Table 9: AUC of four AE models on 47 datasets

Dataset	VanillaAE	EntropyAE	ROBOD	RandNet
4_breastw	0.891	**0.928**	0.897	0.695
37_Stamps	0.775	0.905	**0.910**	0.898
22_magic.gamma	**0.754**	0.667	0.618	0.598
44_Wilt	0.659	**0.769**	0.395	0.471
10_cover	0.896	0.898	**0.971**	**0.971**
14_glass	**0.788**	0.707	0.667	0.721
16_http	0.991	0.995	**0.996**	**0.996**
38_thyroid	0.913	0.934	0.967	**0.969**
12_fault	**0.654**	0.616	0.504	0.484
2_annthyroid	**0.725**	0.691	0.707	0.705
36_speech	**0.497**	0.477	0.472	0.474
21_Lymphography	0.972	0.996	0.996	**0.998**
42_WBC	0.948	**0.993**	0.989	0.989
29_Pima	0.594	**0.640**	0.581	0.481
47_yeast	**0.431**	0.401	0.429	0.429
40_vowels	0.872	**0.878**	0.688	0.552
28_pendigits	0.801	0.819	**0.933**	0.932
6_cardio	0.802	0.949	0.956	**0.957**
23_mammography	0.775	**0.866**	0.752	0.733
45_wine	0.608	**0.807**	0.560	0.646
13_fraud	0.949	0.951	0.951	0.951
25_musk	0.994	0.998	**1.000**	**1.000**
27_PageBlocks	0.893	0.915	**0.920**	0.900
9_census	**0.682**	0.677	0.661	0.659
30_satellite	**0.638**	0.624	0.743	0.740
18_Ionosphere	0.918	**0.927**	0.861	0.863
24_mnist	0.819	0.842	0.903	**0.904**
20_letter	**0.871**	0.846	0.595	0.524
46_WPBC	**0.494**	0.481	0.452	0.447
35_SpamBase	0.528	**0.550**	0.508	0.499
8_celeba	**0.792**	0.784	0.756	0.756
15_Hepatitis	0.651	**0.747**	0.727	0.750
41_Waveform	0.622	0.638	**0.682**	0.648
1_ALOI	0.552	**0.567**	0.545	0.544
33_skin	0.503	**0.691**	0.486	0.545
5_campaign	0.747	**0.738**	0.733	0.735
7_Cardiotocography	0.542	0.683	0.704	**0.713**
19_landsat	0.484	0.543	**0.549**	0.545
34_smtp	**0.905**	0.887	0.829	0.773
3_backdoor	**0.910**	**0.910**	0.893	0.892
43_WDBC	0.930	**0.986**	0.973	0.978
11_donors	**0.801**	0.726	0.608	0.596
26_optdigits	0.445	**0.531**	0.476	0.487
39_vertebral	0.461	0.385	**0.494**	0.486
31_satimage-2	0.952	0.971	**0.982**	0.979
32_shuttle	0.935	0.987	**0.993**	0.992
17_InternetAds	0.564	**0.615**	0.614	0.611

Table 10: AP of four AE models on 47 datasets

Dataset	VanillaAE	EntropyAE	ROBOD	RandNet
4_breastw	0.761	0.842	**0.874**	0.698
37_Stamps	0.221	0.344	**0.355**	0.339
22_magic.gamma	**0.677**	0.591	0.578	0.562
44_Wilt	0.077	**0.181**	0.041	0.048
10_cover	0.074	0.084	0.145	**0.147**
14_glass	**0.130**	0.113	0.103	0.109
16_http	0.325	0.463	0.355	**0.473**
38_thyroid	0.199	0.276	0.426	**0.455**
12_fault	**0.469**	0.443	0.372	0.356
2_annthyroid	0.192	0.179	0.224	**0.227**
36_speech	**0.024**	0.019	0.019	0.018
21_Lymphography	0.545	0.931	0.931	**0.948**
42_WBC	0.543	**0.924**	0.853	0.845
29_Pima	0.423	**0.465**	0.421	0.360
47_yeast	**0.305**	0.295	0.303	0.302
40_vowels	**0.279**	0.272	0.096	0.053
28_pendigits	0.083	0.081	0.205	**0.216**
6_cardio	0.369	0.607	**0.661**	0.659
23_mammography	0.091	**0.182**	0.152	0.157
45_wine	0.104	**0.238**	0.102	0.140
13_fraud	0.106	0.131	**0.156**	**0.156**
25_musk	0.883	0.954	**1.000**	**1.000**
27_PageBlocks	0.478	0.522	**0.565**	0.546
9_census	**0.095**	0.092	0.086	0.086
30_satellite	0.497	0.565	**0.695**	0.693
18_Ionosphere	0.906	**0.924**	0.803	0.798
24_mnist	0.369	0.377	0.442	**0.445**
20_letter	**0.361**	0.273	0.108	0.089
46_WPBC	**0.231**	0.227	0.213	0.211
35_SpamBase	0.399	**0.410**	0.391	0.389
8_celeba	0.076	**0.112**	0.107	0.107
15_Hepatitis	0.289	**0.343**	0.329	0.341
41_Waveform	0.047	0.045	**0.054**	0.048
1_ALOI	0.038	**0.039**	0.037	0.037
33_skin	0.199	**0.284**	0.184	0.203
5_campaign	**0.292**	0.279	0.283	0.288
7_Cardiotocography	0.334	0.417	0.454	**0.461**
19_landsat	0.195	0.215	**0.222**	**0.222**
34_smtp	0.165	0.348	0.366	**0.368**
3_backdoor	**0.547**	0.543	0.520	0.515
43_WDBC	0.204	**0.556**	0.469	0.497
11_donors	**0.132**	0.105	0.087	0.086
26_optdigits	0.024	**0.029**	0.025	0.025
39_vertebral	0.120	0.099	**0.124**	0.118
31_satimage-2	0.375	0.572	**0.778**	0.776
32_shuttle	0.620	0.853	**0.918**	0.917
17_InternetAds	0.225	**0.295**	0.293	0.288

Table 11: Training Time (Compared to VanillaAE) of four AE models on 47 datasets

Dataset	VanillaAE	EntropyAE	ROBOD	RandNet
4_breastw	1.00	0.08	1.18	7.61
37_Stamps	1.00	0.22	3.69	21.58
22_magic.gamma	1.00	0.00	3.66	21.63
44_Wilt	1.00	0.02	3.77	21.44
10_cover	1.00	0.00	3.71	21.72
14_glass	1.00	0.15	3.07	18.53
16_http	1.00	0.00	3.68	21.29
38_thyroid	1.00	0.02	3.31	19.01
12_fault	1.00	0.07	3.50	19.86
2_annthyroid	1.00	0.01	3.27	18.96
36_speech	1.00	0.02	3.33	33.63
21_Lymphography	1.00	0.17	3.04	19.96
42_WBC	1.00	0.13	3.07	19.35
29_Pima	1.00	0.16	3.12	19.13
47_yeast	1.00	0.04	3.15	19.19
40_vowels	1.00	0.11	3.17	19.22
28_pendigits	1.00	0.02	3.22	19.18
6_cardio	1.00	0.04	3.32	19.53
23_mammography	1.00	0.01	3.16	18.99
45_wine	1.00	0.33	4.37	28.90
13_fraud	1.00	0.00	3.67	20.79
25_musk	1.00	0.02	3.84	28.92
27_PageBlocks	1.00	0.02	3.69	21.35
9_census	1.00	0.00	3.53	40.85
30_satellite	1.00	0.02	3.25	21.64
18_Ionosphere	1.00	0.20	3.31	23.02
24_mnist	1.00	0.05	3.91	26.89
20_letter	1.00	0.08	3.91	22.05
46_WPBC	1.00	0.13	3.71	22.00
35_SpamBase	1.00	0.05	3.98	25.08
8_celeba	1.00	0.00	3.95	22.99
15_Hepatitis	1.00	0.86	2.66	18.01
41_Waveform	1.00	0.01	3.68	21.85
1_ALOI	1.00	0.00	3.89	22.02
33_skin	1.00	0.00	3.65	21.28
5_campaign	1.00	0.00	3.75	25.48
7_Cardiotocography	1.00	0.04	3.64	22.28
19_landsat	1.00	0.01	3.87	23.79
34_smtp	1.00	0.00	3.60	21.48
3_backdoor	1.00	0.00	3.90	30.01
43_WDBC	1.00	0.09	3.68	21.54
11_donors	1.00	0.00	3.51	21.84
26_optdigits	1.00	0.02	3.90	25.68
39_vertebral	1.00	0.38	3.46	21.39
31_satimage-2	1.00	0.01	3.79	22.23
32_shuttle	1.00	0.00	3.52	21.35
17_InternetAds	1.00	0.03	4.02	58.91

Table 12: Memory Comsuption (Compared to VanillaAE) of four AE models on 47 datasets

Dataset	VanillaAE	EntropyAE	ROBOD	RandNet
4_breastw	1.0	1.0	4.0	3.5
37_Stamps	1.0	1.0	4.0	3.5
22_magic.gamma	1.0	1.0	4.0	3.5
44_Wilt	1.0	1.0	4.0	3.5
10_cover	1.0	1.0	4.0	3.5
14_glass	1.0	1.0	4.0	3.5
16_http	1.0	1.0	4.0	3.5
38_thyroid	1.0	1.0	4.0	3.5
12_fault	1.0	1.0	4.2	3.5
2_annthyroid	1.0	1.0	4.0	3.5
36_speech	1.0	1.0	7.9	4.1
21_Lymphography	1.0	1.0	4.0	3.5
42_WBC	1.0	1.0	4.0	3.5
29_Pima	1.0	1.0	4.0	3.5
47_yeast	1.0	1.0	4.0	3.5
40_vowels	1.0	1.0	4.0	3.5
28_pendigits	1.0	1.0	4.0	3.5
6_cardio	1.0	1.0	4.2	3.5
23_mammography	1.0	1.0	4.0	3.5
45_wine	1.0	1.0	4.0	3.5
13_fraud	1.0	1.0	4.2	3.5
25_musk	1.0	1.0	5.4	3.9
27_PageBlocks	1.0	1.0	4.0	3.5
9_census	1.0	1.0	9.1	4.3
30_satellite	1.0	1.0	4.2	3.5
18_Ionosphere	1.0	1.0	4.2	3.5
24_mnist	1.0	1.0	4.7	3.7
20_letter	1.0	1.0	4.2	3.5
46_WPBC	1.0	1.0	4.2	3.5
35_SpamBase	1.0	1.0	4.4	3.5
8_celeba	1.0	1.0	4.2	3.5
15_Hepatitis	1.0	1.0	4.0	3.5
41_Waveform	1.0	1.0	4.2	3.5
1_ALOI	1.0	1.0	4.2	3.5
33_skin	1.0	1.0	4.0	3.5
5_campaign	1.0	1.0	4.4	3.5
7_Cardiotocography	1.0	1.0	4.2	3.5
19_landsat	1.0	1.0	4.2	3.5
34_smtp	1.0	1.0	4.0	3.5
3_backdoor	1.0	1.0	5.9	3.9
43_WDBC	1.0	1.0	4.2	3.5
11_donors	1.0	1.0	4.0	3.5
26_optdigits	1.0	1.0	4.4	3.5
39_vertebral	1.0	1.0	4.0	3.5
31_satimage-2	1.0	1.0	4.2	3.5
32_shuttle	1.0	1.0	4.0	3.5
17_InternetAds	1.0	1.0	6.7	1.6