Table 14: Classification results on benchmark datasets for the logistic regression classifier. F1 score averaged over 2 repeats of 5-fold (outer) cross-validation is reported. Best and second-best results are highlighted.

	Imbalanced	Random	Global	SMOTE	B-SMOTE	Safelevel	ADASYN	MWMOTE	DBSMOTE	LVQ	Simplicial	B-Simplicial
ecoli	0.5418	0.6116	0.6249	0.6016	0.6266	0.6067	0.5897	0.6503	0.6809	0.5792	0.6530	0.6407
optical_digits	0.8434	0.7642	0.7921	0.7958	0.7559	0.7863	0.7518	0.7862	0.7702	0.8383	0.8147	0.7614
pen_digits	0.7917	0.7219	0.7398	0.7343	0.5640	0.7302	0.5671	0.7036	0.7404	0.7526	0.7436	0.5620
abalone	0.0150	0.3587	0.3629	0.3627	0.3758	0.3666	0.3577	0.3769	0.3676	0.3357	0.3748	0.3751
sick_euthyroid	0.6720	0.6103	0.6243	0.6317	0.6273	0.5821	0.6090	0.6310	0.7122	0.6933	0.7271	0.6952
spectrometer	0.8374	0.8440	0.8734	0.8502	0.8465	0.8319	0.8422	0.8502	0.8409	0.7429	0.8636	0.8452
car_eval_34	0.9125	0.8806	0.8844	0.8835	0.8842	0.7881	0.8828	0.8827	0.8734	0.8820	0.8917	0.8904
us_crime	0.5354	0.4674	0.4891	0.4922	0.5198	0.4875	0.4767	0.4877	0.4717	0.4781	0.4950	0.5195
yeast_ml8	0.0319	0.1395	0.1420	0.1398	0.1417	0.1442	0.1434	0.1483	0.1424	0.1280	0.1365	0.1421
scene	0.1934	0.2481	0.2456	0.2480	0.2427	0.2348	0.2426	0.2552	0.2241	0.2338	0.2334	0.2576
libras_move	0.8179	0.7357	0.7520	0.7710	0.7876	0.7128	0.7621	0.7448	0.7448	0.6710	0.8356	0.8254
thyroid_sick	0.6554	0.4822	0.5054	0.5059	0.5215	0.4234	0.4940	0.5109	0.6449	0.6393	0.6413	0.6641
coil_2000	0.0197	0.1988	0.2010	0.1931	0.1977	0.1929	0.1914	0.1999	0.1229	0.1860	0.2058	0.2091
solar_flare_m0	0.1122	0.2046	0.1979	0.1917	0.1986	0.2008	0.1904	0.1962	0.1253	0.1922	0.1923	0.1986
oil	0.5085	0.4536	0.4976	0.4639	0.4523	0.3881	0.4698	0.4559	0.4381	0.4371	0.4998	0.4900
car_eval_4	0.8469	0.8303	0.8485	0.8436	0.8462	0.7957	0.8485	0.8533	0.8269	0.8471	0.8589	0.8559
wine_quality	0.0892	0.1760	0.1818	0.1765	0.1814	0.1825	0.1772	0.1870	0.1801	0.1705	0.1788	0.1828
letter_img	0.7418	0.5540	0.5930	0.5786	0.5051	0.5646	0.5099	0.5656	0.6581	0.5958	0.6480	0.5175
yeast_me2	0.2066	0.2624	0.2631	0.2656	0.3049	0.2622	0.2538	0.2793	0.3381	0.2528	0.2799	0.3422
ozone_level	0.1970	0.2522	0.2703	0.2661	0.3028	0.2363	0.2624	0.2843	0.2495	0.2862	0.3077	0.3253
abalone_19	0.0000	0.0463	0.0471	0.0474	0.0556	0.0473	0.0473	0.0534	0.0408	0.0477	0.0580	0.0589
mean	0.4557	0.4687	0.4827	0.4782	0.4733	0.4555	0.4605	0.4811	0.4854	0.4757	**0.5066**	**0.4933**
rank	7.2857	8.3333	5.5476	6.5476	5.9524	8.3333	8.4524	5.0476	7.2143	7.9524	**3.6190**	**3.7143**

Table 15: Classification results on benchmark datasets for the decision tree classifier. F1 score averaged over 2 repeats of 5-fold (outer) cross-validation is reported. Best and second-best results are highlighted.

	Imbalanced	Random	Global	SMOTE	B-SMOTE	Safelevel	ADASYN	MWMOTE	DBSMOTE	LVQ	Simplicial	B-Simplicial
ecoli	0.5481	0.5274	0.5399	0.5348	0.5373	0.5745	0.5370	0.5587	0.5552	0.5504	0.5338	0.5409
optical_digits	0.6309	0.5627	0.5551	0.5668	0.5365	0.5578	0.5212	0.5579	0.5632	0.5498	0.5581	0.5319
pen_digits	0.7525	0.6159	0.5578	0.6135	0.5468	0.6106	0.6731	0.5893	0.6068	0.5970	0.6266	0.5373
abalone	0.0000	0.3658	0.3719	0.3709	0.3703	0.3786	0.3670	0.3728	0.3774	0.3398	0.3785	0.3858
sick_euthyroid	0.8567	0.7613	0.8322	0.8283	0.8242	0.7445	0.8370	0.8369	0.8337	0.7466	0.8268	0.8350
spectrometer	0.6649	0.6088	0.5149	0.6025	0.5957	0.5954	0.5918	0.5435	0.6099	0.6458	0.6550	0.6080
car_eval_34	0.4483	0.3770	0.5174	0.4175	0.4140	0.4363	0.3948	0.4135	0.3652	0.3987	0.4552	0.4731
us_crime	0.3990	0.4131	0.4181	0.4293	0.4533	0.4349	0.4279	0.4088	0.4334	0.3425	0.4034	0.4407
yeast_ml8	0.0054	0.1305	0.1513	0.1460	0.1589	0.1462	0.1381	0.1513	0.1440	0.1140	0.1517	0.1514
scene	0.1492	0.2230	0.2024	0.2137	0.2085	0.2368	0.2061	0.2163	0.0554	0.0736	0.2002	0.2233
libras_move	0.3541	0.5478	0.6010	0.5739	0.5384	0.5055	0.5154	0.5756	0.6092	0.5819	0.5754	0.6357
thyroid_sick	0.8175	0.6487	0.7761	0.7014	0.7161	0.6142	0.6869	0.7379	0.8234	0.6612	0.7761	0.8049
coil_2000	0.0166	0.2127	0.1963	0.1796	0.1891	0.1922	0.1949	0.1970	0.0852	0.0220	0.1742	0.1875
solar_flare_m0	0.0845	0.1824	0.1989	0.1689	0.1684	0.1679	0.1647	0.1222	0.0836	0.1965	0.1561	0.1479
oil	0.4178	0.2609	0.3429	0.2850	0.3577	0.3184	0.2774	0.2500	0.3056	0.3310	0.3570	0.4499
car_eval_4	0.0000	0.4090	0.4132	0.4090	0.4090	0.4090	0.4090	0.4090	0.4090	0.3852	0.3922	0.4090
wine_quality	0.1498	0.2338	0.1424	0.1815	0.1641	0.1949	0.1377	0.1569	0.1388	0.2437	0.1664	0.1810
letter_img	0.6802	0.3643	0.5952	0.4351	0.3734	0.4373	0.3653	0.4305	0.6415	0.4674	0.6541	0.4270
yeast_me2	0.2514	0.2196	0.2218	0.2167	0.2648	0.2061	0.2095	0.2335	0.1096	0.2659	0.2349	0.2687
ozone_level	0.0190	0.1429	0.1481	0.1523	0.1871	0.1666	0.1582	0.1836	0.1579	0.1558	0.2076	0.1887
abalone_19	0.0000	0.0346	0.0227	0.0350	0.0608	0.0447	0.0357	0.0564	0.0425	0.0319	0.0328	0.0539
mean	0.3450	0.3734	0.3962	0.3839	0.3845	0.3796	0.3737	0.3810	0.3786	0.3667	**0.4055**	**0.4039**
rank	7.0000	7.5000	6.0952	6.5952	6.1190	6.0714	7.9286	6.2143	6.5952	7.5714	**5.7619**	**4.5476**