Table 1: Classification Result Based on Different Oversample Methods

SMOTE			Different Oversample Methods			
SMOTE	Data Source					_
ecoli SMOTEBorderline-1 0.935 0.973 0.954 0.955						0.959
SMOTEBorderline-2 0.897	ecoli			l		0.954
SMOTE SVMSMOTE S						0.954
ADASYN 0.995 0.907 0.997 0.998 0.997 0.998 0.997 0.998 0.997 0.998 0.997 0.998 0.997 0.998 0.993 0.993 0.993 0.993 0.993 0.993 0.993 0.993 0.993 0.993 0.993 0.993 0.993 0.993 0.993 0.993 0.993 0.994 0.995 0.9				l		0.928
ADASYN 0.995 0.907 0.997 0.998 0.997 0.999 0.996 0.997 0.998 0.997 0.998 0.997 0.998 0.997 0.998 0.993 0.993 0.993 0.993 0.993 0.993 0.993 0.993 0.993 0.993 0.993 0.993 0.993 0.993 0.993 0.993 0.993 0.993 0.993 0.994 0.995 0.9		SVMSMOTE	0.922	0.959	0.940	0.941
optical_digits random SMOTE 0.995 0.997 0.998 0.999 0.998 0.999 0.998 0.999 0.999 0.993 0.993 0.993 0.992 0.995 0.998 0.993 0.993 0.938 0.935 0.931 0.944 0.956 0.954 0.954 0.957 Fandom SMOTEBorderline-2 0.998 0.999 0.998 0.999 0.999 0.999 0.999 0.999 0.999 0.999 0.999 0.999		ADASYN	0.896	l .	0.932	0.935
optical_digits SMOTE SMOTEBorderline-1 SMOTEBorderline-2				1.000		0.997
optical_digits SMOTEBorderline-1 SMOTEBorderline-2 O.996 (0.997 0.992 0.993	$optical_digits$			l .		0.998
SMOTEBorderline-2						0.993
SVMSMOTE 0.994 0.995 0.996 0.995 0.951 0.944 0.925 0.951 0.944 0.926 0.955 0.951 0.944 0.926 0.955 0.954 0.955 0.954 0.955 0.954 0.955 0.954 0.955 0.954 0.955 0.954 0.955 0.954 0.956 0						0.992
ADASYN				l		0.994
satimage random SMOTE SMOTE SMOTE SMOTE SUBTEM CHAPTER SMOTE S						
satimage SMOTE SMOTEBorderline-1 SMOTEBorderline-2 SVMSMOTE 0.923 0.905 0.974 0.985 0.951 0.954 0.954 0.938 0.93 0.934 0.93 0.934 0.93 0.934 0.93 0.994 0.94 0.996 0.954 0.996 0.94 0.999 0.999 0.999 0.999 0.999 0.999 0.999 0.999 0.999 0.999 0.999 0.999 0.999 0.999 0.999 0.999 0.999 0.999 0.998 0.997 0.999 0.998 0.999 0.999 0.998 0.998 0.998 0.999 0.998 0.999 0.9						
satimage SMOTEBorderline-1 SMOTEBorderline-2 O.905 O.974 (0.938 O.934 O.934 O.934 O.944 O.944 O.945 O.946 O.954 O.945 O.946 O.954 O.946 O.94						
SAUTHBORD S.WOTEBOrderline-2 0.905 0.974 0.938 0.935 0.934 0.954 0.954 0.954 0.954 0.954 0.954 0.954 0.954 0.955 0.954 0.955 0.954 0.955 0.954 0.955 0.9				l		
SVMSMOTE 0.921 0.986 0.954 0.948 0.948 0.949 0.950 0	satimage				l	
Pen_digits						
Pen_digits						0.949
Pen_digits						0.950
Pen_digits					l	0.999
SMOTEBorderline-2 0.998 0.997 0.997 0.998 0.998 0.998 0.998 0.998 0.999 0.998 0.999 0.998 0.999 0.999 0.998 0.999 0.998 0.999 0.998 0.999 0.998 0.999 0.998 0.999 0.998 0.999 0.998 0.999 0.998 0.999 0.998 0.999 0.998 0.999 0.998 0.999 0.998 0.999 0.998 0.998 0.998 0.998 0.998 0.998 0.988 0.860 0.866 0.954 0.897 0.866 0.947 0.995 0.906 0.990 0.998 0.988 0.870 0.866 0.947 0.995 0.904 0.893 0.868 0.870 0.866 0.968 0.978 0.976				l .		0.999
SMOTEBORDER	nen digite			l		0.998
ADASYN	ben-digits		0.998	0.997	0.997	0.997
abalone random SMOTE 0.806 (0.951) 0.877 (0.85) 0.875 (0.87) 0.859 (0.938) 0.880 (0.87) 0.897 (0.896) 0.897 (0.896) 0.897 (0.996) 0.897 (0.996) 0.890 (0.954) 0.897 (0.905) 0.904 (0.996) 0.905 (0.906) 0.906 (0.906) 0.906 (0.906) 0.906 (0.906) 0.906 (0.906) 0.906 (0.906) 0.906 (0.906) 0.908 (0.988) 0.988 (0.998) 0.988 (0.988) 0.988 (0.988) 0.988 (0.988) 0.988 (0.988) 0.988 (0.988) 0.988 (0.988) 0.988 (0.988) 0.988 (0.988)			0.997	0.999	0.998	0.998
abalone random SMOTE 0.806 (0.951) 0.877 (0.85) 0.875 (0.87) 0.859 (0.938) 0.880 (0.87) 0.897 (0.896) 0.897 (0.896) 0.897 (0.996) 0.897 (0.996) 0.890 (0.954) 0.897 (0.905) 0.904 (0.996) 0.905 (0.906) 0.906 (0.906) 0.906 (0.906) 0.906 (0.906) 0.906 (0.906) 0.906 (0.906) 0.906 (0.906) 0.908 (0.988) 0.988 (0.998) 0.988 (0.988) 0.988 (0.988) 0.988 (0.988) 0.988 (0.988) 0.988 (0.988) 0.988 (0.988) 0.988 (0.988) 0.988 (0.988)		ADASYN	0.997	0.999	0.998	0.998
abalone SMOTE SMOTEBorderline-1 SMOTEBorderline-2 SVMSMOTE 0.846 0.954 0.896 0.897 0.995 0.899 0.905 0.899 0.995 0.899 0.995 0.890 0.990 0.890 0.990 0.890 0.990 0.890 0.990 0.890 0.873 0.890 0.866 sick_euthyroid random SMOTEBorderline-1 SMOTEBorderline-1 SMOTEBorderline-2 SVMSMOTE 0.984 0.997 0.980 0.980 0.988 0.988 0.988 0.988 spectrometer SMOTEBorderline-1 SMOTEBorderline-2 SWOSMOTE 0.987 0.997 0.980 0.993 0.988 0.988 0.989 0.998 spectrometer random SMOTE 0.997 0.997 0.998 0.993 0.984 0.988 0.988 0.988 spectrometer random SMOTE 0.997 0.997 0.993 0.993 0.984 0.993 0.984 0.988 0.983 0.981 0.984 0.993 0.984 0.996 0.998 0.997 0.990 0.997 0.990 0.999 0.990 0.990 0.990 0.999 0.990 0.990 0.990 0.990 0.990 0.990 0.990 0					0.877	0.859
abalone SMOTEBorderline-1 SMOTEBorderline-2 SVMSMOTE 0.846 0.954 0.997 0.905 0.90 0.905 SVMSMOTE 0.859 0.955 0.904 0.873 0.860 0.873 0.905 0.873 0.860 0.873 ADASYN 0.822 0.930 0.988 0.988 0.988 0.978 0.986 0.968 0.987 0.978 0.978 0.980 0.978 0.978 0.978 0.980 0.978 0.996 0.980 0.980 0.978 0.996 0.998 0.980 0.978 0.996 0.998 0.980 0.978 0.996 0.998 0.980 0.978 0.996 0.998 0.983 0.984 0.986 0.996 0.998 0.999 0.984 0.997 0.990 0.999 0.990 0.990 0.999 0.990						0.870
SMOTEBorderline-2 SVMSMOTE SVMSMOTE SVMSMOTE SVMSMOTE SVMSMOTE SVMSMOTE SWOTEBORDER	, ,					0.890
SVMSMOTE 0.859 0.955 0.904 0.898 ADASYN 0.822 0.930 0.873 0.866	abalone				l	0.900
ADASYN 0.822 0.930 0.873 0.860						0.895
random				l		
SMOTE 0.976 0.980 0.978 0.978 sick_euthyroid SMOTEBorderline-1 0.984 0.987 0.986 0.986 SMOTEBorderline-2 0.975 0.956 0.966 0.966 SVMSMOTE 0.987 0.978 0.983 0.983 ADASYN 0.975 0.993 0.984 0.98 smotes 0.976 0.976 0.976 0.976 SMOTEBorderline-1 0.976 0.976 0.976 0.976 SMOTEBorderline-2 0.983 0.975 0.979 0.976 SVMSMOTE 1.000 0.983 0.991 0.99 ADASYN 0.940 1.000 0.969 0.96 SMOTEBorderline-1 0.990 1.000 0.995 0.99 SMOTEBorderline-2 0.993 1.000 0.995 0.99 SMOTEBorderline-1 0.990 1.000 0.996 0.99 ADASYN 0.987 1.000 0.996 0.99 SMOTEBorderline-						
Sick_euthyroid SMOTEBorderline-1 0.984 0.987 0.986 0.966 0.966 0.966 0.966 0.966 0.966 0.966 0.966 0.966 0.968 0.987 0.975 0.978 0.983 0.988 0.988 0.988 0.988 0.988 0.988 0.988 0.988 0.988 0.988 0.988 0.988 0.988 0.988 0.988 0.988 0.988 0.988 0.998				l .	!	! !
SMOTEBorderline-2 0.975 0.956 0.966 0.966 0.966 Notes				l	l	
SMOTEBorderline-2 0.987 0.978 0.983 0.985 0.986 0.987 0.978 0.983 0.985 0.987 0.975 0.993 0.984 0.985 0.986 0.996 0.990	sick_euthyroid			l		
ADASYN 0.975 0.993 0.984 0.988 0.988 0.988 0.999 0.990 0.900 0.9				l	l	
random				l		
SMOTE 0.992 1.000 0.996 0.996 0.996 0.975 0.979 0.978 0.983 0.991 0.999 0.984 0.990 0.961 0.962 0.96						
SMOTEBorderline-1 0.976 0.976 0.976 0.976 0.976 SMOTEBorderline-2 0.983 0.975 0.979 0.978 0.979 0.978 0.978 0.979 0.979 0.978 0.978 0.979 0.978 0.983 0.991 0.999 0.984 0.940 0.000 0.969 0.968 0.96						1.000
SMOTEBorderline-2 0.983 0.975 0.979 0.975 0.979 0.975 0.979 0.975 0.983 0.991 0.990 0.983 0.991 0.990 0.983 0.991 0.990 0.983 0.991 0.990 0.983 0.991 0.990 0.983 0.991 0.990 0.983 0.994 0.995						0.996
SMOTEBorderline-2 0.983 0.975 0.979 0.978 SVMSMOTE 1.000 0.983 0.991 0.999 ADASYN 0.940 1.000 0.969 0.969 SMOTE 0.990 1.000 0.995 0.999 SMOTEBorderline-1 0.990 1.000 0.995 0.999 SMOTEBorderline-2 0.993 1.000 0.996 0.999 SVMSMOTE 0.993 1.000 0.996 0.999 ADASYN 0.987 1.000 0.996 0.999 ADASYN 0.987 1.000 0.998 0.988 SMOTEBorderline-1 0.977 1.000 0.989 0.988 SMOTEBorderline-2 0.972 0.995 0.988 0.988 SMOTEBorderline-2 0.972 0.995 0.983 0.988 SVMSMOTE 0.976 0.996 0.985 0.988 ADASYN 0.984 0.997 0.990 0.999 SMOTEBorderline-1 0.942 0.985 0.963 0.968 SMOTEBorderline-2 0.932 0.973 0.952 0.955 SVMSMOTE 0.932 0.973 0.952 0.955 SVMSMOTE 0.942 0.985 0.963 0.968 ADASYN 0.951 0.985 0.967 0.966 ADASYN 0.951 0.985 0.967 0.966 SMOTEBorderline-1 0.997 0.985 0.967 0.966 SMOTEBorderline-1 0.997 0.957 0.931 0.925 SMOTEBorderline-1 0.907 0.957 0.931 0.925 SWMSMOTE 0.863 0.980 0.918 0.918 SMOTEBorderline-2 0.917 0.957 0.936 0.935 SWMSMOTE 0.954 0.946 0.950 0.945 ADASYN 0.865 0.968 0.914 0.907 SWMSMOTE 0.954 0.946 0.950 0.945 ADASYN 0.865 0.968 0.914 0.907 SWMSMOTE 0.954 0.946 0.950 0.945 ADASYN 0.865 0.968 0.914 0.907 SWMSMOTE 0.954 0.946 0.950 0.945 ADASYN 0.865 0.968 0.914 0.907 SWMSMOTE 0.954 0.946 0.950 0.945 ADASYN 0.865 0.968 0.914 0.907 SWMSMOTE 0.954 0.946 0.950 0.945 ADASYN 0.865 0.968 0.914 0.907 SWMSMOTE 0.954 0.966 0.950 0.945 ADASYN 0.865 0.968 0.914 0.907 SWMSMOTE 0.954 0.966 0.914 0.907 SWMSMOTE 0.955 0.968 0.914 0.907 SWMSMOTE 0.956 0.968 0.914 0.907 SWMSMOTE 0.957 0.957 0.957 0.957 0.957 SWMSMOTE 0.956 0.9	spectromotor			l		0.975
ADASYN 0.940 1.000 0.969 0.968 0.968 0.998 0.998 0.998 0.999 0.9	Special children			!		0.979
random 0.985 1.000 0.992 0.993 SMOTE 0.990 1.000 0.995 0.994 0.995				l .		0.991
SMOTE 0.990 1.000 0.995 0.985 0.98						0.965
SMOTEBorderline-1 0.990 1.000 0.995			0.985	1.000	0.992	0.993
SMOTEBorderline-1 0.990 1.000 0.995		SMOTE	0.990	1.000	0.995	0.995
SMOTEBorderline-2 0.993 1.000 0.996 0.99	aom ar1 0.4	SMOTEBorderline-1	0.990	1.000	0.995	0.995
SVMSMOTE	car_eva1_34	SMOTEBorderline-2				0.996
ADASYN 0.987 1.000 0.994 0.999 random 0.977 1.000 0.989 0.988 SMOTE 0.979 0.999 0.989 0.988 0.988 SMOTEBorderline-1 0.982 0.995 0.988 0.998 0.995 0.983 0.988 0.996 0.995 0.985 0.988 0.988 0.996 0.995 0.984 0.997 0.990 0.999 0.995 0.963 0.963 0.965 0.968						0.996
random						0.994
isolet						0.988
isolet SMOTEBorderline-1 SMOTEBorderline-2 SVMSMOTE 0.982 0.972 0.995 0.995 0.988 0.983 0.983 0.983 ADASYN 0.976 0.996 0.985 0.985 0.985 ADASYN 0.984 0.997 0.990 0.999 Fandom 0.944 1.000 0.971 0.97 SMOTE 0.932 0.973 0.952 0.955 SMOTEBorderline-1 SMOTEBorderline-2 0.933 0.967 0.950 0.950 ADASYN 0.951 0.985 0.967 0.967 ADASYN 0.951 0.985 0.967 0.967 SMOTE 0.863 0.980 0.918 0.915 SMOTEBorderline-1 SMOTEBorderline-1 SMOTEBorderline-2 0.917 0.957 0.931 0.929 SVMSMOTE 0.954 0.946 0.950 0.945 ADASYN 0.865 0.968 0.914 0.907						0.989
SMOTEBorderline-2 0.972 0.995 0.983 0.985 SVMSMOTE 0.976 0.996 0.985 0.985 0.985 ADASYN 0.984 0.997 0.990 0.999 0.999 0.999 0.999 0.999 0.999 0.999 0.999 0.999 0.991 0.991 0.992 0.973 0.952 0.955 0.963 0.965 0.96						0.988
SVMSMOTE 0.976 0.996 0.985 0.985 ADASYN 0.984 0.997 0.990 0.999 random 0.944 1.000 0.971 0.97 SMOTE 0.932 0.973 0.952 0.955 SMOTEBorderline-1 0.942 0.985 0.963 0.965 SMOTEBorderline-2 0.933 0.967 0.950 0.950 SVMSMOTE 0.952 0.984 0.968 0.968 ADASYN 0.951 0.985 0.967 0.967 SMOTE 0.863 0.980 0.918 0.918 SMOTEBorderline-1 0.907 0.957 0.931 0.929 SVMSMOTE 0.917 0.957 0.936 0.933 SVMSMOTE 0.954 0.946 0.950 0.949 ADASYN 0.865 0.968 0.914 0.907	isolet					
us_crime ADASYN 0.984 0.997 0.990 0.99 us_crime random 0.944 1.000 0.971 0.97 SMOTE 0.932 0.973 0.952 0.955 SMOTEBorderline-1 0.942 0.985 0.963 0.965 SWMSMOTE 0.952 0.984 0.968 0.965 ADASYN 0.951 0.985 0.967 0.966 SMOTE 0.863 0.980 0.918 0.918 SMOTEBorderline-1 0.907 0.957 0.931 0.929 SVMSMOTE 0.917 0.957 0.936 0.933 SVMSMOTE 0.954 0.946 0.950 0.949 ADASYN 0.865 0.968 0.914 0.907						
us_crime random SMOTE 0.944 0.902 0.973 0.952 0.953 0.965 0.952 0.953 0.963 0.965 0.963 0.965 SMOTEBorderline-1 SMOTEBorderline-2 SVMSMOTE 0.933 0.967 0.950 0.950 0.950 0.955 0.967 0.950 0.955 0.96				l .		
SMOTE 0.932 0.973 0.952 0.955 SMOTEBorderline-1 0.942 0.985 0.963 0.967 SMOTEBorderline-2 0.933 0.967 0.950 0.955 SVMSMOTE 0.952 0.984 0.968 0.96 ADASYN 0.951 0.985 0.967 0.96 SMOTE 0.863 0.980 0.918 0.918 SMOTEBorderline-1 0.907 0.957 0.931 0.929 SWOTEBorderline-2 0.917 0.957 0.936 0.933 SVMSMOTE 0.954 0.946 0.950 0.949 ADASYN 0.865 0.968 0.914 0.907						
us_crime SMOTEBorderline-1 SMOTEBorderline-2 SVMSMOTE 0.942 0.933 0.967 0.967 0.963 0.950 0.965 0.950 ADASYN 0.951 0.984 0.968 0.966 ADASYN 0.951 0.985 0.967 0.966 random 0.932 1.000 0.965 0.96 SMOTE 0.863 0.980 0.918 0.918 SMOTEBorderline-1 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				l		
us_crime SMOTEBorderline-2 SVMSMOTE 0.933 0.967 0.950 0.984 0.950 0.968 0.968 0.968 ADASYN 0.951 0.985 0.967 0.96' random 0.932 1.000 0.965 0.96' SMOTE 0.863 0.980 0.918 0.91' SMOTEBorderline-1 SMOTEBorderline-2 0.917 0.957 0.931 0.92' SVMSMOTE 0.954 0.946 0.950 0.94' ADASYN 0.865 0.968 0.914 0.90'						
SMOTEBorderline-2 0.933 0.967 0.950 0.951 SVMSMOTE 0.952 0.984 0.968 0.966 ADASYN 0.951 0.985 0.967 0.966 random 0.932 1.000 0.965 0.96 SMOTE 0.863 0.980 0.918 0.918 SMOTEBorderline-1 0.907 0.957 0.931 0.929 SVMSMOTEBorderline-2 0.917 0.957 0.936 0.933 SVMSMOTE 0.954 0.946 0.950 0.949 ADASYN 0.865 0.968 0.914 0.907						
yeast_ml8 ADASYN 0.951 0.985 0.967 0.965 random 0.932 1.000 0.965 0.96 SMOTE 0.863 0.980 0.918 0.918 SMOTEBorderline-1 0.907 0.957 0.931 0.929 SWOTEBorderline-2 0.917 0.957 0.936 0.935 SVMSMOTE 0.954 0.946 0.950 0.949 ADASYN 0.865 0.968 0.914 0.907					l .	0.950
yeast_ml8 random SMOTE SMOTE 0.932 0.980 0.980 0.918 0.918 0.915 SMOTEBorderline-1 SMOTEBorderline-2 SWOTEBorderline-2 SVMSMOTE 0.907 0.957 0.931 0.925 0.935 0.935 0.935 0.935 0.935 0.945 0.946 0.950 0.945 0.968 0.914 0.905 ADASYN 0.865 0.968 0.914 0.905						0.964
yeast_ml8 SMOTE SMOTE 0.863 0.980 0.918 0.918 0.918 0.918 0.914 0.907 0.957 0.931 0.924 0.917 0.957 0.931 0.924 0.917 0.957 0.936 0.933 0.914 0.946 0.950 0.944 0.946 0.950 0.944 0.946 0.950 0.944 0.946 0.950 0.914 0.907 0.957 0.968 0.914 0.907 0.965 0.968 0.914 0.907 0.907						0.967
yeast_ml8 SMOTEBorderline-1 SMOTEBorderline-2 0.907 0.917 0.957 0.957 0.931 0.931 0.929 0.935 SVMSMOTE ADASYN 0.954 0.865 0.946 0.958 0.914 0.914 0.909						0.964
yeast_ml8 SMOTEBorderline-2 0.917 0.957 0.936 0.935 SVMSMOTE 0.954 0.946 0.950 0.949 ADASYN 0.865 0.968 0.914 0.900				0.980	0.918	0.915
SMOTEBorderline-2 0.917 0.957 0.936 0.933 SVMSMOTE 0.954 0.946 0.950 0.949 ADASYN 0.865 0.968 0.914 0.907		SMOTEBorderline-1	0.907	0.957	0.931	0.929
SVMSMOTE 0.954 0.946 0.950 0.949 0.865 0.968 0.914 0.900		SMOTEBorderline-2		l		0.932
ADASYN 0.865 0.968 0.914 0.90'						0.949
				l .		0.907
TANGOH TOSTA TANGOTAL TOSTA	scene	random	0.917	1.000	0.957	0.960
				l .		0.942
				l .		0.942 0.937
Scono				l		
						0.954
						0.956
ADASYN 0.905 0.964 0.934 0.933		ADAS Y N	0.905	0.964	0.934	0.931

Table 2: Classification Result Based on Different Oversample Methods

	ication Result Based or				
Data Source	Method	Rec.	Pre.	F	G
	random	0.988	1.000	0.994	0.994
	SMOTE	1.000	1.000	1.000	1.000
libras_move	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
	random	0.981		0.990	0.990
thyroid_sick	l .		1.000		
	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
	random	0.772	0.823	0.797	0.791
	SMOTE	0.981	0.923	0.951	0.952
coil_2000	SMOTEBorderline-1	0.971	0.918	0.944	0.944
CO11_2000	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
	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
arrhythmia	SMOTEBorderline-1 SMOTEBorderline-2	0.947	0.991	0.968	0.967
	SVMSMOTE	0.947	1.000	0.986	0.997
	ADASYN	0.971	1.000	0.980	0.990 0.980
	random	0.903	0.907	0.982	0.980
	SMOTE	0.781	0.907 0.922	0.840 0.942	0.829 0.943
	SMOTE SMOTEBorderline-1			l	
$solar_flare_m0$	SMOTEBorderline-1 SMOTEBorderline-2	0.948 0.981	0.923 0.941	0.936 0.960	0.935 0.961
	l .			l	
	SVMSMOTE	0.983	0.928	0.955	0.956
	ADASYN	0.958	0.908	0.932	0.934
	random	0.983	1.000	0.992	0.990
oil	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
	random	0.993	1.000	0.996	0.996
car_eval_4	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
	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
$\mathbf{wine}_{-}\mathbf{quality}$	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
	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
letter_img	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
	random	0.934	1.000	0.966	0.965
	random SMOTE	0.934 0.956	1	l .	
		0.900	0.989	0.972 0.976	$0.970 \\ 0.976$
		0.000	0.000		ี บุษ/ก
$yeast_me2$	SMOTEBorderline-1	0.969	0.983		
$yeast_me2$	SMOTEBorderline-1 SMOTEBorderline-2	0.938	0.971	0.954	0.956
$yeast_me2$	SMOTEBorderline-1 SMOTEBorderline-2 SVMSMOTE	0.938 0.971	0.971 0.986	0.954 0.979	0.956 0.977
yeast_me2	SMOTEBorderline-1 SMOTEBorderline-2 SVMSMOTE ADASYN	0.938 0.971 0.957	0.971 0.986 0.984	0.954 0.979 0.971	0.956 0.977 0.966
yeast_me2	SMOTEBorderline-1 SMOTEBorderline-2 SVMSMOTE ADASYN random	0.938 0.971 0.957 0.958	0.971 0.986 0.984 0.902	0.954 0.979 0.971 0.929	0.956 0.977 0.966 0.931
yeast_me2	SMOTEBorderline-1 SMOTEBorderline-2 SVMSMOTE ADASYN random SMOTE	0.938 0.971 0.957 0.958 0.978	0.971 0.986 0.984 0.902 0.983	0.954 0.979 0.971 0.929 0.980	0.956 0.977 0.966 0.931 0.980
yeast_me2	SMOTEBorderline-1 SMOTEBorderline-2 SVMSMOTE ADASYN random SMOTE SMOTEBorderline-1	0.938 0.971 0.957 0.958 0.978 0.964	0.971 0.986 0.984 0.902 0.983 0.990	0.954 0.979 0.971 0.929 0.980 0.977	0.956 0.977 0.966 0.931 0.980 0.975
	SMOTEBorderline-1 SMOTEBorderline-2 SVMSMOTE ADASYN random SMOTE SMOTEBorderline-1 SMOTEBorderline-2	0.938 0.971 0.957 0.958 0.978 0.964 0.965	0.971 0.986 0.984 0.902 0.983 0.990 0.987	0.954 0.979 0.971 0.929 0.980 0.977 0.976	0.956 0.977 0.966 0.931 0.980 0.975 0.976
	SMOTEBorderline-1 SMOTEBorderline-2 SVMSMOTE ADASYN random SMOTE SMOTEBorderline-1 SMOTEBorderline-2 SVMSMOTE	0.938 0.971 0.957 0.958 0.978 0.964 0.965 0.976	0.971 0.986 0.984 0.902 0.983 0.990 0.987 0.968	0.954 0.979 0.971 0.929 0.980 0.977 0.976 0.972	0.956 0.977 0.966 0.931 0.980 0.975 0.976 0.972
	SMOTEBorderline-1 SMOTEBorderline-2 SVMSMOTE ADASYN random SMOTE SMOTEBorderline-1 SMOTEBorderline-2 SVMSMOTE ADASYN	0.938 0.971 0.957 0.958 0.978 0.964 0.965 0.976 0.958	0.971 0.986 0.984 0.902 0.983 0.990 0.987 0.968 0.990	0.954 0.979 0.971 0.929 0.980 0.977 0.976 0.972 0.974	0.956 0.977 0.966 0.931 0.980 0.975 0.976 0.972 0.973
	SMOTEBorderline-1 SMOTEBorderline-2 SVMSMOTE ADASYN random SMOTE SMOTEBorderline-1 SMOTEBorderline-2 SVMSMOTE ADASYN random	0.938 0.971 0.957 0.958 0.978 0.964 0.965 0.976 0.958 0.978	0.971 0.986 0.984 0.902 0.983 0.990 0.987 0.968 0.990 1.000	0.954 0.979 0.971 0.929 0.980 0.977 0.976 0.972 0.974 0.989	0.956 0.977 0.966 0.931 0.980 0.975 0.976 0.972 0.973 0.988
	SMOTEBorderline-1 SMOTEBorderline-2 SVMSMOTE ADASYN random SMOTE SMOTEBorderline-1 SMOTEBorderline-2 SVMSMOTE ADASYN random SMOTE	0.938 0.971 0.957 0.958 0.978 0.964 0.965 0.976 0.958 0.978	0.971 0.986 0.984 0.902 0.983 0.990 0.987 0.968 0.990 1.000 0.997	0.954 0.979 0.971 0.929 0.980 0.977 0.976 0.972 0.974 0.989 0.981	0.956 0.977 0.966 0.931 0.980 0.975 0.976 0.972 0.973 0.988 0.980
webpage	SMOTEBorderline-1 SMOTEBorderline-2 SVMSMOTE ADASYN random SMOTE SMOTEBorderline-1 SMOTEBorderline-2 SVMSMOTE ADASYN random SMOTE SMOTEBORDERLINE-1 SMOTEBORDERLINE-1	0.938 0.971 0.957 0.958 0.978 0.964 0.965 0.976 0.958 0.978 0.966 0.964	0.971 0.986 0.984 0.902 0.983 0.990 0.987 0.968 0.990 1.000 0.997 0.992	0.954 0.979 0.971 0.929 0.980 0.977 0.976 0.972 0.974 0.989 0.981 0.978	0.956 0.977 0.966 0.931 0.980 0.975 0.976 0.972 0.973 0.988 0.980 0.977
	SMOTEBorderline-1 SMOTEBorderline-2 SVMSMOTE ADASYN random SMOTE SMOTEBorderline-1 SMOTEBorderline-2 SVMSMOTE ADASYN random SMOTE SMOTEBorderline-1 SMOTEBorderline-1 SMOTEBorderline-1 SMOTEBorderline-1	0.938 0.971 0.957 0.958 0.978 0.964 0.965 0.978 0.978 0.966 0.964 0.965	0.971 0.986 0.984 0.902 0.983 0.990 0.987 0.968 0.990 1.000 0.997 0.992 0.990	0.954 0.979 0.971 0.929 0.980 0.977 0.976 0.972 0.974 0.989 0.981 0.978 0.977	0.956 0.977 0.966 0.931 0.980 0.975 0.976 0.972 0.973 0.988 0.980 0.977 0.977
webpage	SMOTEBorderline-1 SMOTEBorderline-2 SVMSMOTE ADASYN random SMOTE SMOTEBorderline-1 SMOTEBorderline-2 SVMSMOTE ADASYN random SMOTE SMOTEBORDERLINE-1 SMOTEBORDERLINE-1	0.938 0.971 0.957 0.958 0.978 0.964 0.965 0.976 0.958 0.978 0.966 0.964	0.971 0.986 0.984 0.902 0.983 0.990 0.987 0.968 0.990 1.000 0.997 0.992	0.954 0.979 0.971 0.929 0.980 0.977 0.976 0.972 0.974 0.989 0.981 0.978	0.956 0.977 0.966 0.931 0.980 0.975 0.976 0.972 0.973 0.988 0.980 0.977

Table 3: Classification Result Based on Different Oversample Methods

Data Source	Method	Rec.	Pre.	F	G
,	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
mammography	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
	random	0.988	0.998	0.993	0.993
protein_homo	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