0.747 ± 0.164	0.791 ± 0.132	0.791 ± 0.132	0.747 ± 0.164		0.791 ± 0.132	0.791 ± 0.132	0.713 ± 0.256	0.841 ± 0.201	0.770 ± 0.191
	0.546 ± 0.287	0.528 ± 0.283	0.554 ± 0.287	0.538 ± 0.284	0.555 ± 0.287	0.593 ± 0.302	0.552 ± 0.291	0.546 ± 0.286	0.550 ± 0.235	0.552 ± 0.163	0.588 ± 0.219
glass4	0.880 ± 0.113	0.827 ± 0.153	0.866 ± 0.136	0.854 ± 0.158	0.859 ± 0.131	0.854 ± 0.136	0.862 ± 0.100	0.880 ± 0.113	0.799 ± 0.090	0.772 ± 0.158	0.783 ± 0.112
glass5	0.786 ± 0.143	0.774 ± 0.139	0.800 ± 0.134	0.800 ± 0.134	0.785 ± 0.143	0.826 ± 0.200	0.786 ± 0.143	0.786 ± 0.143	0.751 ± 0.133	0.848 ± 0.154	0.823 ± 0.153
$page - blocks - 1 - 3_v s_4$	0.891 ± 0.135	0.759 ± 0.097	0.896 ± 0.133	0.895 ± 0.133	0.889 ± 0.144	0.777 ± 0.061	0.873 ± 0.141	0.891 ± 0.135	0.799 ± 0.091	0.853 ± 0.081	0.804 ± 0.168
$yeast - 0 - 5 - 6 - 7 - 9_v s_4$	0.732 ± 0.057	0.716 ± 0.046	0.749 ± 0.047	0.734 ± 0.060	0.730 ± 0.065	0.753 ± 0.037	0.733 ± 0.048	0.729 ± 0.058	0.639 ± 0.098	0.091 ± 0.057	0.678 ± 0.087
$yeast - 1 - 2 - 8 - 9_v s_7$	0.557 ± 0.067	0.510 ± 0.119	0.563 ± 0.075	0.553 ± 0.075	0.567 ± 0.071	0.624 ± 0.106	0.553 ± 0.090	0.564 ± 0.056	0.452 ± 0.120	0.143 ± 0.028	0.510 ± 0.082
$yeast - 1 - 4 - 5 - 8_v s_7$	0.510 ± 0.079	0.480 ± 0.091	0.495 ± 0.076	0.498 ± 0.064	0.507 ± 0.087	0.540 ± 0.073	0.487 ± 0.065	0.510 ± 0.079	0.428 ± 0.156	0.099 ± 0.027	0.533 ± 0.085
	0.672 ± 0.048	0.637 ± 0.060		0.675 ± 0.050			0.664 ± 0.048	0.671 ± 0.049		0.099 ± 0.168	
$yeast - 2_v s_4$	0.863 ± 0.044	0.855 ± 0.046	0.868 ± 0.044	0.869 ± 0.051	0.864 ± 0.052	0.865 ± 0.037	0.862 ± 0.053	0.863 ± 0.044	0.837 ± 0.037	0.282 ± 0.380	0.846 ± 0.060
	0.705 ± 0.063	0.737 ± 0.069	0.718 ± 0.058	0.727 ± 0.059		0.767 ± 0.086	0.705 ± 0.101	0.705 ± 0.063	0.718 ± 0.109	0.184 ± 0.184	0.650 ± 0.111
	0.749 ± 0.040	0.718 ± 0.045		0.753 ± 0.038			0.740 ± 0.030	0.749 ± 0.040		0.113 ± 0.022	
	0.925 ± 0.030	0.922 ± 0.031	0.926 ± 0.030	0.926 ± 0.030		0.940 ± 0.025	0.926 ± 0.030	0.925 ± 0.030			0.818 ± 0.237
	0.832 ± 0.060	0.828 ± 0.057	0.838 ± 0.065			0.860 ± 0.035	0.831 ± 0.063	0.832 ± 0.060		0.186 ± 0.134	
$cleveland - 0_v s_4$		0.590 ± 0.134	0.662 ± 0.149				0.652 ± 0.136	0.652 ± 0.136			
$ecoli - 0 - 1 - 4 - 7_v s_2 - 3 - 5 - 6$		0.840 ± 0.023	0.860 ± 0.034			0.881 ± 0.035	0.865 ± 0.041	0.865 ± 0.036	0.697 ± 0.193	0.358 ± 0.360	0.825 ± 0.085
$ecoli - 0 - 1_v s_2 - 3 - 5$		0.855 ± 0.051	0.854 ± 0.051			0.881 ± 0.055	0.849 ± 0.051	0.843 ± 0.048		0.503 ± 0.416	
$ecoli - 0 - 2 - 6 - 7_v s_3 - 5$		0.826 ± 0.072	0.825 ± 0.066			0.865 ± 0.058	0.821 ± 0.070	0.820 ± 0.064	0.810 ± 0.064		
$ecoli - 0 - 6 - 7_v s_3 - 5$		0.838 ± 0.067		0.845 ± 0.070			0.833 ± 0.071	0.834 ± 0.065		0.552 ± 0.332	
$ecoli - 0 - 6 - 7_v s_5$		0.854 ± 0.049	0.854 ± 0.050	0.850 ± 0.049		0.883 ± 0.050	0.850 ± 0.049	0.853 ± 0.048		0.470 ± 0.323	
$glass - 0 - 1 - 4 - 6_v s_2$		0.582 ± 0.248	0.680 ± 0.158		0.588 ± 0.240		0.678 ± 0.179	0.677 ± 0.149	0.568 ± 0.127		0.577 ± 0.173
$glass - 0 - 1 - 5_v s_2$		0.609 ± 0.103		0.690 ± 0.089			0.660 ± 0.088	0.675 ± 0.079	0.642 ± 0.088		
$yeast - 0 - 2 - 5 - 6_v s_3 - 7 - 8 - 9$		0.749 ± 0.057	0.764 ± 0.036				0.767 ± 0.035	0.768 ± 0.033	0.714 ± 0.063		
$yeast - 0 - 3 - 5 - 9_v s_7 - 8$ $abalone - 17_v s_7 - 8 - 9 - 10$		0.548 ± 0.060 0.709 ± 0.053	0.672 ± 0.045 0.802 ± 0.027			0.610 ± 0.087 0.816 ± 0.028	0.676 ± 0.042 0.810 ± 0.027	0.679 ± 0.045 0.806 ± 0.022		0.160 ± 0.139 0.703 ± 0.104	
$abalone - 11_v s_7 - 8 - 9 - 10$ $abalone - 19_v s_1 0 - 11 - 12 - 13$		0.709 ± 0.033 0.445 ± 0.129	0.802 ± 0.027 0.588 ± 0.098				0.810 ± 0.027 0.574 ± 0.106	0.580 ± 0.022 0.582 ± 0.101		0.703 ± 0.104 0.550 ± 0.116	
$abalone - 19_v s_1 0 - 11 - 12 - 13$ $abalone - 20_v s_8 - 9 - 10$		0.445 ± 0.129 0.747 ± 0.055	0.588 ± 0.098 0.794 ± 0.050				0.574 ± 0.106 0.778 ± 0.069	0.582 ± 0.101 0.789 ± 0.059		0.530 ± 0.116 0.721 ± 0.129	
abalone $-20_v s_8 - 9 - 10$ abalone $-21_v s_8$		0.741 ± 0.033 0.741 ± 0.173	0.756 ± 0.170				0.775 ± 0.005 0.757 ± 0.171	0.757 ± 0.035		0.690 ± 0.160	0.709 ± 0.210
	0.723 ± 0.050	0.630 ± 0.068		0.728 ± 0.060			0.722 ± 0.056	0.723 ± 0.050		0.413 ± 0.119	
$kddcup - buffer_overflow_v s_back$		0.997 ± 0.010		0.993 ± 0.014			0.993 ± 0.014	0.993 ± 0.014		0.997 ± 0.010	
$kddcup - rootkit - imap_ss_ack$				0.933 ± 0.014 0.977 ± 0.023			0.972 ± 0.031	0.977 ± 0.023		0.976 ± 0.045	
$kr - vs - k - zero_v s_v ight$		0.930 ± 0.061		0.934 ± 0.055			0.930 ± 0.061	0.934 ± 0.055		0.697 ± 0.043	
$poker - 8 - 9_v s_5$		0.402 ± 0.185	0.499 ± 0.129			0.624 ± 0.119	0.499 ± 0.103	0.512 ± 0.141		0.527 ± 0.103	
$poker - 8 - 9_v s_6$		0.666 ± 0.072		0.695 ± 0.080			0.689 ± 0.154	0.711 ± 0.092		0.985 ± 0.040	
	0.746 ± 0.101	0.645 ± 0.091	0.746 ± 0.101	0.755 ± 0.089		0.966 ± 0.056	0.755 ± 0.089	0.746 ± 0.101		0.939 ± 0.133	
	0.432 ± 0.296	0.412 ± 0.283		0.432 ± 0.296			0.391 ± 0.267			0.554 ± 0.307	
$winequality - red - 3_vs_s$		0.222 ± 0.222	0.221 ± 0.221	0.221 ± 0.221	0.221 ± 0.221	0.452 ± 0.171	0.266 ± 0.217	0.221 ± 0.221	0.249 ± 0.266	0.354 ± 0.244	0.206 ± 0.258
winequality - red - 4	0.585 ± 0.058	0.528 ± 0.054	0.576 ± 0.057	0.594 ± 0.057	0.559 ± 0.055	0.533 ± 0.057	0.589 ± 0.055	0.584 ± 0.058	0.425 ± 0.101	0.581 ± 0.054	0.569 ± 0.072
$winequality - red - 8_v s_6 - 7$	0.410 ± 0.167	0.333 ± 0.189	0.410 ± 0.167	0.409 ± 0.167	0.323 ± 0.226	0.347 ± 0.197	0.377 ± 0.154	0.410 ± 0.167	0.366 ± 0.211	0.424 ± 0.183	0.385 ± 0.169
$winequality - red - 8_v s_6$	0.517 ± 0.061	0.501 ± 0.049	0.517 ± 0.061	0.517 ± 0.061	0.530 ± 0.060	0.547 ± 0.114	0.537 ± 0.056	0.517 ± 0.061	0.575 ± 0.075	0.560 ± 0.104	0.518 ± 0.191
$winequality - white - 3 - 9_v s_5$	0.382 ± 0.160	0.228 ± 0.197	0.368 ± 0.165	0.374 ± 0.154	0.287 ± 0.161	0.624 ± 0.061	0.364 ± 0.157	0.382 ± 0.160	0.331 ± 0.175	0.461 ± 0.114	0.444 ± 0.113
$winequality - white - 3_v s_7$	0.246 ± 0.209	0.194 ± 0.199	0.292 ± 0.217	0.292 ± 0.216	0.297 ± 0.165	0.713 ± 0.105	0.278 ± 0.194	0.246 ± 0.209	0.395 ± 0.175	0.485 ± 0.246	0.438 ± 0.206
$winequality - white - 9_v s_4$		0.777 ± 0.168	0.777 ± 0.168	0.441 ± 0.452			0.777 ± 0.168	0.777 ± 0.168		0.553 ± 0.373	
zoo-3	0.297 ± 0.377	0.297 ± 0.377	0.297 ± 0.377	0.240 ± 0.373	0.297 ± 0.377	0.139 ± 0.278	0.297 ± 0.377	0.297 ± 0.377		0.359 ± 0.313	
ecoli1	0.884 ± 0.027	0.884 ± 0.020	0.885 ± 0.020	0.883 ± 0.020		0.888 ± 0.015	0.880 ± 0.022	0.884 ± 0.026		0.227 ± 0.328	0.000 ± 0.000
	0.940 ± 0.025	0.931 ± 0.037	0.940 ± 0.025				0.942 ± 0.022	0.938 ± 0.026		0.309 ± 0.346	0.000 ± 0.000
	0.888 ± 0.023	0.892 ± 0.026		0.893 ± 0.018			0.886 ± 0.021	0.892 ± 0.022		0.324 ± 0.356	
	0.772 ± 0.041	0.787 ± 0.020		0.768 ± 0.041			0.786 ± 0.036	0.771 ± 0.037		0.674 ± 0.112	
	0.694 ± 0.041	0.677 ± 0.048	0.680 ± 0.047	0.686 ± 0.036	0.691 ± 0.048		0.687 ± 0.043	0.694 ± 0.047		0.474 ± 0.093	
	0.584 ± 0.042	0.606 ± 0.052	0.596 ± 0.038	0.575 ± 0.055	0.589 ± 0.060		0.596 ± 0.043	0.583 ± 0.046		0.536 ± 0.105	0.000 ± 0.000
page-blocks0		0.897 ± 0.009	0.931 ± 0.007				0.930 ± 0.009	0.931 ± 0.008			0.000 ± 0.000
	0.726 ± 0.030	0.715 ± 0.030		0.725 ± 0.022			0.731 ± 0.028	0.727 ± 0.032		0.639 ± 0.039	
	0.786 ± 0.026	0.741 ± 0.027	0.787 ± 0.026				0.789 ± 0.018	0.789 ± 0.024		0.798 ± 0.017	
	0.786 ± 0.020	0.728 ± 0.020		0.793 ± 0.024 0.706 ± 0.020			0.786 ± 0.017	0.787 ± 0.019		0.782 ± 0.029	
	0.710 ± 0.012	0.678 ± 0.016					0.709 ± 0.013	0.711 ± 0.012		0.118 ± 0.016	
yeast3	0.891 ± 0.024	0.879 ± 0.029	0.692 ± 0.022	0.891 ± 0.028	0.686 ± 0.022	0.695 ± 0.021	0.894 ± 0.025	0.891 ± 0.024	0.860 ± 0.022	0.113 ± 0.031	0.000 ± 0.000

Table 6. KNN – Precision

Dataset name	SMOTE	polynom-fit-SMOTE	Lee	SMOBD	G-SMOTE	LVO-SMOTE	Assembled-SMOTI	E SMOTE-TomekLinks	JFOTS-pr	JFOTS-rc	JFOTS-prom
	0.023 ± 0.017	0.019 ± 0.018	0.023 ± 0.016		0.026 ± 0.018		0.023 ± 0.015	0.023 ± 0.017	0.025 ± 0.030	0.002 ± 0.005	0.008 ± 0.005
abalone9 - 18		0.278 ± 0.044	0.230 ± 0.029	0.233 ± 0.033	0.259 ± 0.042		0.243 ± 0.034	0.246 ± 0.038	0.597 ± 0.184		
$ecoli - 0 - 1 - 3 - 7_v s_2 - 6$	0.378 ± 0.110	0.413 ± 0.150	0.381 ± 0.119	0.371 ± 0.113	0.414 ± 0.151	0.354 ± 0.099	0.374 ± 0.111	0.378 ± 0.110	0.315 ± 0.136	0.303 ± 0.082	0.425 ± 0.239
$qlass - 0 - 1 - 6_v s_2$	0.278 ± 0.099	0.240 ± 0.046	0.271 ± 0.085	0.272 ± 0.084	0.277 ± 0.066	0.211 ± 0.052	0.288 ± 0.094	0.273 ± 0.093	0.239 ± 0.051	0.194 ± 0.128	0.277 ± 0.091
$glass - 0 - 1 - 6_v s_5$	0.689 ± 0.156	0.712 ± 0.154	0.686 ± 0.148	0.686 ± 0.191	0.664 ± 0.174	0.505 ± 0.214	0.676 ± 0.152	0.689 ± 0.156	0.575 ± 0.197	0.438 ± 0.241	0.538 ± 0.289
glass2	0.182 ± 0.110	0.180 ± 0.114	0.176 ± 0.109	0.180 ± 0.102	0.181 ± 0.113		0.170 ± 0.104	0.176 ± 0.105	0.205 ± 0.103		
	0.558 ± 0.133	0.582 ± 0.119			0.550 ± 0.141		0.556 ± 0.128	0.558 ± 0.133		0.366 ± 0.203	
glass5	0.637 ± 0.131	0.679 ± 0.149	0.657 ± 0.165	0.637 ± 0.131	0.669 ± 0.157	0.408 ± 0.138	0.637 ± 0.131	0.637 ± 0.131	0.582 ± 0.190	0.547 ± 0.221	0.505 ± 0.201
$page - blocks - 1 - 3_v s_4$		0.748 ± 0.095					0.778 ± 0.113	0.778 ± 0.098		0.590 ± 0.203	
$yeast - 0 - 5 - 6 - 7 - 9_v s_4$		0.315 ± 0.037	0.307 ± 0.037	0.319 ± 0.040	0.316 ± 0.049	0.331 ± 0.053	0.308 ± 0.045	0.300 ± 0.040	0.472 ± 0.122		
$yeast - 1 - 2 - 8 - 9_v s_7$		0.118 ± 0.023			0.114 ± 0.036	0.099 ± 0.022	0.094 ± 0.018	0.095 ± 0.017	0.346 ± 0.235		
$yeast - 1 - 4 - 5 - 8_v s_7$		0.093 ± 0.032	0.092 ± 0.019			0.080 ± 0.022	0.089 ± 0.017	0.091 ± 0.016	0.096 ± 0.067		
$yeast-1_vs_7$		0.216 ± 0.037	0.201 ± 0.020		0.213 ± 0.042	0.192 ± 0.024	0.188 ± 0.035	0.200 ± 0.027	0.363 ± 0.136		
$yeast - 2_v s_4$		0.609 ± 0.085			0.634 ± 0.070	0.616 ± 0.076	0.647 ± 0.078	0.672 ± 0.073	0.848 ± 0.053		
$yeast - 2_v s_8$		0.500 ± 0.084	0.261 ± 0.088	0.260 ± 0.075	0.347 ± 0.101	0.309 ± 0.042	0.256 ± 0.075	0.270 ± 0.085	0.661 ± 0.293		
	0.200 ± 0.029	0.215 ± 0.030 0.529 ± 0.071		0.207 ± 0.035 0.496 ± 0.060	0.217 ± 0.034 0.522 ± 0.068	0.172 ± 0.020 0.382 ± 0.060	0.211 ± 0.033	0.200 ± 0.029 0.503 ± 0.074	0.430 ± 0.080 0.641 ± 0.145		
	0.504 ± 0.073 0.225 ± 0.035	0.529 ± 0.071 0.277 ± 0.041	0.499 ± 0.070 0.228 ± 0.039	0.496 ± 0.060 0.221 ± 0.038		0.382 ± 0.060 0.150 ± 0.027	0.493 ± 0.062 0.224 ± 0.040	0.503 ± 0.074 0.226 ± 0.035	0.641 ± 0.145 0.475 ± 0.126		
$cleveland - 0_v s_4$		0.277 ± 0.041 0.584 ± 0.121			0.264 ± 0.038 0.653 ± 0.105		0.224 ± 0.040 0.600 ± 0.131	0.596 ± 0.055		0.386 ± 0.239	
$ecoli - 0 - 1 - 4 - 7_v s_2 - 3 - 5 - 6$		0.619 ± 0.087	0.559 ± 0.134 0.551 ± 0.075	0.574 ± 0.121 0.572 ± 0.082	0.559 ± 0.090	0.532 ± 0.085	0.545 ± 0.103	0.559 ± 0.092	0.751 ± 0.091		
$ecoli - 0 - 1 - 4 - 1_v s_2 - 3 - 3 - 0$ $ecoli - 0 - 1_v s_2 - 3 - 5$		0.756 ± 0.148		0.724 ± 0.052 0.724 ± 0.150		0.669 ± 0.162	0.691 ± 0.134	0.729 ± 0.155	0.801 ± 0.051		
$ecoli - 0 - 2 - 6 - 7_v s_3 - 5$		0.612 ± 0.110	0.576 ± 0.136	0.630 ± 0.140	0.586 ± 0.125		0.577 ± 0.126	0.575 ± 0.117	0.821 ± 0.132 0.822 ± 0.124		
$ecoli - 0 - 2 - 0 - 7_v s_3 - 5$		0.645 ± 0.128			0.614 ± 0.117		0.609 ± 0.132	0.619 ± 0.133	0.808 ± 0.092		
$ecoli - 0 - 6 - 7_v s_5$		0.670 ± 0.120 0.670 ± 0.189	0.642 ± 0.199	0.655 ± 0.204			0.645 ± 0.210	0.645 ± 0.201	0.816 ± 0.149		
alass - 0 - 1 - 4 - 6 - 82		0.241 ± 0.085	0.231 ± 0.091	0.230 ± 0.085	0.230 ± 0.101	0.203 ± 0.063	0.231 ± 0.091	0.235 ± 0.081		0.136 ± 0.130	
$glass - 0 - 1 - 5_v s_2$		0.235 ± 0.065			0.246 ± 0.087		0.239 ± 0.056	0.225 ± 0.049		0.200 ± 0.148	
yeast - 0 - 2 - 5 - 6 - 8 - 7 - 8 - 9		0.368 ± 0.033	0.330 ± 0.023	0.336 ± 0.033	0.356 ± 0.025	0.379 ± 0.058	0.332 ± 0.033	0.334 ± 0.028	0.534 ± 0.137	0.187 ± 0.205	0.464 ± 0.090
$yeast - 0 - 3 - 5 - 9_v s_7 - 8$		0.281 ± 0.053		0.245 ± 0.046	0.263 ± 0.042		0.241 ± 0.030	0.252 ± 0.041		0.040 ± 0.120	
$abalone - 17_v s_7 - 8 - 9 - 10$		0.281 ± 0.044	0.191 ± 0.030	0.187 ± 0.028	0.231 ± 0.043	0.210 ± 0.032	0.194 ± 0.033	0.190 ± 0.033	0.325 ± 0.063	0.156 ± 0.115	0.147 ± 0.111
$abalone - 19_v s_1 0 - 11 - 12 - 13$		0.056 ± 0.018	0.049 ± 0.012	0.049 ± 0.014	0.048 ± 0.025	0.047 ± 0.017	0.044 ± 0.014	0.047 ± 0.012	0.056 ± 0.036	0.016 ± 0.015	0.035 ± 0.036
$abalone - 20_v s_8 - 9 - 10$	0.164 ± 0.028	0.189 ± 0.051	0.169 ± 0.033	0.171 ± 0.031	0.166 ± 0.049	0.118 ± 0.029	0.167 ± 0.034	0.161 ± 0.028	0.284 ± 0.154	0.041 ± 0.052	0.188 ± 0.149
$abalone - 21_v s_8$		0.520 ± 0.162	0.418 ± 0.108		0.485 ± 0.165		0.400 ± 0.098	0.437 ± 0.122			0.566 ± 0.187
	0.202 ± 0.038	0.209 ± 0.028			0.209 ± 0.039		0.206 ± 0.046	0.197 ± 0.032	0.369 ± 0.253		
$kddcup - buffer_overflow_v s_back 1$					1.000 ± 0.000		1.000 ± 0.000	1.000 ± 0.000		0.994 ± 0.019	
$kddcup - rootkit - imap_v s_back 1$					1.000 ± 0.000		1.000 ± 0.000	1.000 ± 0.000			1.000 ± 0.000
$kr - vs - k - zero_v s_e ight$		0.765 ± 0.172			0.758 ± 0.164		0.740 ± 0.155	0.730 ± 0.153		0.000 ± 0.000	
$poker - 8 - 9_v s_5$		0.091 ± 0.037	0.066 ± 0.029	0.064 ± 0.029	0.055 ± 0.045		0.069 ± 0.027	0.065 ± 0.026		0.017 ± 0.035	
$poker - 8 - 9_v s_6$		0.466 ± 0.080	0.426 ± 0.058	0.435 ± 0.064			0.434 ± 0.092	0.428 ± 0.060	1.000 ± 0.000		
$poker - 8_v s_6$		0.341 ± 0.111	0.308 ± 0.075	0.297 ± 0.072	0.350 ± 0.102	0.267 ± 0.049	0.314 ± 0.085	0.310 ± 0.074	1.000 ± 0.000		
$poker - 9_v s_7$		0.507 ± 0.234	0.495 ± 0.226	0.523 ± 0.267			0.532 ± 0.241	0.497 ± 0.228		0.698 ± 0.389	
$winequality - red - 3_v s_5$		0.095 ± 0.058		0.080 ± 0.045			0.088 ± 0.050	0.081 ± 0.045		0.008 ± 0.023	
winequality - red - 4		0.080 ± 0.023	0.081 ± 0.018	0.080 ± 0.012	0.096 ± 0.025 0.042 ± 0.026	0.085 ± 0.023	0.084 ± 0.015	0.082 ± 0.015	0.116 ± 0.063		0.082 ± 0.037 0.049 ± 0.039
winequality $- red - 8_v s_6 - 7$ winequality $- red - 8_v s_6$		0.040 ± 0.029 0.108 ± 0.036	0.033 ± 0.023 0.087 ± 0.023	0.033 ± 0.024 0.089 ± 0.019	0.042 ± 0.026 0.092 ± 0.038	0.040 ± 0.030 0.094 ± 0.036	0.035 ± 0.020 0.097 ± 0.037	0.031 ± 0.024 0.090 ± 0.019			0.049 ± 0.039 0.125 ± 0.084
winequality $-$ rea $ s_v s_6$ winequality $-$ white $-$ 3 $-$ 9 $_v s_5$		0.108 ± 0.036 0.097 ± 0.030		0.089 ± 0.019 0.066 ± 0.017	0.092 ± 0.038 0.082 ± 0.027	0.094 ± 0.036 0.136 ± 0.074	0.097 ± 0.037 0.060 ± 0.016	0.090 ± 0.019 0.068 ± 0.019	0.099 ± 0.049 0.158 ± 0.284		
winequality – white – $3 = 5_0 s_5$ winequality – white – $3_0 s_7$		0.100 ± 0.065		0.105 ± 0.067			0.000 ± 0.010 0.114 ± 0.068	0.112 ± 0.065		0.024 ± 0.019 0.110 ± 0.078	
winequality – white – $9_v s_4$ winequality – white – $9_v s_4$		0.536 ± 0.319	0.514 ± 0.337	0.421 ± 0.392	0.516 ± 0.335		0.514 ± 0.337	0.514 ± 0.337		0.165 ± 0.129	
	0.460 ± 0.260				0.460 ± 0.260		0.460 ± 0.260	0.460 ± 0.260		0.253 ± 0.238	
	0.700 ± 0.057	0.713 ± 0.065		0.710 ± 0.004	0.700 ± 0.054	0.700 ± 0.056	0.691 ± 0.046	0.697 ± 0.055		0.139 ± 0.280	
	0.692 ± 0.080	0.751 ± 0.089	0.687 ± 0.100	0.693 ± 0.088	0.725 ± 0.073	0.669 ± 0.064	0.689 ± 0.090	0.690 ± 0.079		0.193 ± 0.209	
	0.475 ± 0.036	0.482 ± 0.036			0.475 ± 0.040	0.424 ± 0.034	0.476 ± 0.035	0.473 ± 0.037	0.539 ± 0.072		
	0.608 ± 0.053	0.611 ± 0.056	0.599 ± 0.038	0.606 ± 0.043		0.608 ± 0.055	0.616 ± 0.050	0.614 ± 0.054		0.508 ± 0.204	
	0.614 ± 0.061	0.620 ± 0.068		0.634 ± 0.053		0.633 ± 0.042	0.616 ± 0.048	0.616 ± 0.064		0.444 ± 0.196	
	0.366 ± 0.033	0.400 ± 0.035	0.348 ± 0.032	0.355 ± 0.015	0.359 ± 0.040	0.362 ± 0.029	0.348 ± 0.021	0.364 ± 0.035	0.435 ± 0.065		
page-blocks0		0.804 ± 0.021	0.732 ± 0.026	0.750 ± 0.029	0.738 ± 0.015		0.728 ± 0.025	0.732 ± 0.024		0.757 ± 0.034	
	0.549 ± 0.026	0.586 ± 0.019	0.554 ± 0.013	0.552 ± 0.019	0.549 ± 0.022	0.569 ± 0.027	0.553 ± 0.019	0.556 ± 0.029	0.601 ± 0.031	0.491 ± 0.075	0.000 ± 0.000
	0.476 ± 0.020	0.516 ± 0.027	0.476 ± 0.023		0.486 ± 0.018	0.496 ± 0.029	0.487 ± 0.022	0.477 ± 0.021		0.493 ± 0.029	
vehicle3	0.470 ± 0.028	0.474 ± 0.037	0.473 ± 0.026	0.471 ± 0.028	0.472 ± 0.024	0.470 ± 0.029	0.467 ± 0.026	0.468 ± 0.029	0.534 ± 0.037	0.476 ± 0.034	0.000 ± 0.000
	0.473 ± 0.013	0.541 ± 0.013			0.469 ± 0.012		0.472 ± 0.013	0.475 ± 0.012		0.000 ± 0.000	
yeast3	0.589 ± 0.026	0.626 ± 0.034	0.587 ± 0.042	0.589 ± 0.036	0.598 ± 0.034	0.583 ± 0.043	0.580 ± 0.035	0.587 ± 0.025	0.752 ± 0.048	0.000 ± 0.000	0.000 ± 0.000

Table 7. CART – Recall

Control Cont	Dataset name		polynom-fit-SMOTE	Lee	SMOBD				SMOTE-TomekLinks	JFOTS-pr		JFOTS-prom
$ \begin{array}{c} cols - 0 - 1 - 3 - 7 - p_{1} = 0.600 \pm 0.232 \\ glass - 0 - 1 - 6.5 p_{1} = 0.55 \\ glass - 0 - 1 - 6.5 p_{2} = 0.55 \\ glass - 0 - 1 - 6.5 p_{3} = 0.55 \\ glass - 0 - 1 - 6.5 p_{4} = 0.55 \\ glass - 0 - 1 - 6.5 p_{4} = 0.55 \\ glass - 0 - 1 - 6.5 p_{4} = 0.55 \\ glass - 0 - 1 - 6.5 p_{4} = 0.55 \\ glass - 0 - 1 - 1 - 6.5 p_{4} = 0.55 \\ glass - 1 - 2 - 1 - 2 - 5 p_{4} = 0.55 \\ glass - 1 - 2 - 2 - 5 p_{4} = 0.55 \\ glass - 1 - 2 - 2 - 5 p_{4} = 0.55 \\ glass - 1 - 2 - 2 - 5 p_{4} = 0.55 \\ glass - 1 - 2 - 2 - 5 p_{4} = 0.55 \\ glass - 1 - 2 - 2 - 5 p_{4} = 0.55 \\ glass - 1 - 2 - 2 - 5 p_{4} = 0.55 \\ glass - 1 - 2 - 2 - 5 p_{4} = 0.05 \\ glass - 1 - 2 - 2 - 5 p_{4} = 0.05 \\ glass - 1 - 2 - 2 - 5 p_{4} = 0.05 \\ glass - 1 - 2 - 2 - 5 p_{4} = 0.05 \\ glass - 1 - 2 - 2 - 5 p_{4} = 0.05 \\ glass - 1 - 2 - 2 - 5 p_{4} = 0.05 \\ glass - 1 - 2 - 2 - 5 p_{4} = 0.05 \\ glass - 1 - 2 - 2 - 5 p_{4} = 0.05 \\ glass - 1 - 2 - 2 - 5 p_{4} = 0.05 \\ glass - 1 - 2 - 2 - 5 p_{4} = 0.05 \\ glass - 1 - 2 - 2 - 5 p_{4} = 0.05 \\ glass - 1 - 2 - 2 - 5 p_{4} = 0.05 \\ glass - 1 - 2 - 2 - 5 p_{4} = 0.05 \\ glass - 1 - 2 - 2 - 5 p_{4} = 0.05 \\ glass - 1 - 2 - 2 - 5 p_{4} = 0.05 \\ glass - 1 - 2 - 2 - 5 p_{4} = 0.05 \\ glass - 1 - 2 - 2 - 5 p_{4} = 0.05 \\ glass - 1 - 2 - 2 - 5 p_{4} = 0.05 \\ glass - 1 - 2 - 2 - 5 p_{4} = 0.05 \\ glass - 1 - 2 - 5 p_{4} = 0.05 \\ glass - 1 - 2 - 5 p_{4} = 0.05 \\ glass - 1 - 2 - 5 p_{4} = 0.05 \\ glass - 1 - 2 - 5 p_{4} = 0.05 \\ glass - 1 - 2 - 5 p_{4} = 0.05 \\ glass - 1 - 2 - 5 p_{4} = 0.05 \\ glass - 1 - 2 - 5 p_{4} = 0.05 \\ glass - 1 - 2 - 5 p_{4} = 0.05 \\ glass - 1 - 2 - 5 p_{4} = 0.05 \\ glass - 1 - 2 - 5 p_{4} = 0.05 \\ glass - 1 - 2 - 5 p_{4} = 0.05 \\ glass - 1 - 2 - 5 p_{4} = 0.05 \\ glass - 1 - 2 - 5 p_{4} = 0.05 \\ glass - 1 - 2 - 2 p_{4} = 0.05 \\ glass - 1 - 2 - 2 p_{4} = 0.05 \\ glass - 1 - 2 - 2 p_{4} = 0.05 \\ glass - 1 - 2 - 2 p_{4} = 0.05 \\ glass - 1 - 2 p_{4} = 0.05 \\ glass - 1 - 2 p_{4} = 0.05 \\ glass - 1 - 2 p_{4} = 0.05 \\ glass - 1 - 2 p_{4} = 0.05 \\ glass - 1 - 2 p_{4} = 0.05 \\ glass - 1 - 2 p_{4} = 0.05 \\ glass $				0.131 ± 0.081								
$plass = 0 - 1 - 1 - 6 - 5 - 9 \cdot 3007 \pm 0.11 \\ plass = 0 - 1 - 6 - 5 \cdot 9 \cdot 307 \pm 0.273 \\ plass = 0 - 1 - 6 - 5 \cdot 9 \cdot 50 \pm 0.273 \\ plass = 0 - 1 - 6 \cdot 9 \cdot 5 \cdot 9 \cdot 20 \cdot 30 \cdot 30 \cdot 20 \cdot 30 \cdot 30 \cdot 30 \cdot 30$												
glack 2075 0.222 0.231 ± 0.109 0.239 ± 0.199 0.312 ± 0.18 0.274 ± 0.286 0.331 ± 0.108 0.479 ± 0.286 0.331 ± 0.108 0.479 ± 0.286 0.331 ± 0.108 0.479 ± 0.286 0.331 ± 0.108 0.479 ± 0.286 0.331 ± 0.108 0.479 ± 0.286 0.331 ± 0.108 0.479 ± 0.286												
glass 0.740 ± 0.165 0.770 ± 0.166 0.720 ± 0.166 0.725 ± 0.161 0.875 ± 0.151 0.881 ± 0.187 0.890 ± 0.221 0.990 ± 0.080												
Page												
$p_{post} - p_{bot} color - 1 - A_{s}, \ 0.043 \pm 0.119 \\ p_{gradt} - 1 - 2 - S_{s} - 0.084 \pm 0.139 \\ p_{gradt} - 1 - 2 - S_{s} - 0.087 \pm 0.015 \\ p_{gradt} - 1 - 2 - S_{s} - 0.087 \pm 0.015 \\ p_{gradt} - 1 - 2 - S_{s} - 0.087 \pm 0.015 \\ p_{gradt} - 1 - 2 - S_{s} - 0.087 \pm 0.015 \\ p_{gradt} - 1 - 2 - S_{s} - 0.087 \pm 0.015 \\ p_{gradt} - 1 - 2 - S_{s} - 0.087 \pm 0.015 \\ p_{gradt} - 1 - 2 - S_{s} - 0.087 \pm 0.015 \\ p_{gradt} - 1 - 2 - S_{s} - 0.087 \pm 0.015 \\ p_{gradt} - 1 - 2 - S_{s} - 0.087 \pm 0.015 \\ p_{gradt} - 1 - 2 - S_{s} - 0.087 \pm 0.015 \\ p_{gradt} - 1 - 2 - S_{s} - 0.087 \pm 0.015 \\ p_{gradt} - 1 - 2 - S_{s} - 0.087 \pm 0.015 \\ p_{gradt} - 1 - 2 - S_{s} - 0.087 \pm 0.015 \\ p_{gradt} - 1 - 2 - S_{s} - 0.087 \pm 0.015 \\ p_{gradt} - 0.081 \pm 0.015 \\ p_{gradt} - 0.085 \pm 0.015 \\ p_{gradt} - $												
post - 1 - 2 - 8 - 9 - 8 - 9 - 1 - 4 - 5 - 8 - 7 - 6 - 8 - 1 - 9 - 6 - 8 - 9 - 6 - 9 - 6 - 9 - 6 - 8 - 9 - 6 - 9 -												
$ poset - 1 - 2 - 8 - 9 - 9 - (247 \pm 0.096) \\ poset - 1 - 4 - 6 - 8 - 9 - (1047 \pm 0.005) \\ poset - 1 - 1 - 6 - 10 - 10 - 10 - 10 - 10 - $												
$ \begin{aligned} & & & & & & & & & & & & & & & & & & $												
$ \begin{array}{c} p_{coad} - 1_{erg} & 0.320 \pm 0.111 \\ p_{coad} - 2_{erg} & 0.320 \pm 0.111 \\ p_{coad} - 2_{erg} & 0.530 \pm 0.102 \\ p_{coad} - 2_{erg} & 0.530 \pm 0.105 \\ p_{$												
$pacad - 2_{-84} \ 0.711 \pm 0.098 \ 0.718 \pm 0.114 \ 0.799 \pm 0.083 \ 0.762 \pm 0.117 \ 0.756 \pm 0.118 \ 0.799 \pm 0.083 \ 0.762 \pm 0.117 \ 0.550 \pm 0.136 \ 0.000 \pm 0.228 \ 0.000 \ 0.228 \pm 0.102 \ 0.377 \pm 0.000 \ 0.709 \pm 0.116 \ 0.500 \pm 0.104 \ 0.550 \pm 0.136 \ 0.500 \pm 0.028 \ 0.000 \pm 0.000 \ 0.000 \pm 0.000 \ 0.0000 \ 0.0000 \ 0.0000 \ 0.0000 \ 0.0000 \ 0.0000 \ 0.0000 \ 0.0000 \ 0.0000 \ 0.0000 \ $												
$\begin{array}{c cccl} paral - 2 + s_1 & 0.509 \pm 0.185 \\ paral 4 & 0.015 \pm 0.018 \\ paral 4 & 0.015 \pm 0.018 \\ paral 4 & 0.015 \pm 0.013 \\ paral 5 & 0.736 \pm 0.018 $												
$ \begin{array}{c} pand 0 & 0.01 \pm 0.006 \\ pand 5 & 0.736 \pm 0.110 \\ pand 5 & 0.736 \pm 0.110 \\ pand 5 & 0.736 \pm 0.110 \\ pand 5 & 0.736 \pm 0.112 \\ pand 5 & 0.495 \pm 0.113 \\ pand 5 & 0.495 \pm 0.112 \\ pand 5 & 0.495 \pm 0.120 \\ pand 5 & 0.495$												
$\begin{array}{c} past 5 & 0.736 \pm 0.149 & 0.736 \pm 0.149 & 0.736 \pm 0.129 & 0.732 \pm 0.139 & 0.722 \pm 0.139 & 0.752 \pm 0.018 & 0.756 \pm 0.017 & 0.755 \pm 0.017 & 0.655 \pm 0.006 & 0.004 \pm 0.001 & 0.661 \pm 0.119 & 0.517 \pm 0.008 & 0.001 \pm 0.001 & 0.000 & 0.661 \pm 0.119 & 0.517 \pm 0.008 & 0.001 \pm 0.001 & 0.000 & 0.610 \pm 0.001 & 0.001 & 0.000 & 0.001 & 0.001 & 0.000 & 0.001 & 0.001 & 0.000 & 0.000 & 0.001 & 0.001 & 0.000 & 0.000 & 0.001 & 0.001 & 0.000 & 0.000 & 0.001 & 0.000 $												
$\frac{p_{cont} o 0.99 \pm 0.135}{cevel and -0.68, 0.88 \pm 0.115} 0.531 \pm 0.099 \\ 0.681 \pm 0.115 \\ 0.681 \pm 0.110 \\ 0.681 \pm 0.115 \\ 0.681 \pm 0.115 \\ 0.681 \pm 0.125 \\ 0.$												
$ cols = 0 - 1 - 4 - 7 + 5 - 9 - 5 - 6 - 6 0.48 \pm 0.115 \\ cols = 0 - 1 - 4 - 7 + 5 - 9 - 3 - 5 \\ cols = 0 - 1 - 4 - 7 + 5 - 9 - 3 - 5 \\ cols = 0 - 1 - 4 - 7 + 5 - 9 - 3 - 5 \\ cols = 0 - 1 - 5 \\ cols = 0 - 1 - 5 + 5 \\ cols = 0 - 6 0.48 \pm 0.115 \\ cols = 0 - 2 - 6 - 7 + 5 - 5 \\ cols = 0 - 5 \\ cols = 0 - 1 - 5 \\ cols = 0 - 5 \\ cols = 0 - 2 - 6 - 7 + 5 \\ cols = 0 - 5 \\ cols = 0 - 1 \\ cols = 0 - 2 - 6 - 7 + 5 \\ cols = 0 - 5 \\ cols = 0 - 1 \\ cols = 0 - 6 - 7 + 5 \\ cols = 0 - 5 \\ cols = 0 - 6 \\ cols = 0 \\ cols = $												
$coli - 0 - 1 - 4 - 7 \cdot s_2 - 3 - 5 - 6 0.618 \pm 0.134 0.681 \pm 0.089 0.669 \pm 0.039 0.690 \pm 0.039 0.091 \pm 0.139 0.012 \pm 0.100 0.072 \pm 0.101 0.675 \pm 0.129 0.561 \pm 0.029 0.661 \pm 0.219 0.143 \pm 0.180 0.540 \pm 0.11 0.681 \pm 0.129 0.682 \pm 0.120 0.535 \pm 0.083 0.682 \pm 0.121 0.555 \pm 0.122 0.555 \pm 0.122 0.555 \pm 0.106 0.582 \pm 0.136 0.682 \pm 0.121 0.682 \pm 0.121 0.685 \pm 0.121 0.685 \pm 0.106 0.582 \pm 0.136 0.682 \pm 0.121 0.682 \pm 0.121 0.685 \pm 0.106 0.582 \pm 0.116 0.682 \pm 0.121 0.685 \pm 0.106 0.582 \pm 0.116 0.682 \pm 0.121 0.685 \pm 0.106 0.582 \pm 0.116 0.682 \pm 0.121 0.682 \pm 0.121 0.685 \pm 0.106 0.582 \pm 0.116 0.682 \pm 0.121 0.682 \pm 0.121 0.685 \pm 0.106 0.582 \pm 0.116 0.682 \pm 0.121 0.682 \pm 0.121 0.685 \pm 0.106 0.582 \pm 0.116 0.682 \pm 0.121 0.682 \pm 0.121 0.685 \pm 0.106 0.582 \pm 0.116 0.682 \pm 0.121 0.682 \pm 0.121 0.685 \pm 0.106 0.582 \pm 0.121 0.685 \pm 0.106 0.582 \pm 0.121 0.685 \pm 0.106 0.582 \pm 0.121 0.682 \pm 0.121 0.68$												
$ coil - 0 - 1_{sep} - 3 - 5 \ 0.612 \pm 0.129 \ 0.6812 \pm 0.214 \ 0.688 \pm 0.129 \ 0.585 \pm 0.129 \ 0.585 \pm 0.129 \ 0.682 \pm 0.117 \ 0.7010 \pm 0.163 \ 0.7010 \pm 0.113 \ 0.7010 \pm 0.11$												
$ \begin{array}{c} cecli = 0 - 2 - 6 - 6 - 7 + 8 - 5 & 0.655 \pm 0.106 \\ cecli = 0 - 6 - 7 + 8 - 8 & 0.055 \pm 0.116 \\ cecli = 0 - 6 - 7 + 8 - 8 & 0.055 \pm 0.112 \\ cecli = 0 - 6 - 7 + 8 - 8 & 0.725 \pm 0.112 \\ cecli = 0 - 6 - 7 + 8 - 8 & 0.725 \pm 0.112 \\ cecli = 0 - 6 - 7 + 8 - 8 & 0.022 \pm 0.115 \\ cecli = 0 - 2 - 8 + 6 & 0.022 \pm 0.115 \\ cecli = 0 - 2 - 8 + 6 & 0.022 \pm 0.115 \\ cecli = 0 - 2 - 8 + 6 & 0.022 \pm 0.115 \\ cecli = 0 - 2 - 8 + 6 & 0.022 \pm 0.115 \\ cecli = 0 - 2 - 8 + 6 & 0.022 \pm 0.115 \\ cecli = 0 - 2 - 8 + 6 & 0.022 \pm 0.078 \\ cecli = 0 - 2 - 8 + 6 & 0.022 \pm 0.078 \\ cecli = 0 - 2 - 8 + 6 & 0.022 \pm 0.078 \\ cecli = 0 - 2 - 8 + 6 & 0.032 \pm 0.080 \\ cecli = 0 - 2 - 8 + 6 & 0.032 \pm 0.080 \\ cecli = 0 - 2 - 8 + 6 & 0.032 \pm 0.080 \\ cecli = 0 - 2 - 8 + 6 & 0.032 \pm 0.080 \\ cecli = 0 - 2 - 8 + 6 & 0.032 \pm 0.080 \\ cecli = 0 - 2 - 8 + 6 & 0.032 \pm 0.080 \\ cecli = 0 - 2 - 8 + 6 & 0.032 \pm 0.080 \\ cecli = 0 - 2 - 8 + 6 & 0.032 \pm 0.080 \\ cecli = 0 - 2 - 8 + 6 & 0.032 \pm 0.080 \\ cecli = 0 - 2 - 8 + 6 & 0.032 \pm 0.080 \\ cecli = 0 - 2 - 8 + 6 & 0.032 \pm 0.080 \\ cecli = 0 - 2 - 8 + 6 & 0.032 \pm 0.080 \\ cecli = 0 - 2 - 8 + 6 & 0.032 \pm 0.080 \\ cecli = 0 - 2 - 8 + 6 & 0.032 \pm 0.080 \\ cecli = 0 - 0.032 $												
$ coil - 0 - 6 - 7 + 8 - 5 & 0.855 \pm 0.140 \\ coil - 0 - 6 - 7 + 8 - 5 & 0.855 \pm 0.140 \\ coil - 0 - 6 - 7 + 8 - 5 & 0.725 \pm 0.135 \\ coil - 0 - 6 - 7 + 8 - 5 & 0.725 \pm 0.135 \\ coil - 0 - 6 - 7 + 8 - 5 & 0.725 \pm 0.108 \\ coil - 0 - 6 - 7 + 8 - 5 & 0.725 \pm 0.108 \\ coil - 0 - 6 - 7 + 8 - 5 & 0.725 \pm 0.108 \\ coil - 0 - 6 - 7 + 8 - 5 & 0.725 \pm 0.108 \\ coil - 0 - 6 - 7 + 8 - 5 & 0.725 \pm 0.108 \\ coil - 0 - 6 - 7 + 8 - 5 & 0.725 \pm 0.108 \\ coil - 0 - 1 - 1 - 1 - 1 - 1 - 1 \\ coil - 0 - 1 - 1 - 1 - 1 - 1 - 1 \\ coil - 0 - 1 - 1 - 1 - 1 - 1 \\ coil - 0 - 1 - 1 - 1 - 1 - 1 \\ coil - 0 - 1 - 1 - 1 - 1 \\ coil - 0 - 1 - 1 - 1 - 1 \\ coil - 0 - 1 - 1 - 1 - 1 \\ coil - 0 - 1 - 1 - 1 - 1 \\ coil - 0 - 1 - 1 - 1 - 1 \\ coil - 0 - 1 - 1 - 1 - 1 \\ coil - 0 - 1 - 1 - 1 - 1 \\ coil - 0 - 1 - 1 - 1 - 1 \\ coil - 0 - 1 - 1 - 1 - 1 \\ coil - 0 - 1 - 1 - 1 - 1 \\ coil - 0 - 1 - 1 - 1 - 1 \\ coil - 0 - 1 - 1 - 1 \\ coil - 0 - 1 - 1 - 1 \\ coil - 0 - 1 - 1 - 1 \\ coil - 0 - 1 - 1 - 1 \\ coil - 0 - 1 - 1 - 1 \\ coil - 0 - 1 - 1 - 1 \\ coil - 0 - 1 - 1 - 1 \\ coil - 0 - 1 - 1 - 1 \\ coil - 0 - 1 - 1 - 1 \\ coil - 0 - 1 - 1 - 1 \\ coil - 0 - 1 \\ coil - 0 - 1 - 1 \\ coil - 0 - 1 \\ coil - 0$												
$ coll - 0 - 6 - 7 - 8 \\ coll - 0 - 6 - 7 - 8 \\ coll - 0 - 6 - 7 - 8 \\ coll - 0 - 6 - 7 - 8 \\ coll - 0 - 2 \\ coll - 0 \\ coll - 0 - 2 \\ coll - 0 $												
$glass - 0 - 1 - 4 - 6.s_2 \ 0.272 \pm 0.108 \ 0.322 \pm 0.107 \ 0.301 \pm 0.128 \ 0.322 \pm 0.107 \ 0.301 \pm 0.128 \ 0.302 \pm 0.005 \ 0.502 \pm 0.213 \ 0.318 \pm 0.014 \ 0.417 \pm 0.138 \ 0.011 \pm 0.119 \ 0.457 \pm 0.129 \ 0.235 \pm 0.129 \ 0.129 \pm 0.118 \ 0.403 \pm 0.335 \pm 0.009 \ 0.303 \pm 0.000 \ 0.303 \pm 0.000 \ 0.505 \pm 0.120 \ 0.505 \pm $												
$past = 0 - 2 - 5 - 6, s_9 - 7 - 8 - 9 \ 0.522 \pm 0.078 \ 0.499 \pm 0.075 \ 0.356 \pm 0.180 \ 0.505 \ 0.182 \ 0.056 \ 0.585 \pm 0.056 \ 0.555 \pm 0.126 \ 0.633 \pm 0.151 \ 0.242 \pm 0.09 \ 0.305 \pm 0.086 \ 0.305 \pm 0.086$												
$ \begin{aligned} & post - 0 - 3 - 5 - 9 s, r - 8 & 0.336 \pm 0.086 \\ & absime - 17 s, r - 8 - 9 - 10 & 0.334 \pm 0.086 \\ & absime - 13 s, s - 0 - 11 & 0.334 \pm 0.086 \\ & absime - 10 - 12 s, r - 8 - 9 - 10 & 0.334 \pm 0.086 \\ & absime - 10 - 12 s, r - 8 - 9 - 10 & 0.334 \pm 0.086 \\ & absime - 10 - 12 s, r - 9 - 10 & 0.334 \pm 0.086 \\ & absime - 10 - 12 s, r - 10 & 0.184 \\ & absime - 10 - 12 s, r - 10 & 0.184 \\ & absime - 10 - 12 s, r - 10 & 0.184 \\ & absime - 10 - 12 s, r - 10 & 0.184 \\ & absime - 10 - 12 s, r - 10 & 0.184 \\ & absime - 10 - 12 s, r - 10 & 0.184 \\ & absime - 12 s, r - 10 & 0.184 \\ & absime - 12 s, r - 10 & 0.184 \\ & absime - 12 s, r - 10 & 0.184 \\ & absime - 12 s, r - 10 & 0.184 \\ & absime - 12 s, r - 10 & 0.184 \\ & absime - 12 s, r - 10 \\ & ab$												
$ \frac{ablame - 17.s_7 - s - 9 - 10}{ablame - 19.s_7 - s - 9 - 10} 0.334 \pm 0.089 \\ ablame - 9.s_8 - 9 - 11 0.123 \pm 0.015 \\ ablame - 20.s_9 - 9 - 11 0.123 \pm 0.015 \\ ablame - 20.s_9 - 9 - 10 0.423 \pm 0.015 \\ ablame - 20.s_9 - 9 - 10 0.423 \pm 0.015 \\ ablame - 20.s_9 - 9 - 10 0.423 \pm 0.015 \\ ablame - 20.s_9 - 9 - 10 0.423 \pm 0.015 \\ ablame - 20.s_9 - 9 - 10 0.423 \pm 0.015 \\ ablame - 20.s_9 - 9 - 10 0.423 \pm 0.015 \\ ablame - 20.s_9 - 10 0.423 \pm 0.015 \\ ablame - 2$												
$ \begin{aligned} a balome &-19, s_0 &-11 &-12 &-13 & 0.181 \pm 0.000 & 0.062 \pm 0.048 & 0.313 \pm 0.113 & 0.628 \pm 0.110 & 0.322 \pm 0.101 & 0.322 \pm 0.105 & 0.282 \pm 0.282 & 0.282$												
$ \begin{array}{c} abclome - 20, s_0 - 9 - 10 & 0.423 \pm 0.105 \\ abclome - 20, s_0 - 9 - 10 & 0.423 \pm 0.105 \\ abclome - 21, s_0 - 1$												
$ \begin{array}{c} abclaime - 21s_0 \ .0486 \pm 0.297 \ \ 0.429 \pm 0.144 \ \ 0.429 \ \ 4.0192 \ \ 0.414 \pm 0.234 \ \ 0.500 \pm 0.146 \ \ 0.629 \pm 0.146 \ \ \ 0.629 \pm 0.146 \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \$												
$ \frac{hdcup-haf fers.ver flows, societ 1.000 \pm 0.0003}{kdcup-rodxlet-image, societ 1.0000 \pm 0.0001}{kdcup-rodxlet-image, societ 1.0000 \pm 0.0001} = 0.0001 \pm 0.0001 \pm 0.0001 \pm 0.0001 = 0.0001 = 0.0001 = 0.0000$												
$ bdday - buf [raver [low, sack 1.000 \pm 0.000] \ \ 1.000 \pm 0.000 \ \ 1.000 \pm 0.000] \ \ 1.000 \pm 0.000 \ \ 1.000 \pm 0.000] \ \ \ 1.000 \pm 0.000 \ \ 1.000 \pm 0.000] \ \ 1.000 \pm 0.000 \ \ 1.000 \pm 0.000] \ \ \ 1.000 \pm 0.000 \ \ 1.000 \pm 0.000] \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \$												
$ \begin{array}{c} \dot{\mathbf{F}}r-v-\mathbf{e}-\mathbf{k}-\mathbf{x}-\mathbf{c}, \mathbf{a}_{i}\mathbf{c}_{i} & 0.925\pm0.101 & 0.932\pm0.103 &$												
$\begin{array}{c} poker - 8-9.48 \\ poker - 8-9.48 \\ 0.383 \pm 0.172 \\ poker - 8-9.48 \\ 0.075 \pm 0.107 \\ 0.075 \pm 0.208 \\ 0.075 \pm 0.108 \\ 0.075 \pm 0.208 \\ 0.075 \pm 0.108 \\ 0.075 \pm 0.208 \\ 0.07$	$kr - vs - k - zero_v s_e ight$ (0.925 ± 0.101	0.932 ± 0.103	0.932 ± 0.103	0.932 ± 0.103	0.939 ± 0.083	0.915 ± 0.148	0.909 ± 0.116	0.925 ± 0.101	0.570 ± 0.186	0.733 ± 0.071	0.777 ± 0.172
$ \begin{array}{c} poker - 8.8a \\ poker - 8.6a \\ poker - 8.6a \\ poker - 9.6a $	$poker - 8 - 9_v s_5$ (0.175 ± 0.078	0.135 ± 0.100	0.160 ± 0.063	0.175 ± 0.067	0.111 ± 0.102	0.215 ± 0.140	0.113 ± 0.056	0.175 ± 0.078	0.072 ± 0.098	0.219 ± 0.197	0.156 ± 0.217
$ \begin{array}{c} poler - 9.87 & 0.150 \pm 0.166 \\ winequality - red8.0 & 0.060 \pm 0.092 \\ winequality - red8.0 & 0.060 \pm 0.092 \\ winequality - red8.0 & 0.078 \pm 0.111 \\ winequality - red8.0 & 0.278 \pm 0.111 \\ winequality - red - 8.0 & 0.278 \pm 0.111 \\ winequality - red - 8.0 & 0.278 \pm 0.111 \\ winequality - red - 8.0 & 0.278 \pm 0.111 \\ winequality - red - 8.0 & 0.278 \pm 0.111 \\ winequality - red - 8.0 & 0.278 \pm 0.111 \\ winequality - red - 8.0 & 0.278 \pm 0.111 \\ winequality - red - 8.0 & 0.278 \pm 0.112 \\ winequality - red - 8$	$poker - 8 - 9_v s_6$ (0.383 ± 0.172	0.654 ± 0.277	0.358 ± 0.186	0.308 ± 0.161	0.513 ± 0.278	0.294 ± 0.188	0.333 ± 0.208	0.383 ± 0.172	1.000 ± 0.000	1.000 ± 0.000	1.000 ± 0.000
$ \frac{winequality - red - 3.8s}{winequality - red - 3.8s} 0.069 \pm 0.0092 \\ 0.089 \pm 0.133 \\ 0.024 \pm 0.089 0.23 \pm 0.079 \\ 0.024 \pm 0.089 0.23 \pm 0.079 \\ 0.024 \pm 0.089 0.23 \pm 0.079 \\ 0.023 \pm 0.079 \\ 0.027 \pm 0.010 \\ 0.027 \pm 0.010$			0.378 ± 0.324	0.414 ± 0.246	0.378 ± 0.189	0.389 ± 0.192	0.363 ± 0.311			0.863 ± 0.169	0.863 ± 0.169	0.672 ± 0.319
$ \begin{array}{c} winequality - red - 4 & 0.182 \pm 0.101 & 0.121 \pm 0.062 & 0.234 \pm 0.069 & 0.223 \pm 0.077 & 0.185 \pm 0.015 & 0.107 \pm 0.085 & 0.187 \pm 0.010 & 0.113 \pm 0.064 & 0.207 \pm 0.126 & 0.151 \pm 0.01 \\ winequality - red - 8.e. & 0.278 \pm 0.114 & 0.256 \pm 0.132 & 0.267 \pm 0.102 & 0.267 \pm 0.142 & 0.200 \pm 0.007 & 0.300 \pm 0.122 & 0.278 \pm 0.114 & 0.200 \pm 0.083 & 0.167 \pm 0.131 & 0.178 \pm 0.012 \\ winequality - red - 8.e. & 0.278 \pm 0.114 & 0.256 \pm 0.132 & 0.267 \pm 0.102 & 0.287 \pm 0.142 & 0.200 \pm 0.007 & 0.300 \pm 0.122 & 0.278 \pm 0.114 & 0.200 \pm 0.083 & 0.167 \pm 0.131 & 0.178 \pm 0.102 \\ winequality - red - 8.e. & 0.278 \pm 0.114 & 0.256 \pm 0.132 & 0.267 \pm 0.102 & 0.287 \pm 0.142 & 0.200 \pm 0.007 & 0.200 \pm 0.017 & 0.188 \pm 0.122 & 0.278 \pm 0.114 & 0.200 \pm 0.083 & 0.167 \pm 0.131 & 0.178 \pm 0.102 \\ winequality - red - 8.e. & 0.278 \pm 0.132 & 0.267 \pm 0.202 & 0.287 \pm 0.142 & 0.200 \pm 0.007 & 0.202 \pm 0.124 & 0.202 & 0.278 \pm 0.114 & 0.200 \pm 0.083 & 0.167 \pm 0.131 & 0.178 \pm 0.102 \\ winequality - red - 8.e. & 0.278 \pm 0.132 & 0.278 \pm 0.284 & 0.248 & $	$poker - 9_v s_7$ (0.150 ± 0.166	0.125 ± 0.125	0.150 ± 0.166	0.150 ± 0.166	0.200 ± 0.187	0.250 ± 0.250	0.150 ± 0.166	0.150 ± 0.166	0.400 ± 0.406	0.325 ± 0.317	0.275 ± 0.305
$ \begin{aligned} & & & & & & & & & & & & & & & & & & $	$winequality - red - 3_v s_5$ (0.060 ± 0.092	0.080 ± 0.133	0.040 ± 0.080	0.060 ± 0.092	0.080 ± 0.183	0.160 ± 0.120	0.080 ± 0.133	0.060 ± 0.092	0.060 ± 0.092	0.100 ± 0.100	0.140 ± 0.128
$ \frac{winequality - red t - 8.s_8}{vinequality - red t - 8.s_8} 0.278 \pm 0.114 \\ 0.296 \pm 0.132 \\ 0.120 \pm 0.087 \\$	winequality - red - 4 (0.182 ± 0.101	0.121 ± 0.062	0.234 ± 0.069	0.223 ± 0.077	0.186 ± 0.075	0.223 ± 0.079	0.177 ± 0.038	0.182 ± 0.104	0.113 ± 0.064	0.207 ± 0.126	0.151 ± 0.071
			0.156 ± 0.102									
$ \begin{aligned} winequality - white - 9.48 \pm 0.467 \pm 0.332 & 0.383 \pm 0.338 & 0.363 \pm 0.363 & 0.517 \pm 0.293 & 0.333 \pm 0.325 & 0.333 \pm 0.32$												
$ \begin{array}{c} 2 \text{co} - 3 \ 0.383 \pm 0.380 & 0.283 \pm 0.248 & 0.383 \pm 0.386 & 0.383 \pm 0.238 & 0.383 \pm 0.238 & 0.383 \pm 0.386 & 0.383 \pm 0.386 & 0.383 \pm 0.386 & 0.383 \pm 0.386 & 0.381 \pm $												
$ \begin{array}{c} codi1 \ 0.775 \pm 0.123 \\ codi2 \ 0.775 \pm 0.076 \\ codi2 \ 0.775 \pm 0.085 \\ codi2 \ 0.785 \pm 0.086 $												
$codi2\ \ 0.773 \pm 0.070 \ \ \ 0.785 \pm 0.060 \ \ \ 0.872 \pm 0.080 \ \ \ 0.778 \pm 0.060 \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ $												
$ colds 3 \ 0.561 \pm 0.095 0.561 \pm 0.132 0.622 \pm 0.140 0.617 \pm 0.103 0.066 \pm 0.100 0.771 \pm 0.103 0.028 \pm 0.106 0.588 \pm 0.016 0.588 \pm 0.066 0.715 \pm 0.335 0.000 \pm 0.09 0.071 \pm 0.010 0.028 \pm 0.016 0.584 \pm 0.048 0.671 \pm 0.026 0.071 \pm 0.010 0.082 \pm 0.010 0.581 \pm 0.012 0.081 \pm 0.010 0.081 \pm 0.011 0.081 \pm 0.010 0.081 \pm 0.010 $												
$\begin{array}{c} glase0 \ \ 0.743 \pm 0.096 \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \$												
$\begin{array}{c} glasel & 0.666 \pm 0.047 \\ holdrom on & 0.458 \pm 0.056 \\ holdrom on & 0.458 \pm 0.026 \\ holdrom & 0.578 \pm 0.016 \\ holdrom & 0.578 \pm 0.048 \\ holdrom & 0.578 \pm$												
$ \begin{array}{c} h_{obcrman} \ 0.445 \pm 0.078 \\ page - blocked) \ 0.855 \pm 0.026 \\ 0.859 \pm 0.019 \\ 0.858 \pm 0.020 \\ 0.859 \pm 0.010 \\ 0.859 $												
$\begin{array}{cccccccccccccccccccccccccccccccccccc$												
p_{irma} 0.588 ± 0.050 0.584 ± 0.044 0.572 ± 0.045 0.581 ± 0.039 0.588 ± 0.010 0.611 ± 0.038 0.565 ± 0.066 0.565 ± 0.066 0.509 ± 0.039 0.564 ± 0.043 0.472 ± 0.103 0.000 ±												
$ \begin{array}{c} \text{rehicel} 0.519 \pm 0.058 0.519 \pm 0.044 0.513 \pm 0.085 0.527 \pm 0.085 0.525 \pm 0.089 0.579 \pm 0.047 0.513 \pm 0.035 0.537 \pm 0.044 0.512 \pm 0.044 0.569 \pm 0.016 0.000 \pm 0.00 \\ \text{pearl} 0.531 \pm 0.031 0.585 \pm 0.049 0.501 \pm 0.044 0.559 \pm 0.088 0.537 \pm 0.033 0.576 \pm 0.035 0.337 \pm 0.034 0.535 \pm 0.028 0.516 \pm 0.063 0.548 \pm 0.001 0.000 \pm 0.00 \\ \text{pearl} 0.531 \pm 0.031 0.526 \pm 0.029 0.537 \pm 0.035 0.537 \pm 0.037 0.537 \pm 0.035 0.535 \pm 0.031 0.535 \pm 0.028 0.516 \pm 0.069 0.000 \pm 0.00 \\ \text{pearl} 0.531 \pm 0.031 0.532 \pm 0.031 0.532 \pm 0.031 0.532 \pm 0.031 0.533 \pm 0.031 0.534 \pm 0.0$												
$\frac{\text{exhicks 0.534 \pm 0.046}}{\text{proach 0.534 \pm 0.016}} 0.558 \pm 0.049 0.554 \pm 0.044 0.559 \pm 0.058 0.537 \pm 0.058 0.575 \pm 0.035 0.578 \pm 0.035 0.537 \pm 0.056 0.537 \pm 0.007 0.537$												
$yeast1 \hspace{0.2cm} 0.531 \pm 0.031 \hspace{0.2cm} 0.526 \pm 0.029 \hspace{0.2cm} 0.537 \pm 0.035 \hspace{0.2cm} 0.537 \pm 0.027 \hspace{0.2cm} 0.537 \pm 0.040 \hspace{0.2cm} 0.550 \pm 0.040 \hspace{0.2cm} 0.538 \pm 0.031 \hspace{0.2cm} 0.514 \pm 0.019 \hspace{0.2cm} 0.468 \pm 0.091 \hspace{0.2cm} \textbf{1.000} \hspace{0.2cm} \textbf{0.000} \hspace{0.2cm} 0$												
yeass 0.772 ± 0.050 0.704 ± 0.001 0.775 ± 0.044 0.746 ± 0.028 0.741 ± 0.047 0.778 ± 0.001 0.751 ± 0.000 0.778 ± 0.057 0.889 ± 0.058 0.994 ± 0.000 0.000 ± 0.0												
	yeasts (0.112 ± 0.036	0.704 £ 0.001	0.115 ± 0.044	0.140 ± 0.028	0.141 ± 0.041	0.110 £ 0.001	0.751 £ 0.000	0.110 ± 0.031	0.000 I 0.008	0.004 I 0.006	0.000 ± 0.000

Table 8. SVM - Recall

Dataset name	SMOTE	polynom-fit-SMOTE	Lee	SMOBD	G-SMOTE	LVO-SMOTE	Assembled-SMOT	E SMOTE-TomekLinks	JFOTS-pr	JFOTS-rc	JFOTS-prom
	0.300 ± 0.131	0.194 ± 0.099	0.300 ± 0.121	0.312 ± 0.137	0.306 ± 0.132		0.300 ± 0.131	0.300 ± 0.131	0.475 ± 0.211		0.663 ± 0.179
abalone9 - 18		0.448 ± 0.077	0.610 ± 0.073		0.586 ± 0.107		0.595 ± 0.071	0.590 ± 0.107		0.681 ± 0.088	
$ecoli - 0 - 1 - 3 - 7_v s_2 - 6$		0.700 ± 0.155	0.700 ± 0.155	0.700 ± 0.155	0.700 ± 0.155		0.700 ± 0.155	0.700 ± 0.155		0.742 ± 0.248	
$qlass - 0 - 1 - 6_v s_2$		0.504 ± 0.167	0.654 ± 0.175		0.511 ± 0.184		0.643 ± 0.129	0.629 ± 0.196		0.815 ± 0.203	
$glass - 0 - 1 - 6_v s_5$		0.590 ± 0.234	0.650 ± 0.201	0.650 ± 0.201	0.590 ± 0.234	0.720 ± 0.290	0.650 ± 0.201	0.650 ± 0.201		0.805 ± 0.313	
glass2 (0.458 ± 0.275	0.415 ± 0.259	0.471 ± 0.274	0.449 ± 0.273	0.472 ± 0.278	0.539 ± 0.297	0.471 ± 0.285	0.458 ± 0.275	0.482 ± 0.281	0.764 ± 0.264	0.569 ± 0.267
glass4 0	0.802 ± 0.195	0.721 ± 0.238	0.786 ± 0.225	0.771 ± 0.250	0.769 ± 0.214	0.798 ± 0.233	0.769 ± 0.171	0.802 ± 0.195	0.660 ± 0.140	0.752 ± 0.101	0.640 ± 0.179
glass5 (0.645 ± 0.217	0.625 ± 0.211	0.665 ± 0.203	0.665 ± 0.203	0.645 ± 0.217	0.755 ± 0.298	0.645 ± 0.217	0.645 ± 0.217	0.600 ± 0.210	0.795 ± 0.258	0.770 ± 0.273
$page - blocks - 1 - 3_v s_4$	0.836 ± 0.228	0.593 ± 0.143	0.843 ± 0.223	0.843 ± 0.223	0.836 ± 0.237	0.636 ± 0.098	0.807 ± 0.233	0.836 ± 0.228	0.750 ± 0.215	0.879 ± 0.150	0.729 ± 0.280
$yeast - 0 - 5 - 6 - 7 - 9_v s_4$		0.556 ± 0.066	0.635 ± 0.087	0.600 ± 0.097	0.600 ± 0.101	0.639 ± 0.065	0.604 ± 0.082	0.600 ± 0.099		0.980 ± 0.020	
$yeast - 1 - 2 - 8 - 9_v s_7$		0.320 ± 0.129					0.380 ± 0.112	0.387 ± 0.078		1.000 ± 0.000	
$yeast - 1 - 4 - 5 - 8_v s_7$		0.280 ± 0.107	0.307 ± 0.100	0.313 ± 0.090	0.320 ± 0.107		0.300 ± 0.095	0.327 ± 0.101		1.000 ± 0.000	
$yeast - 1_v s_7$ (0.467 ± 0.089		0.547 ± 0.078			0.533 ± 0.079	0.540 ± 0.076		0.973 ± 0.080	
$yeast - 2_v s_4$ (0.761 ± 0.088	0.792 ± 0.088	0.792 ± 0.098			0.781 ± 0.101	0.781 ± 0.088		0.918 ± 0.120	
$yeast - 2_v s_8$		0.550 ± 0.102	0.560 ± 0.102	0.570 ± 0.110	0.530 ± 0.100		0.560 ± 0.162	0.550 ± 0.120		0.940 ± 0.120	
	0.619 ± 0.071	0.550 ± 0.066	0.628 ± 0.087 0.882 ± 0.058		0.604 ± 0.074 0.886 ± 0.055		0.600 ± 0.054 0.882 ± 0.058	0.619 ± 0.071 0.882 ± 0.058		0.980 ± 0.020 1.000 ± 0.000	
	0.882 ± 0.058	0.873 ± 0.060									
$yeastb$ ($cleveland - 0_{-s_4}$ (0.727 ± 0.109	0.716 ± 0.101 0.369 ± 0.163	0.739 ± 0.119 0.464 ± 0.203	0.727 ± 0.107		0.824 ± 0.073 0.719 ± 0.104	0.727 ± 0.118 0.448 ± 0.177	0.727 ± 0.109 0.448 ± 0.177		0.978 ± 0.067 0.502 ± 0.228	
$ecoli - 0 - 1 - 4 - 7_v s_2 - 3 - 5 - 6$		0.369 ± 0.163 0.717 ± 0.041	0.464 ± 0.203 0.765 ± 0.066	0.481 ± 0.199 0.758 ± 0.037		0.719 ± 0.104 0.826 ± 0.069		0.448 ± 0.177 0.771 ± 0.066		0.502 ± 0.228 0.788 ± 0.152	
$ecoti - 0 - 1 - 4 - 1_v s_2 - 3 - 5 - 6$ $ecoli - 0 - 1_v s_2 - 3 - 5$		0.717 ± 0.041 0.750 ± 0.091	0.763 ± 0.066 0.750 ± 0.091	0.758 ± 0.037 0.750 ± 0.091			0.779 ± 0.071 0.750 ± 0.091	0.771 ± 0.000 0.733 ± 0.090		0.788 ± 0.132 0.833 ± 0.139	
$ecoli - 0 - 1_v s_2 - 3 - 5$ $ecoli - 0 - 2 - 6 - 7_v s_3 - 5$		0.730 ± 0.091 0.700 ± 0.122	0.730 ± 0.091 0.709 ± 0.114			0.825 ± 0.115 0.809 ± 0.125		0.733 ± 0.090 0.700 ± 0.108		0.764 ± 0.153	
$ecoli - 0 - 2 - 6 - i_v s_3 - 5$ $ecoli - 0 - 6 - 7_v s_3 - 5$		0.700 ± 0.122 0.718 ± 0.111				0.809 ± 0.125 0.800 ± 0.134		0.700 ± 0.108 0.718 ± 0.111		0.764 ± 0.153 0.764 ± 0.153	
$ecoli - 0 - 6 - 7_v s_5$		0.750 ± 0.092	0.750 ± 0.092	0.750 ± 0.092			0.750 ± 0.092	0.750 ± 0.092		0.870 ± 0.149	
$alass - 0 - 1 - 4 - 6_{-82}$		0.456 ± 0.262	0.592 ± 0.235				0.589 ± 0.267	0.568 ± 0.209		0.869 ± 0.165	
$glass - 0 - 1 - 5_v s_2$		0.433 ± 0.142	0.565 ± 0.130		0.453 ± 0.132		0.532 ± 0.150	0.554 ± 0.135		0.811 ± 0.155	
yeast - 0 - 2 - 5 - 6-83 - 7 - 8 - 9		0.588 ± 0.087	0.635 ± 0.056		0.621 ± 0.065		0.643 ± 0.063	0.637 ± 0.062		0.729 ± 0.078	
$yeast - 0 - 3 - 5 - 9_v s_7 - 8$		0.316 ± 0.070	0.556 ± 0.081		0.548 ± 0.084		0.552 ± 0.071	0.560 ± 0.082		0.976 ± 0.072	
$abalone - 17_v s_7 - 8 - 9 - 10$		0.528 ± 0.079			0.693 ± 0.054		0.721 ± 0.052	0.714 ± 0.041		0.793 ± 0.109	
$abalone - 19_v s_1 0 - 11 - 12 - 13$		0.231 ± 0.125	0.425 ± 0.155	0.425 ± 0.142	0.387 ± 0.136	0.463 ± 0.163	0.406 ± 0.164	0.419 ± 0.158	0.412 ± 0.233	0.694 ± 0.141	0.488 ± 0.214
$abalone - 20_v s_8 - 9 - 10$		0.577 ± 0.086	0.662 ± 0.086	0.646 ± 0.099	0.631 ± 0.108	0.823 ± 0.103	0.638 ± 0.114	0.654 ± 0.099	0.523 ± 0.238	0.838 ± 0.080	0.546 ± 0.221
$abalone - 21_v s_8$ (0.614 ± 0.239	0.586 ± 0.243	0.614 ± 0.239	0.629 ± 0.241	0.614 ± 0.248	0.700 ± 0.135	0.614 ± 0.239	0.614 ± 0.239	0.571 ± 0.293	0.571 ± 0.221	0.557 ± 0.289
flare - F	0.604 ± 0.093	0.419 ± 0.095	0.600 ± 0.097	0.609 ± 0.105	0.577 ± 0.090	0.674 ± 0.117	0.600 ± 0.095	0.604 ± 0.093	0.525 ± 0.200	0.949 ± 0.052	0.605 ± 0.163
$kddcup - buffer_overflow_vs_back$ (0.987 ± 0.027	0.993 ± 0.020	0.987 ± 0.027	0.987 ± 0.027	0.987 ± 0.027	1.000 ± 0.000	0.987 ± 0.027	0.987 ± 0.027	0.993 ± 0.020	0.993 ± 0.020	0.993 ± 0.020
$kddcup - rootkit - imap_v s_back 0$		0.955 ± 0.045				0.955 ± 0.045	0.945 ± 0.060	0.955 ± 0.045	0.955 ± 0.084	10.955 ± 0.084	0.955 ± 0.084
$kr - vs - k - zero_v s_e ight$ (0.880 ± 0.102	0.872 ± 0.113	0.880 ± 0.102			0.918 ± 0.099	0.872 ± 0.113	0.880 ± 0.102	0.752 ± 0.146	0.733 ± 0.071	0.753 ± 0.195
$poker - 8 - 9_v s_5$		0.201 ± 0.135	0.280 ± 0.126		0.263 ± 0.155		0.273 ± 0.105	0.297 ± 0.142	0.397 ± 0.160	0.480 ± 0.180	0.333 ± 0.194
$poker - 8 - 9_v s_6$		0.449 ± 0.095		0.489 ± 0.107			0.499 ± 0.172	0.514 ± 0.127		0.975 ± 0.075	
$poker - 8_v s_6$ (0.425 ± 0.118	0.567 ± 0.146			0.944 ± 0.102		0.567 ± 0.146		0.900 ± 0.213	
$poker - 9_v s_7$ (0.250 ± 0.194	0.275 ± 0.208	0.275 ± 0.208			0.225 ± 0.175	0.275 ± 0.208		0.425 ± 0.275	
$winequality - red - 3_v s_5$		0.100 ± 0.100	0.100 ± 0.100			0.240 ± 0.120		0.100 ± 0.100		0.240 ± 0.196	
winequality - red - 4		0.309 ± 0.063		0.404 ± 0.084			0.397 ± 0.084	0.393 ± 0.088		0.652 ± 0.151	
$winequality - red - 8_v s_6 - 7$		0.156 ± 0.113		0.211 ± 0.116			0.178 ± 0.102	0.211 ± 0.116		0.311 ± 0.178	
winequality $- red - 8_v s_6$		0.267 ± 0.054	0.289 ± 0.074	0.289 ± 0.074			0.311 ± 0.067	0.289 ± 0.074		0.444 ± 0.217	
$winequality - white - 3 - 9_v s_5$		0.095 ± 0.093				0.410 ± 0.087		0.181 ± 0.109		0.372 ± 0.212	
$winequality - white - 3_v s_7$ (0.080 ± 0.087				0.530 ± 0.155		0.110 ± 0.104		0.370 ± 0.290	
winequality – white – $9_v s_4$ 0	0.233 ± 0.267 0.233 ± 0.327	0.633 ± 0.267 0.233 ± 0.327		0.400 ± 0.436 0.200 ± 0.332			0.633 ± 0.267 0.233 ± 0.327	0.633 ± 0.267 0.233 ± 0.327		0.483 ± 0.361 0.383 ± 0.380	
	0.233 ± 0.327 0.896 ± 0.050	0.233 ± 0.327 0.839 ± 0.035	0.233 ± 0.327 0.891 ± 0.047	0.200 ± 0.332 0.883 ± 0.040	0.253 ± 0.327 0.883 ± 0.040		0.886 ± 0.047	0.896 ± 0.050		0.967 ± 0.062	
	0.896 ± 0.050 0.915 ± 0.054	0.839 ± 0.033 0.892 ± 0.073		0.883 ± 0.040 0.912 ± 0.057	0.883 ± 0.040 0.912 ± 0.057		0.886 ± 0.047 0.919 ± 0.047	0.896 ± 0.050 0.912 ± 0.057		0.987 ± 0.062 0.935 ± 0.106	
	0.915 ± 0.054 0.880 ± 0.054	0.869 ± 0.056		0.912 ± 0.037 0.880 ± 0.047			0.919 ± 0.047 0.874 ± 0.050	0.912 ± 0.057 0.886 ± 0.051		0.954 ± 0.106 0.954 ± 0.035	
	0.860 ± 0.064 0.860 ± 0.064	0.811 ± 0.063	0.863 ± 0.065	0.8877 ± 0.070	0.869 ± 0.062		0.874 ± 0.056 0.874 ± 0.056	0.866 ± 0.063		0.951 ± 0.057	
	0.860 ± 0.064 0.758 ± 0.078	0.811 ± 0.003 0.771 ± 0.098		0.877 ± 0.070 0.745 ± 0.105			0.874 ± 0.036 0.750 ± 0.102	0.866 ± 0.063 0.753 ± 0.078		0.945 ± 0.034	
	0.475 ± 0.078	0.440 ± 0.081	0.479 ± 0.097	0.484 ± 0.122	0.492 ± 0.129	0.458 ± 0.104	0.494 ± 0.097	0.470 ± 0.122		0.562 ± 0.139	
page - blocks0		0.824 ± 0.018			0.914 ± 0.020		0.915 ± 0.020	0.916 ± 0.019		0.963 ± 0.015	
	0.708 ± 0.047	0.635 ± 0.057	0.705 ± 0.049	0.694 ± 0.037			0.711 ± 0.051	0.712 ± 0.044		0.844 ± 0.038	
	0.825 ± 0.086	0.653 ± 0.058	0.827 ± 0.077	0.822 ± 0.078	0.836 ± 0.058	0.830 ± 0.024	0.821 ± 0.067	0.831 ± 0.084		0.897 ± 0.038	
	0.845 ± 0.056	0.648 ± 0.053	0.850 ± 0.053	0.866 ± 0.056	0.839 ± 0.050		0.845 ± 0.040	0.847 ± 0.055		0.881 ± 0.066	
	0.716 ± 0.033	0.544 ± 0.029		0.724 ± 0.043			0.715 ± 0.038	0.717 ± 0.033		1.000 ± 0.000	
	0.843 ± 0.050	0.802 ± 0.053		0.842 ± 0.059			0.849 ± 0.052	0.843 ± 0.050		0.994 ± 0.006	

Table 9. KNN – AUC

Dataset name	SMOTE	polynom-fit-SMOTE	Lee	SMOBD	G-SMOTE	LVO-SMOTE	Assembled-SMOT	E SMOTE-TomekLinks	JFOTS-pr	JFOTS-re	JFOTS-prom
	0.568 ± 0.069	0.519 ± 0.028	0.568 ± 0.069		0.549 ± 0.043	0.554 ± 0.047	0.565 ± 0.062	0.568 ± 0.069			0.520 ± 0.032
abalone9 - 18		0.704 ± 0.044		0.709 ± 0.040			0.714 ± 0.041	0.720 ± 0.033		0.572 ± 0.063	
$ecoli - 0 - 1 - 3 - 7_v s_2 - 6$	0.834 ± 0.075	0.835 ± 0.076	0.834 ± 0.074	0.833 ± 0.074	0.835 ± 0.076	0.833 ± 0.076	0.834 ± 0.075	0.834 ± 0.075	0.800 ± 0.108	0.800 ± 0.106	0.820 ± 0.096
$glass - 0 - 1 - 6_v s_2$	0.718 ± 0.086	0.682 ± 0.045	0.713 ± 0.081	0.714 ± 0.084	0.700 ± 0.056	0.657 ± 0.063	0.725 ± 0.082	0.717 ± 0.085	0.638 ± 0.040	0.606 ± 0.086	0.660 ± 0.084
$glass - 0 - 1 - 6_v s_5$	0.914 ± 0.097	0.915 ± 0.098	0.914 ± 0.097	0.914 ± 0.098	0.894 ± 0.135	0.881 ± 0.120	0.914 ± 0.097	0.914 ± 0.097	0.878 ± 0.118	0.842 ± 0.192	0.801 ± 0.162
	0.630 ± 0.134	0.633 ± 0.137		0.644 ± 0.141		0.627 ± 0.112	0.635 ± 0.145	0.628 ± 0.133		0.583 ± 0.096	
	0.901 ± 0.057	0.903 ± 0.068		0.885 ± 0.056			0.892 ± 0.048	0.901 ± 0.057			0.755 ± 0.062
	0.931 ± 0.110			0.931 ± 0.110		0.862 ± 0.108	0.931 ± 0.110	0.931 ± 0.110		0.867 ± 0.136	
$page - blocks - 1 - 3vs_4$	0.983 ± 0.023			0.983 ± 0.023		0.980 ± 0.016	0.976 ± 0.025	0.983 ± 0.023		0.835 ± 0.086	
$yeast - 0 - 5 - 6 - 7 - 9_v s_4$		0.740 ± 0.038		0.733 ± 0.043		0.731 ± 0.045	0.718 ± 0.035	0.725 ± 0.043			0.643 ± 0.072
$yeast - 1 - 2 - 8 - 9_v s_7$		0.685 ± 0.045		0.663 ± 0.040		0.660 ± 0.052	0.667 ± 0.051	0.672 ± 0.048		0.500 ± 0.000	
$yeast - 1 - 4 - 5 - 8_v s_7$ $yeast - 1_v s_7$		0.595 ± 0.062 0.723 ± 0.042		0.594 ± 0.052 0.732 ± 0.042		0.577 ± 0.042 0.690 ± 0.033	0.605 ± 0.039 0.701 ± 0.051	0.611 ± 0.038 0.722 ± 0.035		0.500 ± 0.000	0.521 ± 0.048 0.575 ± 0.076
$yeast - 1_v s_7$ $yeast - 2_v s_4$		0.723 ± 0.042 0.863 ± 0.035		0.732 ± 0.042 0.871 ± 0.030		0.861 ± 0.034	0.875 ± 0.037	0.722 ± 0.035 0.874 ± 0.030		0.499 ± 0.002 0.603 ± 0.158	
$yeast - 2_vs_4$ $yeast - 2_vs_8$		0.810 ± 0.046	0.794 ± 0.045			0.806 ± 0.057	0.798 ± 0.051	0.801 ± 0.050		0.534 ± 0.105	
	0.729 ± 0.031	0.733 ± 0.034		0.729 ± 0.027			0.735 ± 0.039	0.729 ± 0.025		0.534 ± 0.103 0.500 ± 0.000	
	0.929 ± 0.036	0.920 ± 0.035	0.925 ± 0.036		0.910 ± 0.034		0.929 ± 0.034	0.929 ± 0.036		0.500 ± 0.000	
	0.814 ± 0.044	0.816 ± 0.038		0.813 ± 0.044			0.809 ± 0.043	0.814 ± 0.044		0.500 ± 0.000	
$cleveland - 0_v s_4$		0.868 ± 0.036		0.875 ± 0.068			0.883 ± 0.024	0.876 ± 0.069		0.719 ± 0.135	
$ecoli - 0 - 1 - 4 - 7_v s_2 - 3 - 5 - 6$	0.883 ± 0.018	0.878 ± 0.024	0.880 ± 0.018	0.876 ± 0.018	0.884 ± 0.022	0.877 ± 0.028	0.882 ± 0.021	0.884 ± 0.018	0.739 ± 0.121	0.568 ± 0.099	0.803 ± 0.098
$ecoli - 0 - 1_v s_2 - 3 - 5$	0.884 ± 0.024	0.887 ± 0.026	0.878 ± 0.025	0.880 ± 0.025	0.879 ± 0.024	0.875 ± 0.042	0.886 ± 0.030	0.884 ± 0.024	0.821 ± 0.104	0.689 ± 0.160	0.820 ± 0.066
$ecoli - 0 - 2 - 6 - 7_v s_3 - 5$		0.839 ± 0.051	0.842 ± 0.061	0.840 ± 0.053	0.843 ± 0.057	0.840 ± 0.038	0.838 ± 0.049	0.839 ± 0.050	0.810 ± 0.041	0.588 ± 0.122	0.840 ± 0.027
$ecoli - 0 - 6 - 7_v s_3 - 5$		0.855 ± 0.053		0.858 ± 0.050			0.851 ± 0.052	0.852 ± 0.053		0.614 ± 0.143	
$ecoli - 0 - 6 - 7_v s_5$		0.865 ± 0.056		0.867 ± 0.053			0.865 ± 0.049	0.867 ± 0.048		0.589 ± 0.123	
$glass - 0 - 1 - 4 - 6_v s_2$				0.673 ± 0.099	0.645 ± 0.101		0.666 ± 0.105	0.669 ± 0.095		0.582 ± 0.110	
$glass - 0 - 1 - 5_v s_2$					0.667 ± 0.084		0.683 ± 0.059	0.675 ± 0.060		0.622 ± 0.128	
$yeast - 0 - 2 - 5 - 6_v s_3 - 7 - 8 - 9$				0.772 ± 0.026			0.772 ± 0.031	0.773 ± 0.032		0.533 ± 0.058	
$yeast - 0 - 3 - 5 - 9_v s_7 - 8$ $abalone - 17_v s_7 - 8 - 9 - 10$		0.675 ± 0.035 0.719 ± 0.034		0.670 ± 0.043 0.745 ± 0.046			0.669 ± 0.030 0.743 ± 0.044	0.680 ± 0.038 0.749 ± 0.046		0.502 ± 0.011	0.561 ± 0.065 0.612 ± 0.072
abalone $-17_v s_7 - 8 - 9 - 10$ abalone $-19_v s_1 0 - 11 - 12 - 13$		0.719 ± 0.034 0.551 ± 0.025		0.743 ± 0.046 0.589 ± 0.047		0.759 ± 0.042 0.569 ± 0.045	0.743 ± 0.044 0.570 ± 0.044	0.749 ± 0.046 0.582 ± 0.037			0.512 ± 0.072 0.523 ± 0.044
$abalone - 20_v s_8 - 9 - 10$		0.662 ± 0.025		0.761 ± 0.067			0.570 ± 0.044 0.743 ± 0.082	0.746 ± 0.058		0.513 ± 0.033 0.549 ± 0.077	
abalone $-20_v s_8 - 9 - 10$ $abalone - 21_v s_8$ (0.815 ± 0.076		0.794 ± 0.065	0.822 ± 0.082	0.830 ± 0.084		0.667 ± 0.077	
	0.693 ± 0.044			0.693 ± 0.044			0.694 ± 0.041	0.692 ± 0.044		0.504 ± 0.009	
$kddcup - buffer_overflow_v s_back$		0.957 ± 0.047		0.957 ± 0.047			0.947 ± 0.043	0.957 ± 0.047		0.957 ± 0.045	
$kddcup - rootkit - imap_us_back$		0.964 ± 0.040	0.973 ± 0.022	0.973 ± 0.022	0.955 ± 0.045	0.945 ± 0.027	0.955 ± 0.050	0.973 ± 0.022	0.964 ± 0.040	0.964 ± 0.040	0.964 ± 0.040
$kr - vs - k - zero_v s_e ight$	0.940 ± 0.050	0.930 ± 0.053	0.944 ± 0.050	0.944 ± 0.049	0.926 ± 0.061	0.940 ± 0.062	0.929 ± 0.060	0.940 ± 0.050	0.757 ± 0.163	0.500 ± 0.000	0.749 ± 0.175
$poker - 8 - 9_v s_5$	0.609 ± 0.059	0.578 ± 0.036	0.617 ± 0.065	0.608 ± 0.062	0.548 ± 0.044	0.643 ± 0.048	0.614 ± 0.061	0.609 ± 0.059	0.546 ± 0.069	0.514 ± 0.036	0.550 ± 0.075
$poker - 8 - 9_v s_6$		0.912 ± 0.033		0.949 ± 0.039			0.937 ± 0.031	0.949 ± 0.040	0.988 ± 0.038		
$poker - 8_v s_6$		0.851 ± 0.057		0.942 ± 0.061			0.932 ± 0.078	0.942 ± 0.061		0.931 ± 0.113	
$poker - 9_v s_7$		0.839 ± 0.152		0.839 ± 0.152			0.828 ± 0.145	0.839 ± 0.152		0.806 ± 0.192	
$winequality - red - 3_v s_5$		0.577 ± 0.053		0.583 ± 0.061			0.575 ± 0.052	0.584 ± 0.061		0.493 ± 0.033	
winequality - red - 4		0.583 ± 0.043	0.596 ± 0.029	0.596 ± 0.021 0.537 ± 0.063	0.588 ± 0.036	0.557 ± 0.024	0.602 ± 0.024	0.597 ± 0.026		0.521 ± 0.038 0.534 ± 0.070	
winequality $- red - 8_v s_6 - 7$ winequality $- red - 8_v s_6$		0.543 ± 0.068				0.530 ± 0.060	0.534 ± 0.055	0.531 ± 0.064		0.534 ± 0.070 0.584 ± 0.077	
winequality $- red - 8_v s_6$ (winequality $- white - 3 - 9_v s_5$ (0.624 ± 0.055	0.635 ± 0.051 0.617 ± 0.034		0.600 ± 0.052 0.602 ± 0.053	0.632 ± 0.043 0.599 ± 0.034	0.635 ± 0.050 0.618 ± 0.030		0.584 ± 0.077 0.518 ± 0.029	
winequality – white – 3 – 3_vs_7 winequality – white – 3_vs_7		0.573 ± 0.064		0.619 ± 0.094			0.630 ± 0.099	0.630 ± 0.086		0.518 ± 0.029 0.599 ± 0.089	
winequality – white – $9_v s_4$ winequality – white – $9_v s_4$		0.882 ± 0.095		0.766 ± 0.164		0.774 ± 0.172	0.878 ± 0.091	0.878 ± 0.091		0.726 ± 0.039	
	0.827 ± 0.157			0.717 ± 0.191			0.827 ± 0.157	0.827 ± 0.057		0.630 ± 0.130	
	0.864 ± 0.026	0.863 ± 0.019		0.871 ± 0.024		0.864 ± 0.028	0.863 ± 0.033	0.867 ± 0.023		0.563 ± 0.127	
	0.915 ± 0.028	0.922 ± 0.025		0.914 ± 0.027		0.911 ± 0.021	0.914 ± 0.027	0.915 ± 0.028		0.584 ± 0.138	
ecoli3	0.866 ± 0.019	0.857 ± 0.022	0.868 ± 0.015	0.859 ± 0.025	0.851 ± 0.035	0.851 ± 0.028	0.861 ± 0.018	0.865 ± 0.015	0.800 ± 0.053	0.575 ± 0.119	0.000 ± 0.000
glass0	0.791 ± 0.035	0.799 ± 0.036	0.786 ± 0.034	0.794 ± 0.028	0.793 ± 0.028	0.787 ± 0.041	0.800 ± 0.030	0.800 ± 0.034	0.778 ± 0.047	0.700 ± 0.116	0.000 ± 0.000
glass1	0.738 ± 0.047	0.749 ± 0.053	0.745 ± 0.044	0.748 ± 0.037	0.739 ± 0.042	0.740 ± 0.031	0.736 ± 0.030	0.738 ± 0.051	0.698 ± 0.068	0.551 ± 0.081	0.000 ± 0.000
	0.601 ± 0.034	0.616 ± 0.036	0.587 ± 0.044		0.588 ± 0.039	0.587 ± 0.030	0.584 ± 0.029	0.599 ± 0.030			0.000 ± 0.000
page-blocks0		0.911 ± 0.012		0.921 ± 0.012		0.887 ± 0.016	0.931 ± 0.009	0.930 ± 0.010			0.000 ± 0.000
	0.685 ± 0.021	0.708 ± 0.018		0.687 ± 0.016			0.687 ± 0.017	0.693 ± 0.024		0.616 ± 0.053	
	0.723 ± 0.026	0.740 ± 0.017		0.736 ± 0.025			0.731 ± 0.022	0.724 ± 0.027		0.716 ± 0.030	
	0.708 ± 0.018	0.700 ± 0.029		0.718 ± 0.025		0.692 ± 0.023	0.712 ± 0.020	0.706 ± 0.020		0.696 ± 0.023	
	0.675 ± 0.010	0.697 ± 0.012 0.874 ± 0.021		0.676 ± 0.015 0.868 ± 0.022			0.674 ± 0.013 0.874 ± 0.017	0.678 ± 0.010 0.872 ± 0.017			0.000 ± 0.000 0.000 ± 0.000
yeast3	0.873 ± 0.017	0.674 ± 0.021	0.674 ± 0.018	0.608 ± 0.022	0.870 ± 0.018	0.808 ± 0.017	0.874 ± 0.017	0.872 ± 0.017	0.847 ± 0.018	0.500 ± 0.000	0.000 ± 0.000

Table 10. CART – BAC

Dataset name SMC	OTE p	oolynom-fit-SMOTE		SMOBD			Assembled-SMOT	E SMOTE-TomekLinks	JFOTS-pr	JFOTS-rc	JFOTS-prom
abalone19 0.561 ±		0.503 ± 0.015		0.565 ± 0.042			0.555 ± 0.047	0.561 ± 0.042	0.505 ± 0.019	0.540 ± 0.045	0.547 ± 0.070
$abalone9 - 18 \ 0.665 \pm$		0.609 ± 0.040		0.685 ± 0.051			0.649 ± 0.038	0.667 ± 0.062	0.658 ± 0.041	0.561 ± 0.075	
$ecoli - 0 - 1 - 3 - 7_v s_2 - 6 \ 0.790 \pm$		0.815 ± 0.063		0.790 ± 0.115			0.790 ± 0.115	0.790 ± 0.115	0.694 ± 0.110	0.609 ± 0.088	
$glass - 0 - 1 - 6_v s_2$ 0.629 ±		0.570 ± 0.054		0.642 ± 0.063			0.633 ± 0.108	0.628 ± 0.055	0.653 ± 0.106		0.608 ± 0.052
$glass - 0 - 1 - 6_v s_5$ 0.860 ±		0.858 ± 0.133		0.860 ± 0.133			0.860 ± 0.133	0.860 ± 0.133	0.765 ± 0.151		0.763 ± 0.158
glass2 0.591 ±		0.563 ± 0.077	0.577 ± 0.111	0.610 ± 0.101	0.599 ± 0.108		0.575 ± 0.094	0.606 ± 0.124	0.586 ± 0.076		0.616 ± 0.091
glass4 0.854 ±		0.835 ± 0.053		0.845 ± 0.086			0.853 ± 0.090	0.854 ± 0.086		0.764 ± 0.140	
glass5 0.851 ±		0.849 ± 0.153		0.851 ± 0.154			0.851 ± 0.154	0.851 ± 0.154	0.836 ± 0.150		0.791 ± 0.156
$page - blocks - 1 - 3_v s_4 - 0.969 \pm$		0.949 ± 0.060	0.966 ± 0.068		0.972 ± 0.063		0.983 ± 0.032	0.969 ± 0.059		0.884 ± 0.100	
$yeast - 0 - 5 - 6 - 7 - 9_v s_4$ 0.696 ±		0.680 ± 0.048			0.677 ± 0.039		0.688 ± 0.037	0.701 ± 0.042	0.662 ± 0.046	0.496 ± 0.008	
$yeast - 1 - 2 - 8 - 9_v s_7$ 0.588 ±	E 0.028	0.578 ± 0.047	0.590 ± 0.030	0.578 ± 0.047	0.599 ± 0.051	0.647 ± 0.062	0.586 ± 0.023	0.604 ± 0.044	0.554 ± 0.057	0.511 ± 0.004	0.561 ± 0.041
$yeast - 1 - 4 - 5 - 8_v s_7$ 0.532 ±		0.554 ± 0.026		0.523 ± 0.045			0.551 ± 0.029	0.526 ± 0.048		0.505 ± 0.003	
$yeast - 1_v s_7 - 0.613 \pm$		0.623 ± 0.049	0.601 ± 0.067			0.659 ± 0.038	0.616 ± 0.048	0.609 ± 0.053	0.584 ± 0.046	0.511 ± 0.029	
$yeast - 2_v s_4 = 0.845 \pm$		0.840 ± 0.055		0.861 ± 0.068			0.865 ± 0.042	0.839 ± 0.037		0.583 ± 0.141	
$yeast - 2_v s_8 = 0.730 \pm$		0.762 ± 0.068		0.778 ± 0.084			0.747 ± 0.065	0.741 ± 0.087	0.756 ± 0.049	0.520 ± 0.031	
yeast4 0.675 ±		0.637 ± 0.032	0.689 ± 0.061			0.719 ± 0.055	0.674 ± 0.083	0.678 ± 0.046	0.676 ± 0.050	0.497 ± 0.009	
yeast5 0.862 ±		0.846 ± 0.068		0.859 ± 0.068			0.868 ± 0.057	0.864 ± 0.076		0.510 ± 0.001	
yeast6 0.730 ±		0.692 ± 0.047	0.725 ± 0.067			0.768 ± 0.051	0.742 ± 0.059	0.731 ± 0.064	0.679 ± 0.058	0.521 ± 0.033	
$cleveland - 0_v s_4$ 0.814 \pm		0.731 ± 0.129		0.782 ± 0.083			0.801 ± 0.063	0.814 ± 0.055		0.736 ± 0.097	
$ecoli - 0 - 1 - 4 - 7_v s_2 - 3 - 5 - 6 \ 0.792 \pm$		0.794 ± 0.048	0.822 ± 0.039	0.790 ± 0.069		0.822 ± 0.050	0.827 ± 0.054	0.806 ± 0.077	0.721 ± 0.104	0.550 ± 0.083	0.745 ± 0.084
$ecoli - 0 - 1_v s_2 - 3 - 5 \ 0.799 \pm$		0.806 ± 0.102	0.784 ± 0.059			0.841 ± 0.058	0.781 ± 0.050	0.800 ± 0.062		0.649 ± 0.137	
$ecoli - 0 - 2 - 6 - 7_v s_3 - 5 0.799 \pm$		0.787 ± 0.062	0.809 ± 0.054				0.778 ± 0.066	0.802 ± 0.047		0.566 ± 0.120	
$ecoli - 0 - 6 - 7_v s_3 - 5 \ 0.795 \pm$		0.794 ± 0.048	0.810 ± 0.052			0.834 ± 0.060	0.790 ± 0.056	0.796 ± 0.069		0.594 ± 0.147	
$ecoli - 0 - 6 - 7_v s_5$ 0.840 ±	£ 0.068	0.840 ± 0.074	0.828 ± 0.068	0.838 ± 0.071	0.837 ± 0.064	0.842 ± 0.044	0.825 ± 0.060	0.839 ± 0.070	0.850 ± 0.078	0.574 ± 0.127	0.835 ± 0.094
$glass - 0 - 1 - 4 - 6_v s_2$ 0.595 ±		0.560 ± 0.082	0.610 ± 0.072			0.638 ± 0.077	0.558 ± 0.066	0.576 ± 0.062		0.557 ± 0.034	
$glass - 0 - 1 - 5_v s_2$ 0.689 ±		0.597 ± 0.068		0.713 ± 0.110			0.649 ± 0.079	0.678 ± 0.062			0.561 ± 0.088
$yeast - 0 - 2 - 5 - 6_v s_3 - 7 - 8 - 9 \ 0.713 \pm$		0.712 ± 0.051		0.714 ± 0.027			0.709 ± 0.037	0.700 ± 0.034	0.646 ± 0.062	0.541 ± 0.061	
$yeast - 0 - 3 - 5 - 9_v s_7 - 8 \ 0.598 \pm$		0.638 ± 0.041		0.623 ± 0.050			0.615 ± 0.028	0.630 ± 0.031	0.550 ± 0.059	0.512 ± 0.016	
$abalone - 17_v s_7 - 8 - 9 - 10 0.644 \pm$		0.642 ± 0.033		0.660 ± 0.045			0.646 ± 0.039	0.642 ± 0.036	0.633 ± 0.055	0.569 ± 0.057	
$abalone - 19_v s_1 0 - 11 - 12 - 13 0.556 \pm$	E 0.041	0.517 ± 0.024	0.556 ± 0.050			0.576 ± 0.050	0.557 ± 0.034	0.560 ± 0.028	0.523 ± 0.039	0.514 ± 0.041	0.527 ± 0.058
$abalone - 20_v s_8 - 9 - 10 - 0.696 \pm$		0.584 ± 0.065	0.674 ± 0.065			0.789 ± 0.061	0.681 ± 0.059	0.696 ± 0.050		0.589 ± 0.042	
$abalone - 21_v s_8$ 0.726 ±		0.655 ± 0.074	0.699 ± 0.092			0.790 ± 0.070	0.692 ± 0.105	0.734 ± 0.126		0.614 ± 0.092	
$flare - F = 0.558 \pm$		0.581 ± 0.030		0.578 ± 0.038			0.576 ± 0.048	0.577 ± 0.035			0.666 ± 0.078
$kddcup - buffer_overflow_v s_back 1.000 \pm$		1.000 ± 0.000		1.000 ± 0.000			1.000 ± 0.000				1.000 ± 0.000
$kddcup - rootkit - imap_v s_b ack 1.000 \pm$		1.000 ± 0.000		1.000 ± 0.000			1.000 ± 0.000	1.000 ± 0.000		0.982 ± 0.036	
$kr - vs - k - zero_v s_e ight$ 0.961 ±		0.965 ± 0.051		0.965 ± 0.051			0.954 ± 0.058	0.961 ± 0.050		0.702 ± 0.042	
$poker - 8 - 9_v s_5 = 0.572 \pm$		0.558 ± 0.049	0.566 ± 0.032			0.585 ± 0.070	0.543 ± 0.028	0.572 ± 0.039		0.517 ± 0.054	
$poker - 8 - 9_v s_6 - 0.680 \pm$		0.824 ± 0.141	0.670 ± 0.096				0.657 ± 0.105	0.680 ± 0.087			0.999 ± 0.001
$poker - 8_v s_6 = 0.685 \pm$		0.685 ± 0.163	0.703 ± 0.123	0.685 ± 0.095	0.691 ± 0.098		0.677 ± 0.100	0.685 ± 0.101	0.931 ± 0.085		
$poker - 9_v s_7 = 0.564 \pm$		0.548 ± 0.063		0.562 ± 0.084			0.563 ± 0.081	0.564 ± 0.082	0.686 ± 0.209		
winequality $- red - 3_v s_5$ 0.516 ±		0.529 ± 0.066	0.506 ± 0.040			0.565 ± 0.056	0.525 ± 0.064	0.516 ± 0.043		0.528 ± 0.049	
winequality $- red - 4 + 0.552 \pm$		0.528 ± 0.030		0.572 ± 0.036			0.548 ± 0.017	0.552 ± 0.050		0.531 ± 0.031	
winequality $-red - 8_v s_6 - 7$ 0.543 ±		0.557 ± 0.050		0.562 ± 0.051			0.545 ± 0.048	0.543 ± 0.041		0.529 ± 0.053	
winequality $- red - 8_v s_6$ 0.609 ±		0.608 ± 0.064	0.605 ± 0.046		0.579 ± 0.047		0.630 ± 0.056	0.609 ± 0.052		0.566 ± 0.063	
winequality $-$ white $-3 - 9_v s_5$ 0.566 \pm		0.544 ± 0.047	0.540 ± 0.054			0.643 ± 0.056	0.535 ± 0.037	0.566 ± 0.063		0.509 ± 0.019	
winequality $-$ white $-$ 3 _v s ₇ 0.539 \pm		0.557 ± 0.060	0.576 ± 0.061			0.737 ± 0.086	0.524 ± 0.047	0.539 ± 0.045		0.578 ± 0.076	
winequality $-$ white $-$ 9 _v s ₄ 0.722 \pm		0.672 ± 0.100		0.721 ± 0.162			0.721 ± 0.162	0.722 ± 0.163		0.573 ± 0.112	
zoo - 3 0.658 ±		0.608 ± 0.123	0.665 ± 0.158			0.738 ± 0.159	0.639 ± 0.122	0.658 ± 0.189		0.509 ± 0.127	
ecoli1 0.841 ±		0.818 ± 0.039	0.827 ± 0.049			0.842 ± 0.033	0.822 ± 0.048	0.860 ± 0.041	0.751 ± 0.067	0.556 ± 0.105	
ecoli2 0.855 ±		0.838 ± 0.035	0.850 ± 0.033			0.866 ± 0.037	0.852 ± 0.041	0.855 ± 0.028		0.578 ± 0.113	
ecoli3 0.745 ±		0.748 ± 0.065	0.768 ± 0.067	0.772 ± 0.049		0.833 ± 0.049	0.775 ± 0.051	0.755 ± 0.053	0.760 ± 0.050	0.554 ± 0.100	
glass0 0.767 ±		0.770 ± 0.060	0.772 ± 0.038			0.802 ± 0.041	0.794 ± 0.040	0.774 ± 0.025		0.673 ± 0.069	
glass1 0.719 ±		0.733 ± 0.031	0.727 ± 0.054			0.717 ± 0.046	0.726 ± 0.061	0.716 ± 0.033	0.676 ± 0.081	0.591 ± 0.058	
haberman 0.584 ±		0.567 ± 0.025	0.573 ± 0.041		0.572 ± 0.052		0.565 ± 0.055	0.596 ± 0.045	0.584 ± 0.025	0.536 ± 0.058	
page - blocks0 0.917 ±		0.898 ± 0.010	0.915 ± 0.010		0.906 ± 0.009		0.919 ± 0.011	0.917 ± 0.008		0.895 ± 0.014	
pima 0.665 ±		0.673 ± 0.023	0.660 ± 0.021			0.678 ± 0.027	0.658 ± 0.021	0.670 ± 0.025	0.659 ± 0.030	0.600 ± 0.041	
vehicle1 0.668 ±		0.668 ± 0.021				0.685 ± 0.023	0.674 ± 0.024	0.676 ± 0.014	0.663 ± 0.019	0.665 ± 0.021	
vehicle3 0.666 ±		0.690 ± 0.023	0.655 ± 0.023	0.677 ± 0.028	0.669 ± 0.016		0.674 ± 0.020	0.667 ± 0.013	0.662 ± 0.038	0.680 ± 0.023	0.000 ± 0.000
yeast1 0.643 ±		0.653 ± 0.017		0.650 ± 0.011			0.652 ± 0.021	0.641 ± 0.009		0.507 ± 0.002	
yeast3 0.864 ±	E 0.029	0.832 ± 0.033	0.663 ± 0.024	0.849 ± 0.015	0.848 ± 0.025	0.660 ± 0.027	0.854 ± 0.031	0.867 ± 0.030	0.826 ± 0.029	0.504 ± 0.003	0.000 ± 0.000

Table 11. SVM – BAC

Dataset name SMOTE	polynom-fit-SMOT	E Lee	SMOBD	G-SMOTE	LVQ-SMOTE	Assembled-SMOT	E SMOTE-TomekLinks	JFOTS-pr	JFOTS-rc	JFOTS-prom
$abalone19 \ 0.593 \pm 0.06$		0.593 ± 0.057	0.599 ± 0.065		0.655 ± 0.056	0.593 ± 0.062	0.593 ± 0.063	0.620 ± 0.082	0.597 ± 0.083	0.610 ± 0.047
$abalone9 - 18 \ 0.740 \pm 0.05$		0.745 ± 0.035	0.750 ± 0.042		0.782 ± 0.043	0.739 ± 0.038	0.739 ± 0.051	0.678 ± 0.060	0.661 ± 0.091	
$ecoli - 0 - 1 - 3 - 7_v s_2 - 6 0.845 \pm 0.07$			0.842 ± 0.076		0.828 ± 0.078	0.844 ± 0.075	0.845 ± 0.075	0.844 ± 0.110		0.861 ± 0.092
$glass - 0 - 1 - 6_v s_2 0.740 \pm 0.09$			0.740 ± 0.079	0.690 ± 0.076		0.743 ± 0.072	0.740 ± 0.100	0.724 ± 0.090		
$glass - 0 - 1 - 6_v s_5 0.820 \pm 0.09$		0.820 ± 0.098	0.820 ± 0.098	0.792 ± 0.116		0.820 ± 0.098	0.820 ± 0.098		0.869 ± 0.153	
$glass2 0.642 \pm 0.14$		0.648 ± 0.140	0.637 ± 0.137		0.677 ± 0.158	0.648 ± 0.146	0.641 ± 0.143	0.626 ± 0.130		0.643 ± 0.119
$glass4$ 0.892 \pm 0.09		0.883 ± 0.108	0.876 ± 0.121			0.876 ± 0.082	0.892 ± 0.094	0.821 ± 0.068		
$glass5 0.818 \pm 0.10$	0.809 ± 0.103	0.828 ± 0.099	0.828 ± 0.099	0.817 ± 0.106		0.818 ± 0.106	0.818 ± 0.106		0.870 ± 0.119	
$page - blocks - 1 - 3_v s_4 = 0.904 \pm 0.11$			0.907 ± 0.112			0.888 ± 0.116	0.904 ± 0.114		0.862 ± 0.073	
$yeast - 0 - 5 - 6 - 7 - 9_v s_4 0.749 \pm 0.04$					0.765 ± 0.030	0.749 ± 0.041	0.746 ± 0.047	0.696 ± 0.066		
$yeast - 1 - 2 - 8 - 9_v s_7$ 0.606 ± 0.04	0.594 ± 0.054	0.608 ± 0.050	0.605 ± 0.049	0.620 ± 0.049	0.673 ± 0.069	0.605 ± 0.053	0.610 ± 0.038	0.566 ± 0.052	0.511 ± 0.004	0.584 ± 0.039
$yeast - 1 - 4 - 5 - 8_v s_7 0.571 \pm 0.05$					0.600 ± 0.034	0.557 ± 0.035	0.571 ± 0.050	0.543 ± 0.035		
$yeast - 1_v s_7 - 0.690 \pm 0.04$			0.692 ± 0.043			0.683 ± 0.040	0.689 ± 0.041	0.596 ± 0.086		
$yeast - 2_v s_4 = 0.870 \pm 0.03$		0.873 ± 0.039	0.875 ± 0.045			0.868 ± 0.046	0.870 ± 0.038	0.848 ± 0.033		
$yeast - 2_v s_8 = 0.736 \pm 0.04$		0.747 ± 0.043			0.795 ± 0.064	0.740 ± 0.063	0.736 ± 0.046	0.756 ± 0.071		0.692 ± 0.091
$yeast4 = 0.765 \pm 0.03$	0.746 ± 0.032	0.769 ± 0.042	0.768 ± 0.032	0.760 ± 0.033	0.792 ± 0.032	0.757 ± 0.024	0.764 ± 0.034	0.688 ± 0.023	0.497 ± 0.009	0.744 ± 0.086
$yeast5 = 0.927 \pm 0.02$	0.924 ± 0.030	0.927 ± 0.029	0.927 ± 0.029	0.930 ± 0.028	0.941 ± 0.024	0.927 ± 0.029	0.927 ± 0.029	0.900 ± 0.064	0.510 ± 0.001	0.860 ± 0.135
$yeast6 \ 0.843 \pm 0.04$		0.848 ± 0.054			0.862 ± 0.034	0.842 ± 0.053	0.843 ± 0.049	0.756 ± 0.054		0.816 ± 0.041
$cleveland - 0_v s_4 0.719 \pm 0.08$					0.845 ± 0.052	0.719 ± 0.088	0.719 ± 0.089	0.718 ± 0.048		0.680 ± 0.101
$ecoli - 0 - 1 - 4 - 7_v s_2 - 3 - 5 - 6 \ 0.872 \pm 0.03$		0.867 ± 0.029	0.866 ± 0.019		0.884 ± 0.033	0.871 ± 0.037	0.872 ± 0.032	0.758 ± 0.130		0.836 ± 0.070
$ecoli - 0 - 1_v s_2 - 3 - 5 0.854 \pm 0.04$	0.865 ± 0.044	0.863 ± 0.044	0.861 ± 0.043	0.856 ± 0.041	0.886 ± 0.047	0.858 ± 0.045	0.853 ± 0.041	0.793 ± 0.088	0.692 ± 0.199	0.820 ± 0.055
$ecoli - 0 - 2 - 6 - 7_v s_3 - 5 \ 0.834 \pm 0.05$	0.842 ± 0.061	0.838 ± 0.056	0.843 ± 0.056	0.853 ± 0.063	0.871 ± 0.050	0.835 ± 0.059	0.834 ± 0.056		0.667 ± 0.149	0.851 ± 0.053
$ecoli - 0 - 6 - 7_v s_3 - 5 \ 0.846 \pm 0.05$	0.851 ± 0.056	0.843 ± 0.056	0.857 ± 0.059	0.856 ± 0.062	0.869 ± 0.060	0.846 ± 0.061	0.846 ± 0.055	0.845 ± 0.051	0.680 ± 0.159	0.852 ± 0.052
$ecoli - 0 - 6 - 7_v s_5 0.861 \pm 0.04$	0.863 ± 0.043	0.863 ± 0.044	0.859 ± 0.043	0.860 ± 0.042	0.887 ± 0.047	0.859 ± 0.044	0.862 ± 0.042	0.861 ± 0.044	0.647 ± 0.163	0.884 ± 0.085
$glass - 0 - 1 - 4 - 6_v s_2 0.710 \pm 0.10$	0.669 ± 0.128	0.713 ± 0.107	0.702 ± 0.131	0.665 ± 0.120	0.625 ± 0.090	0.716 ± 0.127	0.709 ± 0.101	0.609 ± 0.085	0.662 ± 0.083	0.631 ± 0.134
$glass - 0 - 1 - 5_v s_2 0.696 \pm 0.06$		0.701 ± 0.062	0.711 ± 0.071			0.685 ± 0.068	0.696 ± 0.063	0.673 ± 0.066		
$yeast - 0 - 2 - 5 - 6_v s_3 - 7 - 8 - 9 \ 0.782 \pm 0.02$		0.778 ± 0.032			0.791 ± 0.030	0.781 ± 0.029	0.783 ± 0.026	0.735 ± 0.062		
$yeast - 0 - 3 - 5 - 9_v s_7 - 8 \ 0.696 \pm 0.03$		0.687 ± 0.036			0.660 ± 0.053	0.692 ± 0.034	0.695 ± 0.036	0.634 ± 0.069		
$abalone - 17_v s_7 - 8 - 9 - 10 \ 0.814 \pm 0.02$	0.742 ± 0.040	0.809 ± 0.024	0.810 ± 0.034	0.806 ± 0.028	0.823 ± 0.025	0.816 ± 0.024	0.813 ± 0.019	0.677 ± 0.073	0.722 ± 0.090	0.746 ± 0.114
$abalone - 19_v s_1 0 - 11 - 12 - 13 \ 0.633 \pm 0.06$		0.637 ± 0.061			0.659 ± 0.075	0.629 ± 0.067	0.633 ± 0.062	0.631 ± 0.085	0.594 ± 0.058	0.572 ± 0.097
$abalone - 20_v s_8 - 9 - 10 \ 0.806 \pm 0.04$		0.809 ± 0.043			0.884 ± 0.051	0.798 ± 0.055	0.806 ± 0.048	0.743 ± 0.109		
$abalone - 21_v s_8 - 0.798 \pm 0.11$		0.798 ± 0.116			0.839 ± 0.070	0.798 ± 0.117	0.799 ± 0.117			
$flare - F = 0.738 \pm 0.04$					0.777 ± 0.047	0.738 ± 0.045	0.738 ± 0.040		0.575 ± 0.068	
$kddcup - buffer_overflow_v s_back 0.993 \pm 0.01$					1.000 ± 0.000	0.993 ± 0.013	0.993 ± 0.013	0.997 ± 0.010		
$kddcup - rootkit - imap_v s_b ack 0.977 \pm 0.02$					0.977 ± 0.023	0.973 ± 0.030	0.977 ± 0.023	0.977 ± 0.042		
$kr - vs - k - zero_v s_e ight$ 0.937 \pm 0.05	0.934 ± 0.057	0.937 ± 0.052			0.950 ± 0.050	0.934 ± 0.057	0.937 ± 0.052	0.845 ± 0.076	0.701 ± 0.041	0.831 ± 0.108
$poker - 8 - 9_v s_5 0.625 \pm 0.06$	0.588 ± 0.066	0.617 ± 0.058			0.677 ± 0.074	0.614 ± 0.047	0.625 ± 0.067	0.634 ± 0.079	0.562 ± 0.085	0.575 ± 0.073
$poker - 8 - 9_v s_6 0.757 \pm 0.06$			0.744 ± 0.054			0.749 ± 0.086	0.757 ± 0.064		0.986 ± 0.037	
$poker - 8_v s_6 = 0.783 \pm 0.07$		0.783 ± 0.073	0.789 ± 0.066	0.746 ± 0.081	0.968 ± 0.051	0.789 ± 0.065	0.783 ± 0.073		0.950 ± 0.107	
$poker - 9_v s_7 0.636 \pm 0.10$		0.636 ± 0.104	0.636 ± 0.104			0.611 ± 0.087	0.636 ± 0.104			
$winequality - red - 3_v s_5 0.540 \pm 0.04$		0.539 ± 0.049			0.608 ± 0.057	0.550 ± 0.050	0.540 ± 0.049		0.526 ± 0.117	
$winequality - red - 4 \ 0.638 \pm 0.03$			0.644 ± 0.035			0.641 ± 0.034	0.637 ± 0.033		0.599 ± 0.051	0.609 ± 0.050
$winequality - red - 8_v s_6 - 7 \ 0.571 \pm 0.05$		0.572 ± 0.054	0.571 ± 0.054	0.555 ± 0.062	0.541 ± 0.063	0.557 ± 0.048	0.571 ± 0.054	0.542 ± 0.067	0.518 ± 0.081	0.550 ± 0.060
$winequality - red - 8_v s_6 0.614 \pm 0.03$		0.615 ± 0.031	0.615 ± 0.030	0.625 ± 0.030		0.625 ± 0.030	0.614 ± 0.031		0.609 ± 0.096	0.622 ± 0.079
$winequality - white - 3 - 9_v s_5$ 0.565 ± 0.05	0.529 ± 0.045	0.559 ± 0.057	0.560 ± 0.048	0.542 ± 0.039	0.685 ± 0.039	0.557 ± 0.051	0.565 ± 0.051		0.528 ± 0.055	0.565 ± 0.055
$winequality - white - 3_v s_7 = 0.533 \pm 0.04$		0.549 ± 0.066			0.756 ± 0.077	0.539 ± 0.047	0.533 ± 0.049		0.607 ± 0.121	0.594 ± 0.077
$winequality - white - 9_v s_4 0.815 \pm 0.13$			0.699 ± 0.218			0.815 ± 0.134	0.815 ± 0.134		0.707 ± 0.175	
$zoo - 3 \ 0.611 \ \pm \ 0.16$	$2 0.611 \pm 0.162$	0.611 ± 0.162	0.597 ± 0.163	0.611 ± 0.162	0.397 ± 0.275	0.611 ± 0.162	0.611 ± 0.162	0.547 ± 0.174	0.547 ± 0.174	0.000 ± 0.000
$ecoli1 \ 0.885 \pm 0.02$	0.886 ± 0.020	0.886 ± 0.020	0.884 ± 0.020	0.883 ± 0.024	0.889 ± 0.015	0.881 ± 0.022	0.884 ± 0.026	0.875 ± 0.033	0.576 ± 0.145	0.000 ± 0.000
$ecoli2 \ 0.940 \pm 0.02$			0.940 ± 0.026			0.942 ± 0.022	0.939 ± 0.025		0.604 ± 0.146	
$ecoli3 \ 0.889 \pm 0.02$			0.894 ± 0.017			0.887 ± 0.021	0.892 ± 0.021	0.858 ± 0.056		
$glass0 \ 0.779 \pm 0.04$			0.778 ± 0.037			0.792 ± 0.034	0.778 ± 0.036		0.724 ± 0.065	
$glass1 0.701 \pm 0.03$		0.690 ± 0.038			0.677 ± 0.038	0.698 ± 0.039	0.701 ± 0.044	0.694 ± 0.062		
$haberman 0.611 \pm 0.02$		0.619 ± 0.026	0.597 ± 0.031			0.614 ± 0.034	0.611 ± 0.028	0.613 ± 0.039		
$page-blocks0$ 0.931 ± 0.00		0.931 ± 0.007	0.923 ± 0.009			0.930 ± 0.008	0.932 ± 0.008		0.892 ± 0.025	
$pima 0.727 \pm 0.03$		0.729 ± 0.023	0.726 ± 0.022			0.732 ± 0.028	0.728 ± 0.032	0.706 ± 0.018		
$vehicle1 0.789 \pm 0.02$		0.790 ± 0.026	0.790 ± 0.020			0.791 ± 0.019	0.793 ± 0.025		0.804 ± 0.018	
$vehicle3 0.789 \pm 0.02$			0.797 ± 0.026			0.789 ± 0.018	0.790 ± 0.021		0.789 ± 0.027	
$yeast1 = 0.711 \pm 0.01$					0.713 ± 0.011	0.709 ± 0.014	0.712 ± 0.013		0.507 ± 0.002	
$yeast3 - 0.893 \pm 0.02$	0.884 ± 0.027	0.894 ± 0.020	0.893 ± 0.026	0.888 ± 0.020	0.896 ± 0.020	0.895 ± 0.023	0.893 ± 0.022	0.867 ± 0.019	0.504 ± 0.003	0.000 ± 0.000

Table 12. KNN – G-mean

Dataset name	SMOTE	polynom-fit-SMOTE	Lee	SMOBD	G-SMOTE	IVO-SMOTE	Assembled-SMOT	E SMOTE-TomekLinks	JFOTS-pr	IFOTS-re	JFOTS-prom
	0.392 ± 0.183	0.189 ± 0.159	0.392 ± 0.183	0.392 ± 0.183	0.319 ± 0.174	0.390 ± 0.106	0.388 ± 0.176	0.392 ± 0.183			0.322 ± 0.183
abalone9 - 18		0.666 ± 0.064			0.662 ± 0.069		0.687 ± 0.056	0.696 ± 0.044			0.534 ± 0.088
$ecoli - 0 - 1 - 3 - 7_v s_2 - 6$	0.817 ± 0.096	0.818 ± 0.097	0.817 ± 0.096	0.816 ± 0.096	0.818 ± 0.097	0.816 ± 0.097	0.817 ± 0.096	0.817 ± 0.096	0.771 ± 0.135	0.771 ± 0.133	0.797 ± 0.117
$glass - 0 - 1 - 6_v s_2$	0.704 ± 0.096	0.663 ± 0.056	0.697 ± 0.092	0.699 ± 0.094	0.679 ± 0.069	0.629 ± 0.089	0.709 ± 0.095	0.703 ± 0.095	0.591 ± 0.066	0.456 ± 0.254	0.597 ± 0.145
$glass - 0 - 1 - 6_v s_5$	0.905 ± 0.110	0.906 ± 0.111	0.905 ± 0.110	0.904 ± 0.111	0.873 ± 0.175	0.863 ± 0.158	0.904 ± 0.110	0.905 ± 0.110	0.859 ± 0.157	0.767 ± 0.326	0.756 ± 0.213
	0.543 ± 0.246	0.523 ± 0.291	0.522 ± 0.300		0.513 ± 0.288	0.551 ± 0.222	0.520 ± 0.295	0.541 ± 0.245	0.562 ± 0.21		
	0.897 ± 0.063	0.898 ± 0.075	0.870 ± 0.063				0.888 ± 0.054	0.897 ± 0.063			0.719 ± 0.090
	0.917 ± 0.145	0.919 ± 0.146	0.906 ± 0.151	0.917 ± 0.145		0.849 ± 0.125	0.917 ± 0.145	0.917 ± 0.145			0.802 ± 0.164
$page - blocks - 1 - 3_v s_4$			0.982 ± 0.023	0.983 ± 0.023		0.980 ± 0.016	0.976 ± 0.026	0.983 ± 0.023		0.821 ± 0.096	
$yeast - 0 - 5 - 6 - 7 - 9_v s_4$		0.730 ± 0.045	0.717 ± 0.050		0.713 ± 0.066	0.717 ± 0.054	0.702 ± 0.043	0.711 ± 0.052			0.579 ± 0.108
$yeast - 1 - 2 - 8 - 9_v s_7$		0.654 ± 0.060 0.528 ± 0.098		0.634 ± 0.055 0.543 ± 0.086		0.621 ± 0.079 0.519 ± 0.063	0.638 ± 0.067 0.563 ± 0.062	0.646 ± 0.063 0.573 ± 0.052			0.362 ± 0.188 0.202 ± 0.220
$yeast - 1 - 4 - 5 - 8_v s_7$ $yeast - 1_v s_7$		0.528 ± 0.098 0.711 ± 0.049		0.543 ± 0.086 0.726 ± 0.047			0.563 ± 0.062 0.688 ± 0.058	0.573 ± 0.052 0.713 ± 0.039			0.202 ± 0.220 0.314 ± 0.269
$yeast = 1_v s_7$ $yeast = 2_v s_4$		0.857 ± 0.039		0.867 ± 0.034			0.870 ± 0.030	0.869 ± 0.034			0.816 ± 0.055
$yeast - 2_v s_s$		0.791 ± 0.059	0.782 ± 0.058	0.789 ± 0.065		0.792 ± 0.068	0.787 ± 0.063	0.789 ± 0.063		0.084 ± 0.251	
	0.702 ± 0.035	0.704 ± 0.046	0.702 ± 0.036		0.675 ± 0.048		0.708 ± 0.051	0.702 ± 0.034			0.539 ± 0.103
	0.927 ± 0.040	0.917 ± 0.039	0.922 ± 0.040			0.931 ± 0.052	0.927 ± 0.037	0.927 ± 0.040		0.000 ± 0.000	
	0.802 ± 0.054	0.802 ± 0.047	0.802 ± 0.054	0.801 ± 0.054	0.797 ± 0.056	0.826 ± 0.038	0.795 ± 0.053	0.802 ± 0.054	0.680 ± 0.108	0.000 ± 0.000	0.747 ± 0.051
$cleveland - 0_v s_4$	0.869 ± 0.083	0.863 ± 0.039	0.878 ± 0.031	0.868 ± 0.082	0.867 ± 0.038	0.794 ± 0.087	0.880 ± 0.027	0.869 ± 0.083	0.698 ± 0.119	0.605 ± 0.313	0.635 ± 0.240
$ecoli - 0 - 1 - 4 - 7_v s_2 - 3 - 5 - 6$		0.874 ± 0.026	0.878 ± 0.020	0.873 ± 0.020	0.882 ± 0.024	0.874 ± 0.030	0.880 ± 0.022	0.882 ± 0.019	0.672 ± 0.180	0.273 ± 0.300	0.784 ± 0.122
$ecoli - 0 - 1_v s_2 - 3 - 5$		0.882 ± 0.030	0.873 ± 0.029				0.882 ± 0.034	0.880 ± 0.028			0.808 ± 0.073
$ecoli - 0 - 2 - 6 - 7_v s_3 - 5$		0.829 ± 0.060	0.833 ± 0.068			0.834 ± 0.042	0.830 ± 0.057	0.830 ± 0.058			0.831 ± 0.032
$ecoli - 0 - 6 - 7_v s_3 - 5$		0.848 ± 0.060		0.850 ± 0.059			0.844 ± 0.060	0.845 ± 0.060			0.780 ± 0.095
$ecoli - 0 - 6 - 7_v s_5$		0.856 ± 0.066	0.860 ± 0.050				0.859 ± 0.054	0.860 ± 0.053			0.854 ± 0.075
$glass - 0 - 1 - 4 - 6_v s_2$			0.628 ± 0.162		0.587 ± 0.156	0.573 ± 0.087	0.617 ± 0.164	0.629 ± 0.139			0.403 ± 0.234
$glass - 0 - 1 - 5_v s_2$ $weast - 0 - 2 - 5 - 6_v s_3 - 7 - 8 - 9$		0.660 ± 0.063 0.760 ± 0.030			0.638 ± 0.122 0.767 ± 0.034	0.602 ± 0.078 0.755 ± 0.036	0.669 ± 0.068 0.768 ± 0.035	0.661 ± 0.070 0.768 ± 0.036		0.418 ± 0.323 0.219 ± 0.202	0.494 ± 0.218
$yeast - 0 - 2 - 3 - 6_v s_3 - 1 - 8 - 9$ $yeast - 0 - 3 - 5 - 9_v s_7 - 8$		0.760 ± 0.030 0.649 ± 0.043		0.652 ± 0.028		0.753 ± 0.036 0.653 ± 0.065	0.650 ± 0.035	0.768 ± 0.036 0.664 ± 0.044			0.629 ± 0.036 0.386 ± 0.196
$yeast - 0 - 3 - 3 - 9_v s_7 - 8$ $abalone - 17_v s_7 - 8 - 9 - 10$		0.649 ± 0.043 0.672 ± 0.048		0.652 ± 0.050 0.717 ± 0.060			0.650 ± 0.057 0.714 ± 0.059	0.721 ± 0.061			0.386 ± 0.196 0.442 ± 0.233
$abalone - 19_v s_1 0 - 11 - 12 - 13$		0.379 ± 0.064		0.500 ± 0.091		0.454 ± 0.085	0.462 ± 0.085	0.492 ± 0.070			0.291 ± 0.203
$abalone - 20_v s_8 - 9 - 10$		0.580 ± 0.004		0.728 ± 0.093		0.661 ± 0.085	0.696 ± 0.129	0.708 ± 0.085			0.544 ± 0.115
$abalone - 21_v s_8$ C			0.793 ± 0.092			0.769 ± 0.082	0.801 ± 0.098	0.810 ± 0.104			0.633 ± 0.150
flare - F	0.651 ± 0.061	0.619 ± 0.057	0.647 ± 0.072	0.651 ± 0.063	0.614 ± 0.068	0.654 ± 0.053	0.653 ± 0.057	0.651 ± 0.062	0.286 ± 0.168	0.043 ± 0.085	0.328 ± 0.193
$kddcup - buffer_overflow_v s_back$	0.954 ± 0.051	0.954 ± 0.051	0.954 ± 0.051	0.954 ± 0.051	0.944 ± 0.054	0.958 ± 0.044	0.944 ± 0.046	0.954 ± 0.051	0.954 ± 0.048	0.954 ± 0.048	0.954 ± 0.048
$kddcup - rootkit - imap_v s_back$ (0.962 ± 0.043		0.972 ± 0.023		0.943 ± 0.029	0.952 ± 0.055	0.972 ± 0.023	0.962 ± 0.042	0.962 ± 0.042	0.962 ± 0.042
$kr - vs - k - zero_v s_e ight$		0.926 ± 0.057		0.941 ± 0.052			0.924 ± 0.066	0.937 ± 0.052			0.588 ± 0.393
$poker - 8 - 9_v s_5$		0.406 ± 0.091	0.498 ± 0.136			0.577 ± 0.084	0.492 ± 0.132	0.486 ± 0.126		0.086 ± 0.173	
$poker - 8 - 9_v s_6$		0.908 ± 0.036		0.947 ± 0.041			0.936 ± 0.032	0.948 ± 0.042	0.987 ± 0.040		
$poker - 8_v s_6$		0.838 ± 0.067				0.978 ± 0.018	0.926 ± 0.087	0.940 ± 0.065		0.918 ± 0.138	
$poker - 9_v s_7$ $winequality - red - 3_v s_7$		0.773 ± 0.291 0.371 ± 0.193		0.773 ± 0.291		0.723 ± 0.265 0.392 ± 0.208	0.761 ± 0.284 0.371 ± 0.192	0.773 ± 0.290 0.388 ± 0.206			0.558 ± 0.393 0.324 ± 0.219
winequality $- red - 3_v s_5$ winequality $- red - 4$		0.371 ± 0.193 0.484 ± 0.086	0.388 ± 0.206 0.523 ± 0.055		0.371 ± 0.193 0.482 ± 0.074		0.371 ± 0.192 0.535 ± 0.039	0.388 ± 0.206 0.525 ± 0.046			0.324 ± 0.219 0.415 ± 0.102
winequality $-red - 4$ winequality $-red - 8_v s_6 - 7$		0.334 ± 0.202		0.345 ± 0.035			0.356 ± 0.059	0.323 ± 0.040 0.332 ± 0.195		0.232 ± 0.246	
winequality $- red - 8_e s_6 - r$ winequality $- red - 8_e s_6$			0.545 ± 0.197 0.555 ± 0.089		0.486 ± 0.100	0.496 ± 0.102	0.567 ± 0.074	0.573 ± 0.083		0.232 ± 0.240 0.403 ± 0.231	
winequality – white – 3 – $9_v s_5$ (0.532 ± 0.068	0.532 ± 0.067		0.462 ± 0.111	0.496 ± 0.072	0.533 ± 0.061			0.390 ± 0.160
winequality – white – $3_v s_7$		0.360 ± 0.208		0.465 ± 0.255			0.479 ± 0.264	0.489 ± 0.249			0.354 ± 0.196
$winequality - white - 9_v s_4$		0.869 ± 0.109	0.865 ± 0.105			0.653 ± 0.351	0.865 ± 0.105	0.865 ± 0.105			0.567 ± 0.383
	0.769 ± 0.280	0.769 ± 0.280	0.769 ± 0.280	0.545 ± 0.387	0.769 ± 0.280	0.516 ± 0.362	0.769 ± 0.280	0.769 ± 0.280	0.410 ± 0.343	0.410 ± 0.343	0.000 ± 0.000
ecoli1	0.863 ± 0.027	0.862 ± 0.021	0.867 ± 0.030	0.870 ± 0.025	0.869 ± 0.027	0.863 ± 0.030	0.862 ± 0.034	0.866 ± 0.023	0.793 ± 0.068	0.162 ± 0.325	0.000 ± 0.000
ecoli2	0.914 ± 0.029	0.921 ± 0.027	0.911 ± 0.028	0.913 ± 0.028	0.918 ± 0.030	0.911 ± 0.021	0.913 ± 0.027	0.914 ± 0.029			0.000 ± 0.000
	0.865 ± 0.020	0.856 ± 0.023		0.858 ± 0.026		0.850 ± 0.029	0.860 ± 0.019	0.865 ± 0.016			0.000 ± 0.000
	0.787 ± 0.035	0.794 ± 0.037		0.789 ± 0.028	0.789 ± 0.028	0.785 ± 0.040	0.796 ± 0.030	0.796 ± 0.035			0.000 ± 0.000
	0.736 ± 0.049	0.747 ± 0.053		0.746 ± 0.039	0.737 ± 0.043		0.735 ± 0.031	0.736 ± 0.053			0.000 ± 0.000
	0.595 ± 0.037	0.601 ± 0.051	0.575 ± 0.055	0.580 ± 0.026	0.575 ± 0.050	0.570 ± 0.045	0.574 ± 0.038	0.594 ± 0.031			0.000 ± 0.000
page-blocks0		0.909 ± 0.013		0.920 ± 0.012		0.881 ± 0.018	0.931 ± 0.009	0.929 ± 0.010			0.000 ± 0.000
	0.684 ± 0.021 0.722 ± 0.026	0.706 ± 0.019 0.739 ± 0.018		0.687 ± 0.016 0.735 ± 0.025		0.688 ± 0.022 0.718 ± 0.023	0.686 ± 0.017 0.730 ± 0.023	0.692 ± 0.024 0.723 ± 0.027			0.000 ± 0.000 0.000 ± 0.000
	0.722 ± 0.026 0.707 ± 0.019	0.739 ± 0.018 0.696 ± 0.030		0.735 ± 0.025 0.717 ± 0.025		0.718 ± 0.023 0.688 ± 0.024	0.730 ± 0.023 0.711 ± 0.021	0.723 ± 0.027 0.705 ± 0.020			0.000 ± 0.000 0.000 ± 0.000
	0.674 ± 0.019	0.690 ± 0.014		0.674 ± 0.025			0.673 ± 0.014	0.677 ± 0.020			0.000 ± 0.000
	0.871 ± 0.019	0.871 ± 0.023		0.865 ± 0.025			0.872 ± 0.019	0.870 ± 0.019			0.000 ± 0.000
					= 0.020						

Table 13. CART – Precision

Dataset name SMOTE	polynom-fit-SMOT		SMOBD				SMOTE-TomekLink			JFOTS-prom
$abalone19 \ 0.028 \pm 0.014$	0.013 ± 0.019	0.023 ± 0.014	0.031 ± 0.013	0.038 ± 0.035	0.018 ± 0.015	0.026 ± 0.012	0.028 ± 0.014	0.009 ± 0.015	0.011 ± 0.010	0.012 ± 0.008
$abalone9 - 18 \ 0.236 \pm 0.058$	0.222 ± 0.067	0.237 ± 0.029	0.256 ± 0.070	0.270 ± 0.050	0.196 ± 0.057	0.224 ± 0.048	0.230 ± 0.057	0.341 ± 0.078	0.147 ± 0.117	0.260 ± 0.116
$ecoli - 0 - 1 - 3 - 7_v s_2 - 6 0.438 \pm 0.237$	0.488 ± 0.186	0.438 ± 0.237	0.438 ± 0.237	0.488 ± 0.186	0.433 ± 0.240	0.438 ± 0.237	0.438 ± 0.237	0.335 ± 0.271	0.149 ± 0.124	0.363 ± 0.262
$glass - 0 - 1 - 6_v s_2 0.253 \pm 0.080$	0.222 ± 0.146	0.281 ± 0.059		0.268 ± 0.116		0.262 ± 0.128	0.254 ± 0.087	0.328 ± 0.180	0.180 ± 0.070	0.323 ± 0.238
$glass - 0 - 1 - 6_v s_5 \ 0.759 \ \pm \ 0.181$	0.704 ± 0.145	0.759 ± 0.181	0.759 ± 0.181	0.604 ± 0.280	0.747 ± 0.186	0.759 ± 0.181	0.759 ± 0.181	0.583 ± 0.228	0.534 ± 0.207	0.587 ± 0.342
$glass2 0.214 \pm 0.174$	0.174 ± 0.128			0.240 ± 0.221		0.204 ± 0.153	0.228 ± 0.173	0.205 ± 0.141	0.151 ± 0.111	0.230 ± 0.130
$glass4 0.610 \pm 0.155$	0.573 ± 0.117			0.580 ± 0.186		0.612 ± 0.176	0.610 ± 0.155		0.552 ± 0.321	
$glass5 0.693 \pm 0.211$	0.620 ± 0.145	0.693 ± 0.211	0.693 ± 0.211	0.660 ± 0.184	0.734 ± 0.202	0.693 ± 0.211	0.693 ± 0.211	0.665 ± 0.150	0.710 ± 0.238	0.566 ± 0.220
$page - blocks - 1 - 3_v s_4 \ 0.931 \ \pm \ 0.030$	0.865 ± 0.080	0.930 ± 0.031	0.906 ± 0.076	0.922 ± 0.046	0.777 ± 0.084	0.928 ± 0.035	0.931 ± 0.030	0.846 ± 0.085	0.719 ± 0.267	0.857 ± 0.136
$yeast - 0 - 5 - 6 - 7 - 9_v s_4 0.340 \pm 0.051$	0.377 ± 0.045			0.355 ± 0.072		0.353 ± 0.044	0.348 ± 0.079		0.096 ± 0.003	0.336 ± 0.066
$yeast - 1 - 2 - 8 - 9_v s_7 - 0.101 \pm 0.020$	0.133 ± 0.063			0.130 ± 0.047		0.098 ± 0.017	0.113 ± 0.033		0.032 ± 0.000	
$yeast - 1 - 4 - 5 - 8_v s_7 0.072 \pm 0.044$	0.112 ± 0.041			0.076 ± 0.048		0.086 ± 0.025	0.070 ± 0.048		0.044 ± 0.000	
$yeast - 1_v s_7 - 0.203 \pm 0.070$	0.234 ± 0.065		0.214 ± 0.056			0.186 ± 0.051	0.198 ± 0.071		0.055 ± 0.029	
$yeast - 2_v s_4 = 0.621 \pm 0.047$	0.673 ± 0.044			0.653 ± 0.079		0.676 ± 0.055	0.619 ± 0.059		0.259 ± 0.269	
$yeast - 2_v s_8 = 0.273 \pm 0.116$	0.518 ± 0.154		0.346 ± 0.088			0.386 ± 0.144	0.287 ± 0.113		0.044 ± 0.005	
$yeast4 = 0.223 \pm 0.033$	0.258 ± 0.052			0.216 ± 0.059		0.237 ± 0.092	0.226 ± 0.035		0.034 ± 0.001	
$yeast5 0.649 \pm 0.091$	0.624 ± 0.086	0.623 ± 0.080	0.618 ± 0.101	0.638 ± 0.056	0.393 ± 0.060	0.646 ± 0.077	0.655 ± 0.095	0.643 ± 0.099	0.030 ± 0.000	0.546 ± 0.191
$yeast6 0.269 \pm 0.050$	0.272 ± 0.072	0.281 ± 0.096		0.354 ± 0.070		0.288 ± 0.081	0.273 ± 0.051		0.025 ± 0.003	0.323 ± 0.092
$cleveland - 0_v s_4 \ 0.558 \pm 0.149$	0.419 ± 0.187			0.491 ± 0.209		0.555 ± 0.136	0.558 ± 0.149		0.454 ± 0.243	
$ecoli - 0 - 1 - 4 - 7_v s_2 - 3 - 5 - 6 \ 0.502 \pm 0.110$	0.583 ± 0.115			0.536 ± 0.073		0.589 ± 0.116	0.539 ± 0.140		0.119 ± 0.161	
$ecoli - 0 - 1_v s_2 - 3 - 5 0.654 \pm 0.151$	0.708 ± 0.060			0.620 ± 0.134		0.614 ± 0.178	0.611 ± 0.143		0.337 ± 0.315	
$ecoli - 0 - 2 - 6 - 7_v s_3 - 5 0.581 \pm 0.102$	0.691 ± 0.140	0.566 ± 0.113	0.608 ± 0.128	0.606 ± 0.057	0.470 ± 0.121	0.547 ± 0.134	0.607 ± 0.110	0.666 ± 0.136	0.174 ± 0.221	0.634 ± 0.135
$ecoli - 0 - 6 - 7_v s_3 - 5 0.563 \pm 0.149$	0.746 ± 0.229	0.608 ± 0.165	0.586 ± 0.161			0.537 ± 0.145	0.570 ± 0.143	0.716 ± 0.165	0.277 ± 0.279	0.636 ± 0.236
$ecoli - 0 - 6 - 7_v s_5 0.697 \pm 0.197$	0.744 ± 0.157	0.676 ± 0.216	0.687 ± 0.224	0.775 ± 0.182	0.545 ± 0.136	0.688 ± 0.200	0.676 ± 0.205	0.764 ± 0.156	0.268 ± 0.302	0.758 ± 0.146
$glass - 0 - 1 - 4 - 6_v s_2 0.231 \pm 0.080$	0.164 ± 0.111			0.244 ± 0.101		0.184 ± 0.099	0.201 ± 0.102		0.130 ± 0.041	
$glass - 0 - 1 - 5_v s_2 0.335 \pm 0.060$	0.249 ± 0.137	0.392 ± 0.230	0.340 ± 0.138	0.317 ± 0.152	0.181 ± 0.077	0.300 ± 0.102	0.338 ± 0.098	0.281 ± 0.130	0.180 ± 0.098	0.173 ± 0.107
$yeast - 0 - 2 - 5 - 6_v s_3 - 7 - 8 - 9 0.377 \pm 0.050$	0.444 ± 0.067	0.409 ± 0.051	0.394 ± 0.055	0.416 ± 0.048	0.395 ± 0.052	0.373 ± 0.056	0.359 ± 0.046	0.409 ± 0.162	0.185 ± 0.168	0.414 ± 0.096
$yeast - 0 - 3 - 5 - 9_v s_7 - 8 \ 0.206 \pm 0.036$	0.326 ± 0.058	0.237 ± 0.046	0.226 ± 0.055	0.240 ± 0.062	0.233 ± 0.062	0.230 ± 0.031	0.244 ± 0.044	0.230 ± 0.196	0.105 ± 0.014	0.188 ± 0.086
$abalone - 17_v s_7 - 8 - 9 - 10 \ 0.162 \pm 0.052$	0.229 ± 0.038	0.160 ± 0.023	0.172 ± 0.037	0.205 ± 0.050	0.155 ± 0.033	0.176 ± 0.045	0.161 ± 0.053	0.236 ± 0.078	0.088 ± 0.070	0.139 ± 0.086
$abalone - 19_v s_1 0 - 11 - 12 - 13 0.049 \pm 0.022$	0.040 ± 0.031			0.050 ± 0.037		0.055 ± 0.018	0.053 ± 0.016		0.020 ± 0.013	
$abalone - 20_v s_8 - 9 - 10 \ 0.155 \pm 0.024$	0.128 ± 0.097			0.169 ± 0.069		0.161 ± 0.045	0.156 ± 0.024		0.049 ± 0.032	
$abalone - 21_v s_8 - 0.278 \pm 0.171$	0.354 ± 0.197			0.382 ± 0.208		0.281 ± 0.179	0.285 ± 0.173		0.240 ± 0.210	
$flare - F = 0.155 \pm 0.060$	0.247 ± 0.080	0.175 ± 0.067	0.187 ± 0.051	0.224 ± 0.070	0.215 ± 0.094	0.177 ± 0.058	0.180 ± 0.044	0.197 ± 0.121	0.051 ± 0.018	0.201 ± 0.077
$kddcup - buffer_overflow_v s_back 1.000 \pm 0.000$	1.000 ± 0.000				1.000 ± 0.000	1.000 ± 0.000	1.000 ± 0.000		1.000 ± 0.000	
$kddcup - rootkit - imap_v s_b ack 1.000 \pm 0.000$	1.000 ± 0.000				1.000 ± 0.000	1.000 ± 0.000	1.000 ± 0.000		1.000 ± 0.000	
$kr - vs - k - zero_v s_e ight$ 0.881 ± 0.077	0.888 ± 0.067			0.895 ± 0.093		0.901 ± 0.094	0.881 ± 0.077		0.045 ± 0.016	
$poker - 8 - 9_v s_5 0.066 \pm 0.033$	0.079 ± 0.065			0.059 ± 0.059		0.049 ± 0.022	0.066 ± 0.033	0.061 ± 0.083	0.031 ± 0.042	0.052 ± 0.061
$poker - 8 - 9_v s_6 0.247 \pm 0.095$	0.643 ± 0.299			0.469 ± 0.318		0.274 ± 0.188	0.247 ± 0.095		0.934 ± 0.107	
$poker - 8_v s_6 = 0.509 \pm 0.330$	0.375 ± 0.281			0.503 ± 0.308		0.474 ± 0.347	0.509 ± 0.330		0.967 ± 0.100	
$poker - 9_v s_7 0.166 \pm 0.198$	0.120 ± 0.126			0.199 ± 0.209		0.148 ± 0.176	0.166 ± 0.198		0.272 ± 0.317	
$winequality - red - 3_v s_5$ 0.026 ± 0.045	0.073 ± 0.151			0.026 ± 0.061		0.034 ± 0.059	0.026 ± 0.045		0.053 ± 0.096	
$winequality - red - 4 0.072 \pm 0.035$	0.060 ± 0.028			0.104 ± 0.048		0.069 ± 0.012	0.071 ± 0.036		0.049 ± 0.021	
$winequality - red - 8_v s_6 - 7 0.060 \pm 0.045$	0.072 ± 0.045			0.074 ± 0.063		0.061 ± 0.041	0.060 ± 0.045		0.050 ± 0.063	
$winequality - red - 8_v s_6 0.123 \pm 0.048$	0.201 ± 0.174			0.132 ± 0.087		0.140 ± 0.054	0.123 ± 0.048		0.105 ± 0.079	
winequality $-$ white $-3 - 9_v s_5$ 0.059 ± 0.048	0.055 ± 0.038				0.101 ± 0.029	0.041 ± 0.024	0.059 ± 0.048	0.059 ± 0.055		
$winequality - white - 3_v s_7 0.068 \pm 0.047$	0.111 ± 0.088				0.252 ± 0.070	0.047 ± 0.044	0.068 ± 0.047	0.097 ± 0.056		
$winequality - white - 9_v s_4 = 0.377 \pm 0.294$	0.345 ± 0.283			0.368 ± 0.277		0.360 ± 0.282	0.377 ± 0.294	0.167 ± 0.300		
$zoo - 3 \ 0.196 \pm 0.192$	0.170 ± 0.169				0.579 ± 0.380	0.334 ± 0.365	0.196 ± 0.192	0.104 ± 0.163	0.104 ± 0.163	0.000 ± 0.000
$ecoli1 \ 0.715 \pm 0.043$	0.705 ± 0.047			0.718 ± 0.024		0.712 ± 0.038	0.731 ± 0.043	0.608 ± 0.085		
$ecoli2 - 0.706 \pm 0.080$	0.702 ± 0.097			0.708 ± 0.104		0.692 ± 0.099	0.724 ± 0.092		0.270 ± 0.271	
$ecoli3 0.474 \pm 0.059$	0.504 ± 0.083			0.497 ± 0.076		0.486 ± 0.068	0.482 ± 0.062		0.198 ± 0.178	0.000 ± 0.000
$glass0 \ 0.637 \pm 0.044$	0.656 ± 0.076			0.664 ± 0.094		0.710 ± 0.111	0.660 ± 0.066		0.563 ± 0.126	
$glass1 0.620 \pm 0.044$	0.649 ± 0.047		0.629 ± 0.079		0.610 ± 0.061	0.620 ± 0.072	0.625 ± 0.041		0.441 ± 0.107	
$haberman 0.366 \pm 0.040$	0.350 ± 0.027		0.345 ± 0.055			0.344 ± 0.063	0.388 ± 0.055		0.327 ± 0.105	
$page-blocks0~0.763\pm0.029$	0.798 ± 0.020			0.787 ± 0.018		0.765 ± 0.028	0.771 ± 0.024		0.785 ± 0.025	
$pima 0.552 \pm 0.030$	0.566 ± 0.022		0.556 ± 0.028			0.550 ± 0.031	0.559 ± 0.034		0.484 ± 0.051	
$vehicle1 \ 0.495 \pm 0.033$	0.498 ± 0.039			0.486 ± 0.033		0.491 ± 0.030	0.503 ± 0.025		0.498 ± 0.031	
$vehicle3 \ 0.471 \pm 0.033$	0.512 ± 0.040		0.477 ± 0.038	0.475 ± 0.027		0.490 ± 0.025	0.473 ± 0.028		0.495 ± 0.035	0.000 ± 0.000
$yeast1 = 0.470 \pm 0.023$	0.495 ± 0.029			0.477 ± 0.014		0.484 ± 0.033	0.474 ± 0.016		0.292 ± 0.001	
$yeast3 - 0.687 \pm 0.048$	0.689 ± 0.064	0.670 ± 0.045	0.661 ± 0.042	0.675 ± 0.052	0.629 ± 0.056	0.682 ± 0.048	0.684 ± 0.046	0.690 ± 0.042	0.111 ± 0.001	0.000 ± 0.000

Table 14. SVM – Precision

Dataset name SMC	TE polynom-fit-SMO	TE Lee	SMOBD	G-SMOTE	LVQ-SMOTE	Assembled-SMOT	E SMOTE-TomekLinks	JFOTS-pr	JFOTS-rc	JFOTS-prom
abalone19 0.019 ±	0.008 0.026 ± 0.013	0.019 ± 0.008	0.020 ± 0.008	0.022 ± 0.008	0.024 ± 0.006	0.019 ± 0.008	0.019 ± 0.008	0.017 ± 0.009	0.011 ± 0.004	0.012 ± 0.002
abalone9 - 18 0.247 ±	0.040 0.361 ± 0.062	0.239 ± 0.030	0.254 ± 0.052	0.250 ± 0.055	0.334 ± 0.077	0.240 ± 0.042	0.245 ± 0.039	0.523 ± 0.193	0.146 ± 0.090	0.361 ± 0.244
$ecoli - 0 - 1 - 3 - 7_v s_2 - 6 0.775 \pm$	0.287 0.842 ± 0.256	0.544 ± 0.260	0.648 ± 0.273	0.802 ± 0.308	0.297 ± 0.239	0.725 ± 0.287	0.775 ± 0.287	0.383 ± 0.252	0.284 ± 0.098	0.408 ± 0.250
$glass - 0 - 1 - 6_v s_2$ 0.294 ±	0.091 0.315 ± 0.098	0.276 ± 0.073	0.283 ± 0.081	0.285 ± 0.076	0.194 ± 0.057	0.292 ± 0.081	0.293 ± 0.093	0.260 ± 0.084	0.181 ± 0.089	0.262 ± 0.088
$glass - 0 - 1 - 6_v s_5$ 0.837 ±	0.170 0.845 ± 0.198	0.837 ± 0.170	0.837 ± 0.170	0.840 ± 0.179	0.592 ± 0.267	0.837 ± 0.170	0.837 ± 0.170	0.636 ± 0.331	0.386 ± 0.134	0.465 ± 0.219
glass2 0.189 ±	0.107 0.210 ± 0.117	0.192 ± 0.106	0.185 ± 0.103	0.195 ± 0.107	0.218 ± 0.126	0.192 ± 0.112	0.188 ± 0.106	0.171 ± 0.126	0.147 ± 0.070	0.149 ± 0.073
glass4 0.768 ±	0.106 0.755 ± 0.111	0.749 ± 0.105	0.749 ± 0.105	0.782 ± 0.125	5 0.485 ± 0.113	0.770 ± 0.134	0.768 ± 0.106	0.741 ± 0.153	0.445 ± 0.230	
glass5 0.788 ±	0.151 0.823 ± 0.151	0.803 ± 0.139	0.803 ± 0.139	0.771 ± 0.179	0.454 ± 0.232	0.788 ± 0.151	0.788 ± 0.151	0.630 ± 0.202	0.566 ± 0.297	0.438 ± 0.245
$page - blocks - 1 - 3_v s_4 - 0.650 \pm$	0.107 0.801 ± 0.131	0.658 ± 0.109	0.640 ± 0.112	0.637 ± 0.128	0.490 ± 0.089	0.613 ± 0.102	0.650 ± 0.107	0.516 ± 0.318	0.411 ± 0.263	0.584 ± 0.217
$yeast - 0 - 5 - 6 - 7 - 9_v s_4 = 0.384 \pm$	0.063 0.448 ± 0.079	0.390 ± 0.066	0.410 ± 0.082	0.388 ± 0.083	0.391 ± 0.051	0.392 ± 0.073	0.381 ± 0.064	0.506 ± 0.106	0.096 ± 0.003	0.361 ± 0.142
$yeast - 1 - 2 - 8 - 9_v s_7$ 0.072 ±	0.020 0.072 ± 0.023	0.070 ± 0.021	0.074 ± 0.028	0.088 ± 0.032	0.125 ± 0.029	0.071 ± 0.025	0.074 ± 0.020	0.236 ± 0.297	0.032 ± 0.000	0.121 ± 0.138
$yeast - 1 - 4 - 5 - 8_v s_7$ 0.076 ±	0.024 0.080 ± 0.027	0.073 ± 0.021	0.070 ± 0.016	0.080 ± 0.023	0.095 ± 0.017	0.068 ± 0.014	0.076 ± 0.023	0.069 ± 0.038	0.044 ± 0.000	0.061 ± 0.011
$yeast - 1_v s_7 = 0.194 \pm$	0.039 0.211 ± 0.044	0.193 ± 0.039	0.193 ± 0.038	0.190 ± 0.041	0.205 ± 0.054	0.184 ± 0.032	0.193 ± 0.040	0.356 ± 0.217	0.068 ± 0.007	0.266 ± 0.261
$yeast - 2_v s_4 = 0.685 \pm$	0.065 0.710 ± 0.067	0.667 ± 0.066	0.683 ± 0.058	0.651 ± 0.089	0.641 ± 0.070	0.670 ± 0.063	0.689 ± 0.068	0.826 ± 0.137	0.291 ± 0.297	0.696 ± 0.104
$yeast - 2s_8 - 0.429 \pm$	0.292 0.888 ± 0.121	0.451 ± 0.277	0.493 ± 0.285	0.518 ± 0.321	0.588 ± 0.095	0.355 ± 0.206	0.429 ± 0.292	0.617 ± 0.343	0.044 ± 0.004	0.433 ± 0.331
yeast4 0.201 ±	0.031 0.255 ± 0.033	0.204 ± 0.030	0.208 ± 0.030	0.207 ± 0.028	0.197 ± 0.036	0.205 ± 0.029	0.201 ± 0.031	0.387 ± 0.131	0.034 ± 0.001	0.211 ± 0.108
yeast5 0.502 ±	0.067 0.541 ± 0.081	0.502 ± 0.065	0.504 ± 0.072	0.515 ± 0.077	0.347 ± 0.043	0.502 ± 0.064	0.502 ± 0.067	0.555 ± 0.125	0.030 ± 0.000	0.445 ± 0.179
yeast6 0.306 ±				0.320 ± 0.042		0.297 ± 0.045	0.306 ± 0.042	0.464 ± 0.139		
$cleveland - 0_v s_4 = 0.797 \pm$		0.805 ± 0.158	0.813 ± 0.153	0.788 ± 0.163	0.665 ± 0.093	0.802 ± 0.158	0.797 ± 0.159	0.481 ± 0.172	0.369 ± 0.229	0.317 ± 0.181
$ecoli - 0 - 1 - 4 - 7 - 8 - 3 - 5 - 6 - 0.732 \pm$	0.067 0.814 ± 0.037	0.710 ± 0.057	0.733 ± 0.068	0.711 ± 0.099	0.588 ± 0.080	0.688 ± 0.108	0.732 ± 0.067	0.713 ± 0.140	0.191 ± 0.166	0.617 ± 0.182
$ecoli - 0 - 1_{-82} - 3 - 5 0.777 \pm$	0.103 0.808 ± 0.090	0.790 ± 0.102	0.768 ± 0.123	0.810 ± 0.093	3 0.669 ± 0.131	0.739 ± 0.152	0.771 ± 0.105	0.755 ± 0.165	0.388 ± 0.291	0.628 ± 0.217
$ecoli - 0 - 2 - 6 - 7_v s_3 - 5 0.766 \pm$	0.189 0.863 ± 0.167	0.777 ± 0.212	0.813 ± 0.192	0.803 ± 0.216	0.619 ± 0.127	0.767 ± 0.173	0.766 ± 0.189	0.813 ± 0.154	0.245 ± 0.120	0.660 ± 0.198
$ecoli - 0 - 6 - 7_v s_3 - 5 0.805 \pm$			0.825 ± 0.180			0.800 ± 0.183	0.805 ± 0.190			0.691 ± 0.210
$ecoli - 0 - 6 - 7_v s_5$ 0.786 ±				0.772 ± 0.198		0.771 ± 0.220	0.792 ± 0.176	0.831 ± 0.114		
$alass - 0 - 1 - 4 - 6 - 8 - 0.253 \pm$				0.228 ± 0.109		0.243 ± 0.090	0.251 ± 0.083		0.141 ± 0.041	
$glass - 0 - 1 - 5_v s_2$ 0.278 ±		0.278 ± 0.058		0.325 ± 0.103		0.270 ± 0.057	0.279 ± 0.061		0.195 ± 0.121	
$yeast - 0 - 2 - 5 - 6_0 s_3 - 7 - 8 - 9 0.503 \pm$		0.489 ± 0.093		0.494 ± 0.108		0.485 ± 0.088	0.504 ± 0.061		0.178 ± 0.155	
$yeast - 0 - 3 - 5 - 9_v s_7 - 8 0.272 \pm$	0.039 0.518 ± 0.126	0.256 ± 0.036	0.259 ± 0.040	0.263 ± 0.039	0.319 ± 0.082	0.272 ± 0.047	0.270 ± 0.042	0.251 ± 0.182	0.103 ± 0.008	0.187 ± 0.118
$abalone - 17_v s_7 - 8 - 9 - 10 0.174 \pm$		0.172 ± 0.026				0.174 ± 0.027	0.173 ± 0.025		0.085 ± 0.062	
$abalone - 19s_10 - 11 - 12 - 13 0.051 \pm$				0.057 ± 0.012		0.051 ± 0.012	0.051 ± 0.010		0.029 ± 0.007	
$abalone - 20_v s_8 - 9 - 10 - 0.189 \pm$	0.054 0.234 ± 0.049	0.191 ± 0.056	0.188 ± 0.052	0.202 ± 0.048	0.173 ± 0.027	0.182 ± 0.048	0.189 ± 0.055	0.266 ± 0.146	0.050 ± 0.047	0.153 ± 0.099
$abalone - 21_v s_8 - 0.466 \pm$	0.088 0.623 ± 0.171	0.452 ± 0.101	0.441 ± 0.083	0.463 ± 0.101	0.454 ± 0.112	0.462 ± 0.117	0.472 ± 0.084	0.414 ± 0.169	0.268 ± 0.209	0.497 ± 0.170
$flare - F = 0.166 \pm$				0.161 ± 0.022		0.169 ± 0.025	0.166 ± 0.019	0.137 ± 0.039	0.051 ± 0.018	0.182 ± 0.084
$kddcup - buffer_overflow_v s_back$ 1.000 ±					0.000 ± 0.000		1.000 ± 0.000	0.988 ± 0.035		0.988 ± 0.035
$kddcup - rootkit - imap_us_back$ 1.000 ±		1.000 ± 0.000	1.000 ± 0.000	1.000 ± 0.000	0.000 ± 0.000	1.000 ± 0.000	1.000 ± 0.000	0.992 ± 0.025		0.992 ± 0.025
$kr - vs - k - zero_v s_e ight 0.785 \pm$	0.139 0.787 ± 0.141	0.785 ± 0.139	0.781 ± 0.142	0.796 ± 0.151	0.504 ± 0.082	0.799 ± 0.143	0.785 ± 0.139	0.262 ± 0.159	0.044 ± 0.014	0.409 ± 0.302
$poker - 8 - 9_{o}s_{5} = 0.068 \pm$	0.025 0.079 ± 0.047	0.065 ± 0.020	0.063 ± 0.021	0.079 ± 0.033	0.060 ± 0.028	0.067 ± 0.015	0.068 ± 0.025	0.084 ± 0.091	0.021 ± 0.013	0.036 ± 0.025
$poker - 8 - 9_v s_6 = 0.958 \pm$	0.068 0.969 ± 0.062	0.958 ± 0.068	0.940 ± 0.105	0.879 ± 0.146	0.541 ± 0.085	0.887 ± 0.150	0.958 ± 0.068	0.941 ± 0.176	0.941 ± 0.176	0.941 ± 0.176
$poker - 8_v s_6 = 0.942 \pm$		0.942 ± 0.092	0.917 ± 0.105	0.865 ± 0.149	0.579 ± 0.135	0.942 ± 0.092	0.942 ± 0.092	0.933 ± 0.200	1.000 ± 0.000	0.901 ± 0.296
$poker - 9_v s_7 \ 0.617 \ \pm$	$0.435 0.617 \pm 0.435$	0.617 ± 0.435	0.617 ± 0.435	0.525 ± 0.453	0.435 ± 0.361	0.567 ± 0.416	0.617 ± 0.435	0.613 ± 0.474	0.459 ± 0.450	0.369 ± 0.424
winequality $- red - 3 s_5 = 0.068 \pm$		0.067 ± 0.080	0.067 ± 0.080	0.071 ± 0.082	0.153 ± 0.107	0.094 ± 0.094	0.068 ± 0.080	0.052 ± 0.072	0.029 ± 0.025	0.024 ± 0.042
winequality $- red - 4 + 0.102 \pm$	0.010 0.108 ± 0.017	0.100 ± 0.008	0.105 ± 0.010	0.107 ± 0.019	0.125 ± 0.033	0.105 ± 0.008	0.102 ± 0.009		0.049 ± 0.011	
winequality $-red - 8_v s_6 - 7$ 0.058 ±	0.028 0.055 ± 0.038	0.060 ± 0.029	0.058 ± 0.027	0.051 ± 0.039	0.038 ± 0.024	0.055 ± 0.029	0.058 ± 0.028		0.024 ± 0.017	
winequality $- red - 8_v s_6$ 0.122 ±	0.019 0.144 ± 0.035	0.122 ± 0.019	0.123 ± 0.019	0.151 ± 0.030	0.095 ± 0.031	0.132 ± 0.032	0.122 ± 0.019	0.102 ± 0.038	0.069 ± 0.030	0.106 ± 0.059
winequality - white - 3 - $9_v s_5$ 0.054 ±		0.049 ± 0.028	0.053 ± 0.027	0.065 ± 0.044	0.172 ± 0.066	0.052 ± 0.029	0.054 ± 0.028	0.068 ± 0.095		0.049 ± 0.034
winequality - white - $3_v s_7$ 0.051 ±	0.044 0.054 ± 0.056	0.061 ± 0.047	0.058 ± 0.045	0.089 ± 0.058	0.430 ± 0.151	0.062 ± 0.046	0.051 ± 0.044	0.055 ± 0.032	0.049 ± 0.027	0.067 ± 0.029
$winequality - white - 9_s_4 0.900 \pm$	0.213 0.900 ± 0.213	0.900 ± 0.213	0.433 ± 0.473	0.917 ± 0.171	0.308 ± 0.384	0.900 ± 0.213	0.900 ± 0.213	0.190 ± 0.166	0.190 ± 0.166	0.190 ± 0.166
zoo - 3 0.317 ±	$0.411 0.317 \pm 0.411$	0.317 ± 0.411	0.217 ± 0.350	0.317 ± 0.411	0.083 ± 0.171	0.317 ± 0.411	0.317 ± 0.411	0.122 ± 0.191	0.122 ± 0.191	0.000 ± 0.000
ecoli1 0.679 ±	0.037 0.789 ± 0.050	0.690 ± 0.026	0.695 ± 0.031	0.693 ± 0.045	0.652 ± 0.031	0.681 ± 0.036	0.678 ± 0.035	0.637 ± 0.025	0.320 ± 0.184	0.000 ± 0.000
ecoli2 0.833 ±	0.047 0.859 ± 0.042	0.837 ± 0.050	0.845 ± 0.053	0.839 ± 0.050	0.790 ± 0.065	0.834 ± 0.055	0.837 ± 0.055	0.637 ± 0.177	0.286 ± 0.220	0.000 ± 0.000
ecoli3 0.504 ±	0.032 0.555 ± 0.052	0.494 ± 0.027	0.531 ± 0.049	0.503 ± 0.032	0.447 ± 0.037	0.506 ± 0.039	0.507 ± 0.031	0.500 ± 0.081	0.178 ± 0.122	0.000 ± 0.000
glass0 0.585 ±	0.058 0.636 ± 0.050	0.594 ± 0.057	0.579 ± 0.064	0.607 ± 0.065	0.573 ± 0.069	0.600 ± 0.056	0.582 ± 0.057	0.519 ± 0.043	0.492 ± 0.070	0.000 ± 0.000
glass1 0.550 ±	0.062 0.528 ± 0.056	0.542 ± 0.069	0.548 ± 0.060	0.555 ± 0.074	0.555 ± 0.076	0.555 ± 0.077	0.552 ± 0.068	0.578 ± 0.103	0.414 ± 0.041	0.000 ± 0.000
haberman 0.421 ±	0.064 0.507 ± 0.059	0.428 ± 0.049	0.382 ± 0.047	0.400 ± 0.048	0.455 ± 0.046	0.409 ± 0.055	0.419 ± 0.055	0.444 ± 0.039	0.341 ± 0.118	0.000 ± 0.000
page-blocks0 0.664 ±	0.017 0.801 ± 0.026	0.667 ± 0.019	0.690 ± 0.023	0.668 ± 0.016	0.778 ± 0.044	0.659 ± 0.016	0.664 ± 0.017	0.637 ± 0.165	0.393 ± 0.083	0.000 ± 0.000
pima 0.600 ±	0.040 0.640 ± 0.033	0.606 ± 0.030	0.607 ± 0.031	0.604 ± 0.039	0.620 ± 0.032	0.608 ± 0.035	0.600 ± 0.040	0.670 ± 0.049	0.471 ± 0.032	0.000 ± 0.000
vehicle1 0.538 ±	0.022 0.593 ± 0.033	0.538 ± 0.027	0.542 ± 0.028	0.548 ± 0.028	0.541 ± 0.025	0.544 ± 0.025	0.540 ± 0.022	0.594 ± 0.044	0.518 ± 0.017	0.000 ± 0.000
vehicle3 0.515 ±	0.016 0.549 ± 0.027	0.513 ± 0.020	0.515 ± 0.020	0.518 ± 0.023	0.515 ± 0.022	0.514 ± 0.020	0.515 ± 0.017	0.617 ± 0.088	0.497 ± 0.035	0.000 ± 0.000
yeast1 0.497 ±	0.007 0.591 ± 0.019	0.503 ± 0.020	0.487 ± 0.019	0.499 ± 0.017	0.531 ± 0.022	0.496 ± 0.010	0.498 ± 0.006	0.558 ± 0.114	0.292 ± 0.001	0.000 ± 0.000
yeast3 0.649 ±	0.037 0.737 ± 0.032	0.646 ± 0.039	0.657 ± 0.030	0.648 ± 0.027	0.641 ± 0.045	0.645 ± 0.034	0.649 ± 0.038	0.780 ± 0.058	0.111 ± 0.001	0.000 ± 0.000

Table 15. KNN – Recall

Dataset name SMOTE	polynom-fit-SMOTI	E Lee SMOBD	CSMOTE	IVO SMOTE	Assembled SMOTI	SMOTE Tomaki inke	JFOTS-pr JFOTS-rc JFOTS-pr
abalone19 0,200 ± 0,139		$0.200 \pm 0.139 0.200 \pm 0.139$		0.175 ± 0.092	0.194 ± 0.126	0.200 ± 0.139	$0.062 \pm 0.062 \ 0.013 \pm 0.025 \ 0.169 \pm 0.$
$abalone9 - 18\ 0.543\ \pm\ 0.068$		0.514 ± 0.076 0.524 ± 0.088			0.194 ± 0.120 0.529 ± 0.086	0.543 ± 0.068	0.002 ± 0.002 0.013 ± 0.023 0.103 ± 0. 0.305 ± 0.140 0.186 ± 0.166 0.314 ± 0.
$ecoli - 0 - 1 - 3 - 7_v s_2 - 6$ 0.700 \pm 0.155		0.700 ± 0.155 0.700 ± 0.155				0.700 ± 0.155	0.642 ± 0.224 0.642 ± 0.224 0.675 ± 0 .
$qlass - 0 - 1 - 6_v s_2 0.600 \pm 0.142$	0.531 ± 0.083	0.587 ± 0.145 0.589 ± 0.143			0.603 ± 0.145	0.600 ± 0.142	$0.414 \pm 0.098 \ 0.314 \pm 0.207 \ 0.431 \pm 0.$
$glass - 0 - 1 - 6_v s_5$ 0.850 \pm 0.196		$0.850 \pm 0.196 0.850 \pm 0.196$		0.810 ± 0.246	0.850 ± 0.196	0.850 ± 0.196	$0.790 \pm 0.237 \ 0.725 \pm 0.386 \ 0.640 \pm 0.$
$qlass2 0.424 \pm 0.259$	0.426 ± 0.270	0.436 ± 0.310 0.460 \pm 0.292	0.411 ± 0.280	0.438 ± 0.236	0.435 ± 0.303	0.424 ± 0.259	$0.424 \pm 0.200 \ 0.265 \pm 0.236 \ \ 0.318 \pm 0.$
$glass4~0.850~\pm~0.111$	0.850 ± 0.134	$0.802 \pm 0.114 0.819 \pm 0.105$	0.805 ± 0.132	0.783 ± 0.078	0.833 ± 0.099	0.850 ± 0.111	$0.674 \pm 0.122 \ 0.555 \pm 0.299 \ \ 0.550 \pm 0.$
$glass5 \ 0.885 \pm 0.226$	0.885 ± 0.226	0.865 ± 0.241 0.885 \pm 0.226	0.865 ± 0.224	0.780 ± 0.212	0.885 ± 0.226	0.885 ± 0.226	$0.670 \pm 0.241 \ 0.775 \pm 0.287 \ 0.700 \pm 0.$
$page - blocks - 1 - 3_v s_4 \ 0.986 \pm 0.043$		$0.986 \pm 0.043 0.986 \pm 0.043$			0.971 ± 0.047	0.986 ± 0.043	$0.736 \pm 0.207 \ 0.707 \pm 0.158 \ \ 0.793 \pm 0.$
$yeast - 0 - 5 - 6 - 7 - 9_v s_4 0.604 \pm 0.090$	0.627 ± 0.078	$0.608 \pm 0.086 0.604 \pm 0.085$		0.592 ± 0.081	0.576 ± 0.069	0.600 ± 0.090	$0.388 \pm 0.134 \ 0.000 \pm 0.000 \ \ 0.385 \pm 0.$
$yeast - 1 - 2 - 8 - 9_v s_7 \ 0.500 \ \pm \ 0.100$		$0.493 \pm 0.085 0.480 \pm 0.088$		0.453 ± 0.111	0.487 ± 0.108	0.500 ± 0.100	$0.213 \pm 0.093 \ 0.000 \pm 0.000 \ 0.173 \pm 0.$
$yeast - 1 - 4 - 5 - 8_v s_7 - 0.407 \pm 0.081$	0.340 ± 0.125	$0.413 \pm 0.083 0.367 \pm 0.100$		0.333 ± 0.079	0.393 ± 0.081	0.407 ± 0.076	$0.127\pm0.0960.000\pm0.0000.100\pm0.$
$yeast - 1_v s_7 0.620 \pm 0.073$	0.600 ± 0.079	0.627 ± 0.080 0.647 ± 0.085		0.540 ± 0.076	0.580 ± 0.099	0.620 ± 0.073	$0.260 \pm 0.092 \ 0.000 \pm 0.000 \ 0.180 \pm 0.$
$yeast - 2_vs_4$ 0.792 ± 0.071 $yeast - 2_vs_8$ 0.700 ± 0.134	0.784 ± 0.082	0.788 ± 0.077 0.792 ± 0.070 0.690 ± 0.122 0.700 ± 0.134			0.800 ± 0.067	0.792 ± 0.071 0.700 ± 0.134	$0.698 \pm 0.096 \ 0.214 \pm 0.329 \ 0.690 \pm 0.$
$yeast - 2_v s_8 0.700 \pm 0.134$ $yeast4 0.537 \pm 0.057$	0.650 ± 0.102 0.537 ± 0.075	0.690 ± 0.122 0.700 ± 0.134 0.537 ± 0.057 0.533 ± 0.062		0.680 ± 0.125	0.700 ± 0.134 0.544 ± 0.082	0.700 ± 0.134 0.537 ± 0.057	$0.580 \pm 0.087 \ 0.070 \pm 0.210 \ 0.640 \pm 0.$ $0.340 \pm 0.072 \ 0.000 \pm 0.000 \ 0.313 \pm 0.$
$yeast4 \ 0.557 \pm 0.057$ $yeast5 \ 0.886 \pm 0.077$	0.864 ± 0.073		0.490 ± 0.072 0 0.845 ± 0.071 0		0.886 ± 0.082	0.886 ± 0.077	$0.340 \pm 0.072 0.000 \pm 0.000 0.313 \pm 0.$ $0.745 \pm 0.115 0.000 \pm 0.000 0.650 \pm 0.$
yeast6 0.687 ± 0.094	0.675 ± 0.080		0.670 ± 0.096		0.675 ± 0.094	0.687 ± 0.094	$0.482 \pm 0.147 \ 0.000 \pm 0.000 \ 0.576 \pm 0.$
$cleveland - 0_{-84} 0.802 \pm 0.140$	0.786 ± 0.070	0.817 ± 0.052 0.802 ± 0.140		0.662 ± 0.013	0.817 ± 0.052	0.802 ± 0.140	$0.536 \pm 0.185 \ 0.493 \pm 0.275 \ 0.502 \pm 0.$
$ecoli - 0 - 1 - 4 - 7_v s_2 - 3 - 5 - 6$ 0.834 \pm 0.034		0.827 ± 0.048 0.813 ± 0.048		0.826 ± 0.060	0.834 ± 0.034	0.834 ± 0.034	$0.492 \pm 0.247 \ 0.179 \pm 0.222 \ 0.665 \pm 0.$
$ecoli - 0 - 1_{\pi}s_2 - 3 - 5 \ 0.808 \pm 0.065$	0.808 ± 0.065	0.800 ± 0.067 0.800 ± 0.067		0.800 ± 0.076	0.817 ± 0.073	0.808 ± 0.065	$0.658 \pm 0.209 \ 0.417 \pm 0.348 \ 0.700 \pm 0.$
$ecoli - 0 - 2 - 6 - 7_v s_3 - 5 0.745 \pm 0.114$	0.736 ± 0.118	$0.755 \pm 0.129 0.736 \pm 0.118$				0.745 ± 0.114	$0.636 \pm 0.081 \ 0.245 \pm 0.279 \ 0.727 \pm 0.$
$ecoli - 0 - 6 - 7_v s_3 - 5 0.764 \pm 0.109$	0.764 ± 0.109	$0.773 \pm 0.124 0.764 \pm 0.109$	0.755 ± 0.129	0.745 ± 0.106	0.764 ± 0.109	0.764 ± 0.109	$0.645 \pm 0.111 \ 0.273 \pm 0.293 \ 0.655 \pm 0.$
$ecoli - 0 - 6 - 7_v s_5 0.790 \pm 0.104$	0.780 ± 0.125	$0.790 \pm 0.104 0.790 \pm 0.122$	0.790 ± 0.104	0.810 ± 0.094	0.790 ± 0.104	0.790 ± 0.104	$0.680 \pm 0.140 \ 0.230 \pm 0.257 \ \ 0.760 \pm 0.$
$glass - 0 - 1 - 4 - 6_v s_2 \ 0.497 \ \pm \ 0.184$	0.472 ± 0.166	$0.496 \pm 0.198 0.496 \pm 0.198$	0.424 ± 0.191	0.399 ± 0.126	0.474 ± 0.204	0.485 ± 0.179	$0.243 \pm 0.169 \ 0.268 \pm 0.258 \ \ 0.261 \pm 0.$
$glass - 0 - 1 - 5_v s_2 0.574 \pm 0.135$	0.561 ± 0.115	0.597 ± 0.137 0.562 ± 0.131		0.460 ± 0.120	0.575 ± 0.123	0.574 ± 0.135	$0.485 \pm 0.172 \ 0.322 \pm 0.314 \ 0.344 \pm 0.$
$yeast-0-2-5-6_v s_3-7-8-9 \ 0.699 \pm 0.071$	0.663 ± 0.057	0.707 ± 0.057 0.697 ± 0.052		0.649 ± 0.056	0.699 ± 0.061	0.699 ± 0.071	$0.405 \pm 0.157 \ 0.092 \pm 0.126 \ 0.424 \pm 0.$
$yeast - 0 - 3 - 5 - 9_v s_7 - 8 \ 0.536 \pm 0.062$	0.492 ± 0.059	0.540 ± 0.070 0.520 ± 0.076		0.504 ± 0.108	0.520 ± 0.067	0.540 ± 0.068	$0.220\pm0.1380.008\pm0.024\ 0.216\pm0.$
$abalone - 17_v s_7 - 8 - 9 - 10 \ 0.559 \pm 0.092$	0.469 ± 0.069	0.566 ± 0.094 0.552 ± 0.094		0.531 ± 0.097	0.545 ± 0.088	0.559 ± 0.092	$0.224 \pm 0.069 \ 0.210 \pm 0.175 \ 0.262 \pm 0.$
$abalone - 19_v s_1 0 - 11 - 12 - 13 0.281 \pm 0.085$ $abalone - 20_v s_8 - 9 - 10 0.538 \pm 0.119$	0.156 ± 0.050	0.287 ± 0.094 0.294 ± 0.105 0.554 ± 0.132 0.562 ± 0.142		0.237 ± 0.092	0.250 ± 0.101	0.281 ± 0.085	$0.112 \pm 0.073 \ 0.138 \pm 0.142 \ 0.150 \pm 0.$
$abatone - 20_v s_8 - 9 - 10 - 0.538 \pm 0.119$ $abatone - 21_v s_8 \ 0.686 \pm 0.178$	0.346 ± 0.052 0.557 ± 0.162			0.469 ± 0.116 0.614 ± 0.129	0.523 ± 0.175 0.671 ± 0.170	0.531 ± 0.126 0.686 ± 0.178	$0.285 \pm 0.119 \ 0.115 \pm 0.180 \ 0.338 \pm 0.$ $0.429 \pm 0.202 \ 0.357 \pm 0.241 \ 0.429 \pm 0.$
$flare - F = 0.465 \pm 0.092$	0.415 ± 0.079	0.460 ± 0.103 0.465 ± 0.091			0.465 ± 0.081	0.465 ± 0.092	$0.429 \pm 0.202 \ 0.337 \pm 0.241 \ 0.429 \pm 0.$ $0.111 \pm 0.083 \ 0.009 \pm 0.018 \ 0.148 \pm 0.$
$kddcup - buffer_overflow_v s_back$ 0.913 \pm 0.095	0.913 ± 0.095		0.893 ± 0.100		0.893 ± 0.085	0.913 ± 0.095	$0.913 \pm 0.090 \ 0.913 \pm 0.090 \ 0.913 \pm 0.$
$kddcup - rootkit - imap_us_back 0.945 \pm 0.045$		0.945 ± 0.045 0.945 ± 0.045		0.891 ± 0.055	0.909 ± 0.100	0.945 ± 0.045	$0.927 \pm 0.079 \ 0.927 \pm 0.079 \ 0.927 \pm 0.$
$kr - vs - k - zero_v s_v ight = 0.887 \pm 0.098$	0.865 ± 0.105	$0.895 \pm 0.098 0.895 \pm 0.098$	0.857 ± 0.121	0.895 ± 0.124	0.864 ± 0.118	0.887 ± 0.098	$0.520 \pm 0.329 \ 0.000 \pm 0.000 \ 0.503 \pm 0.$
$poker - 8 - 9_v s_5 = 0.265 \pm 0.121$	0.177 ± 0.072	0.280 ± 0.135 0.263 ± 0.127	0.119 ± 0.092	0.373 ± 0.103	0.272 ± 0.129	0.265 ± 0.121	$0.112 \pm 0.138 \ 0.038 \pm 0.079 \ 0.121 \pm 0.$
$poker - 8 - 9_v s_6 0.920 \pm 0.081$	0.841 ± 0.068	0.919 ± 0.081 0.919 ± 0.081	0.823 ± 0.110	0.983 ± 0.050	0.896 ± 0.063	0.920 ± 0.081	$0.975 \pm 0.075 \ 0.952 \pm 0.096 \ 0.952 \pm 0.$
$poker - 8_v s_6 0.910 \pm 0.120$	0.719 ± 0.112	0.910 ± 0.120 0.910 ± 0.120		0.989 ± 0.033	0.887 ± 0.157	0.910 ± 0.120	$0.812\pm0.2440.863\pm0.2250.728\pm0.$
$poker - 9_v s_7 \ 0.700 \pm 0.312$		$0.700 \pm 0.312 0.700 \pm 0.312$		0.600 ± 0.255	0.675 ± 0.297	0.700 ± 0.312	$0.600 \pm 0.450 \ 0.625 \pm 0.375 \ \ 0.475 \pm 0.$
$winequality - red - 3_v s_5 \ 0.200 \pm 0.126$		$0.200 \pm 0.126 \ 0.200 \pm 0.126$			0.180 ± 0.108	0.200 ± 0.126	$0.120\pm0.1330.020\pm0.0600.160\pm0.$
winequality $- red - 4 0.317 \pm 0.052$	0.271 ± 0.093	0.317 ± 0.059 0.317 ± 0.044		0.184 ± 0.050	0.328 ± 0.047	0.317 ± 0.052	$0.124 \pm 0.064 \ 0.083 \pm 0.110 \ 0.200 \pm 0.$
$winequality - red - 8_v s_6 - 7 \ 0.167 \pm 0.134$	0.167 ± 0.143	$0.178 \pm 0.133 0.178 \pm 0.133$			0.167 ± 0.114	0.167 ± 0.134	$0.144 \pm 0.132 \ 0.122 \pm 0.144 \ 0.133 \pm 0.$
winequality $- red - 8_v s_6 \ 0.378 \pm 0.113$ winequality $- white - 3 - 9_v s_5 \ 0.313 \pm 0.068$		0.356 ± 0.120 0.378 ± 0.113 0.313 ± 0.076 0.313 ± 0.076		0.278 ± 0.102 0.234 ± 0.115	0.367 ± 0.100 0.272 ± 0.083	0.378 ± 0.113 0.313 ± 0.068	$0.256 \pm 0.122 \ 0.233 \pm 0.168 \ 0.300 \pm 0.$ $0.121 \pm 0.100 \ 0.089 \pm 0.068 \ 0.184 \pm 0.$
winequality - white - 3 - $9_{\pi}s_5$ 0.313 \pm 0.068 winequality - white - $3_{\pi}s_7$ 0.320 \pm 0.172	0.272 ± 0.075 0.180 ± 0.133	0.330 ± 0.185 0.300 ± 0.190			0.272 ± 0.083 0.320 ± 0.204	0.313 ± 0.008 0.320 ± 0.172	$0.121 \pm 0.100 \ 0.089 \pm 0.068 \ 0.184 \pm 0.$ $0.210 \pm 0.130 \ 0.250 \pm 0.186 \ 0.170 \pm 0.$
winequality - white - $9v84 0.800 \pm 0.172$ winequality - white - $9v84 0.800 \pm 0.208$		0.800 ± 0.185 0.300 ± 0.190 0.800 ± 0.208 0.567 ± 0.359			0.320 ± 0.204 0.800 ± 0.208	0.800 ± 0.172	$0.210 \pm 0.130 \ 0.250 \pm 0.186 \ 0.170 \pm 0.$ $0.517 \pm 0.391 \ 0.517 \pm 0.$
$zoo - 3 \ 0.700 \pm 0.306$		0.700 ± 0.306 0.467 ± 0.393			0.700 ± 0.306	0.700 ± 0.306	$0.300 \pm 0.267 \ 0.300 \pm 0.267 \ 0.000 \pm 0.$
ecoli1 0.837 ± 0.048	0.829 ± 0.056	0.847 ± 0.055 0.845 ± 0.053			0.839 ± 0.067	0.844 ± 0.043	0.721 ± 0.127 0.146 ± 0.292 0.000 ± 0.
$ecoli2 0.908 \pm 0.062$		$0.908 \pm 0.062 0.908 \pm 0.062$			0.908 ± 0.062	0.908 ± 0.062	$0.758 \pm 0.139 \ 0.188 \pm 0.299 \ 0.000 \pm 0.$
$ecoli3 0.840 \pm 0.033$	0.817 ± 0.041	0.846 ± 0.035 0.823 ± 0.039		0.835 ± 0.063	0.828 ± 0.037	0.840 ± 0.023	$0.670 \pm 0.114 \ 0.185 \pm 0.288 \ 0.000 \pm 0.$
$qlass0 0.854 \pm 0.052$	0.874 ± 0.053	0.851 ± 0.061 0.866 ± 0.057	0.863 ± 0.052	0.843 ± 0.052	0.869 ± 0.060	0.871 ± 0.041	$0.803 \pm 0.104 \ 0.657 \pm 0.241 \ 0.000 \pm 0.$
$glass1 0.732 \pm 0.076$	0.758 ± 0.069	0.729 ± 0.063 0.732 ± 0.067	0.718 ± 0.068	0.708 ± 0.057	0.726 ± 0.054	0.732 ± 0.085	$0.629 \pm 0.156 \ 0.184 \pm 0.260 \ 0.000 \pm 0.$
$haberman \ 0.546 \pm 0.083$	0.502 ± 0.096	0.516 ± 0.127 0.516 ± 0.078		0.469 ± 0.090	0.509 ± 0.091	0.548 ± 0.073	$0.393 \pm 0.061 \ 0.313 \pm 0.152 \ 0.000 \pm 0.$
$page-blocks0$ 0.896 ± 0.023	0.846 ± 0.025			0.789 ± 0.032	0.901 ± 0.021	0.897 ± 0.023	$0.810\pm0.0410.841\pm0.025\ 0.000\pm0.$
$pima 0.660 \pm 0.035$	0.669 ± 0.037			0.640 ± 0.036	0.661 ± 0.034	0.675 ± 0.040	$0.578\pm0.0440.530\pm0.101\ 0.000\pm0.$
$vehicle1 \ 0.717 \pm 0.054$	0.713 ± 0.037	0.711 ± 0.044 0.736 \pm 0.057		0.679 ± 0.052	0.726 ± 0.052	0.721 ± 0.057	$0.508 \pm 0.060 \ 0.671 \pm 0.065 \ 0.000 \pm 0.$
$vehicle3 \ 0.671 \pm 0.035$	0.637 ± 0.042	0.679 ± 0.039 0.700 \pm 0.047		0.619 ± 0.048	0.687 ± 0.036	0.668 ± 0.036	$0.443 \pm 0.052 \ 0.625 \pm 0.051 \ 0.000 \pm 0.$
$yeast1 = 0.641 \pm 0.016$	0.600 ± 0.026	0.641 ± 0.018 0.633 ± 0.028		0.586 ± 0.024	0.636 ± 0.024	0.648 ± 0.020	$0.379 \pm 0.174 \ 0.000 \pm 0.000 \ 0.000 \pm 0.$
$yeast3 - 0.817 \pm 0.038$	0.809 ± 0.043	0.820 ± 0.041 0.805 ± 0.046	0.809 ± 0.040	0.807 ± 0.025	0.822 ± 0.038	0.816 ± 0.038	$0.724 \pm 0.034 \ 0.000 \pm 0.000 \ 0.000 \pm 0.$