

Table 1: Classification Result Based on Different Oversample Methods

Data Source	Method	Rec.	Pre.	F	G
ecoli	random	0.927	1.000	0.962	0.959
	SMOTE	0.946	0.959	0.952	0.954
	SMOTEBorderline-1	0.935	0.973	0.954	0.954
	SMOTEBorderline-2	0.897	0.959	0.927	0.928
	SVMSMOTE	0.922	0.959	0.940	0.941
	ADASYN	0.896	0.972	0.932	0.935
optical_digits	random	0.995	1.000	0.997	0.997
	SMOTE	0.998	0.997	0.998	0.998
	SMOTEBorderline-1	0.997	0.989	0.993	0.993
	SMOTEBorderline-2	0.996	0.987	0.992	0.992
	SVMSMOTE	0.994	0.995	0.995	0.994
	ADASYN	0.994	0.998	0.996	0.996
satimage	random	0.894	0.998	0.943	0.936
	SMOTE	0.923	0.986	0.954	0.952
	SMOTEBorderline-1	0.920	0.985	0.951	0.948
	SMOTEBorderline-2	0.905	0.974	0.938	0.935
	SVMSMOTE	0.924	0.986	0.954	0.949
	ADASYN	0.921	0.990	0.954	0.950
pen_digits	random	0.998	1.000	0.999	0.999
	SMOTE	0.998	0.999	0.999	0.999
	SMOTEBorderline-1	0.999	0.998	0.998	0.998
	SMOTEBorderline-2	0.998	0.997	0.997	0.997
	SVMSMOTE	0.997	0.999	0.998	0.998
	ADASYN	0.997	0.999	0.998	0.998
abalone	random	0.806	0.961	0.877	0.859
	SMOTE	0.829	0.938	0.880	0.870
	SMOTEBorderline-1	0.846	0.954	0.897	0.890
	SMOTEBorderline-2	0.866	0.947	0.905	0.900
	SVMSMOTE	0.859	0.955	0.904	0.895
	ADASYN	0.822	0.930	0.873	0.860
sick_euthyroid	random	0.984	0.993	0.988	0.988
	SMOTE	0.976	0.980	0.978	0.978
	SMOTEBorderline-1	0.984	0.987	0.986	0.986
	SMOTEBorderline-2	0.975	0.956	0.966	0.965
	SVMSMOTE	0.987	0.978	0.983	0.983
	ADASYN	0.975	0.993	0.984	0.984
spectrometer	random	1.000	1.000	1.000	1.000
	SMOTE	0.992	1.000	0.996	0.996
	SMOTEBorderline-1	0.976	0.976	0.976	0.975
	SMOTEBorderline-2	0.983	0.975	0.979	0.979
	SVMSMOTE	1.000	0.983	0.991	0.991
	ADASYN	0.940	1.000	0.969	0.965
car_eval_34	random	0.985	1.000	0.992	0.993
	SMOTE	0.990	1.000	0.995	0.995
	SMOTEBorderline-1	0.990	1.000	0.995	0.995
	SMOTEBorderline-2	0.993	1.000	0.996	0.996
	SVMSMOTE	0.993	1.000	0.996	0.996
	ADASYN	0.987	1.000	0.994	0.994
isolet	random	0.977	1.000	0.989	0.988
	SMOTE	0.979	0.999	0.989	0.989
	SMOTEBorderline-1	0.982	0.995	0.988	0.988
	SMOTEBorderline-2	0.972	0.995	0.983	0.983
	SVMSMOTE	0.976	0.996	0.985	0.985
	ADASYN	0.984	0.997	0.990	0.990
us_crime	random	0.944	1.000	0.971	0.970
	SMOTE	0.932	0.973	0.952	0.953
	SMOTEBorderline-1	0.942	0.985	0.963	0.962
	SMOTEBorderline-2	0.933	0.967	0.950	0.950
	SVMSMOTE	0.952	0.984	0.968	0.964
	ADASYN	0.951	0.985	0.967	0.967
yeast_ml8	random	0.932	1.000	0.965	0.964
	SMOTE	0.863	0.980	0.918	0.915
	SMOTEBorderline-1	0.907	0.957	0.931	0.929
	SMOTEBorderline-2	0.917	0.957	0.936	0.932
	SVMSMOTE	0.954	0.946	0.950	0.949
	ADASYN	0.865	0.968	0.914	0.907
scene	random	0.917	1.000	0.957	0.960
	SMOTE	0.907	0.989	0.946	0.942
	SMOTEBorderline-1	0.904	0.980	0.941	0.937
	SMOTEBorderline-2	0.940	0.969	0.954	0.954
	SVMSMOTE	0.939	0.968	0.953	0.956
	ADASYN	0.905	0.964	0.934	0.931

Table 2: Classification Result Based on Different Oversample Methods

Data Source	Method	Rec.	Pre.	F	G
libras_move	random	0.988	1.000	0.994	0.994
	SMOTE	1.000	1.000	1.000	1.000
	SMOTEBorderline-1	1.000	1.000	1.000	1.000
	SMOTEBorderline-2	1.000	0.966	0.983	0.983
	SVMSMOTE	0.978	1.000	0.989	0.987
	ADASYN	0.989	0.977	0.983	0.982
thyroid_sick	random	0.981	1.000	0.990	0.990
	SMOTE	0.987	0.995	0.991	0.991
	SMOTEBorderline-1	0.987	0.994	0.990	0.990
	SMOTEBorderline-2	0.986	0.992	0.989	0.989
	SVMSMOTE	0.986	0.995	0.991	0.991
	ADASYN	0.985	0.996	0.990	0.990
coil_2000	random	0.772	0.823	0.797	0.791
	SMOTE	0.981	0.923	0.951	0.952
	SMOTEBorderline-1	0.971	0.918	0.944	0.944
	SMOTEBorderline-2	0.984	0.930	0.956	0.957
	SVMSMOTE	0.968	0.929	0.948	0.948
	ADASYN	0.982	0.923	0.951	0.952
arrhythmia	random	0.949	1.000	0.974	0.979
	SMOTE	0.991	0.991	0.991	0.991
	SMOTEBorderline-1	1.000	1.000	1.000	1.000
	SMOTEBorderline-2	0.947	0.991	0.968	0.967
	SVMSMOTE	0.971	1.000	0.986	0.990
	ADASYN	0.965	1.000	0.982	0.980
solar_flare_m0	random	0.781	0.907	0.840	0.829
	SMOTE	0.963	0.922	0.942	0.943
	SMOTEBorderline-1	0.948	0.923	0.936	0.935
	SMOTEBorderline-2	0.981	0.941	0.960	0.961
	SVMSMOTE	0.983	0.928	0.955	0.956
	ADASYN	0.958	0.908	0.932	0.934
oil	random	0.983	1.000	0.992	0.990
	SMOTE	0.977	0.995	0.986	0.987
	SMOTEBorderline-1	0.986	0.986	0.986	0.987
	SMOTEBorderline-2	0.973	0.986	0.980	0.980
	SVMSMOTE	0.990	0.981	0.986	0.986
	ADASYN	0.991	0.996	0.993	0.993
car_eval_4	random	0.993	1.000	0.996	0.996
	SMOTE	1.000	1.000	1.000	1.000
	SMOTEBorderline-1	0.995	1.000	0.998	0.998
	SMOTEBorderline-2	1.000	1.000	1.000	1.000
	SVMSMOTE	1.000	1.000	1.000	1.000
	ADASYN	0.993	1.000	0.996	0.997
wine_quality	random	0.918	0.971	0.944	0.940
	SMOTE	0.923	0.948	0.935	0.934
	SMOTEBorderline-1	0.909	0.961	0.934	0.933
	SMOTEBorderline-2	0.892	0.943	0.917	0.917
	SVMSMOTE	0.947	0.940	0.944	0.944
	ADASYN	0.911	0.951	0.930	0.928
letter_img	random	0.990	0.998	0.994	0.994
	SMOTE	0.996	1.000	0.998	0.998
	SMOTEBorderline-1	0.997	0.998	0.998	0.998
	SMOTEBorderline-2	0.997	0.993	0.995	0.995
	SVMSMOTE	0.990	1.000	0.995	0.995
	ADASYN	0.993	0.999	0.996	0.996
yeast_me2	random	0.934	1.000	0.966	0.965
	SMOTE	0.956	0.989	0.972	0.970
	SMOTEBorderline-1	0.969	0.983	0.976	0.976
	SMOTEBorderline-2	0.938	0.971	0.954	0.956
	SVMSMOTE	0.971	0.986	0.979	0.977
	ADASYN	0.957	0.984	0.971	0.966
webpage	random	0.958	0.902	0.929	0.931
	SMOTE	0.978	0.983	0.980	0.980
	SMOTEBorderline-1	0.964	0.990	0.977	0.975
	SMOTEBorderline-2	0.965	0.987	0.976	0.976
	SVMSMOTE	0.976	0.968	0.972	0.972
	ADASYN	0.958	0.990	0.974	0.973
ozone_level	random	0.978	1.000	0.989	0.988
	SMOTE	0.966	0.997	0.981	0.980
	SMOTEBorderline-1	0.964	0.992	0.978	0.977
	SMOTEBorderline-2	0.965	0.990	0.977	0.977
	SVMSMOTE	0.976	0.990	0.983	0.983
	ADASYN	0.969	0.998	0.983	0.983

Table 3: Classification Result Based on Different Oversample Methods

Data Source	Method	Rec.	Pre.	F	G
mammography	random	0.964	0.953	0.958	0.958
	SMOTE	0.971	0.940	0.955	0.956
	SMOTEBorderline-1	0.977	0.996	0.986	0.986
	SMOTEBorderline-2	0.948	0.959	0.954	0.953
	SVMSMOTE	0.978	0.995	0.986	0.987
	ADASYN	0.962	0.907	0.934	0.934
protein_homo	random	0.988	0.998	0.993	0.993
	SMOTE	0.984	0.988	0.986	0.986
	SMOTEBorderline-1	0.993	0.997	0.995	0.995
	SMOTEBorderline-2	0.988	0.992	0.990	0.990
	SVMSMOTE	0.995	0.996	0.995	0.995
	ADASYN	0.978	0.992	0.985	0.985
abalone_19	random	0.966	1.000	0.983	0.982
	SMOTE	0.942	0.992	0.966	0.967
	SMOTEBorderline-1	0.994	0.994	0.994	0.994
	SMOTEBorderline-2	0.991	0.992	0.992	0.992
	SVMSMOTE	0.986	0.988	0.987	0.990
	ADASYN	0.936	0.984	0.960	0.959