In the name of Allah

Methods:

1. Leverage Score Sampling

10%	AUROC: Image level		AUROC: Pixel-level		Pro		Train time		Test time	
	patchcore	leverage	patchcore	leverage	patchcore	leverage	patchcore	leverage	patchcore	leverage
carpet	0.986	0.931	0.991	0.946	0.988	0.943	120.349	38.023	29.45	28.985
grid	0.979	0.712	0.988	0.388	0.984	0.351	100.923	29.977	16.496	16.218
leather	1	0.785	0.993	0.931	0.99	0.93	94.58	32.105	30.311	26.785
tile	0.995	0.837	0.957	0.761	0.941	0.749	85.055	27.768	27.322	25.861
wood	0.991	0.988	0.951	0.871	0.937	0.854	98.765	33.323	20.8	19.552
bottle	1	0.317	0.985	0.491	0.98	0.493	69.725	25.078	16.185	16.44
cable	0.997	0.6	0.984	0.662	0.975	0.665	83.293	30.997	33.635	32.463
capsule	0.979	0.363	0.99	0.904	0.987	0.905	79.17	29.849	31.247	28.24
hazelnut	1	0.947	0.987	0.95	0.979	0.939	209.849	51.185	30.575	29.798
metal_nut	0.999	0.353	0.983	0.745	0.979	0.754	74.644	24.022	24.077	21.781
pill	0.967	0.615	0.978	0.721	0.976	0.719	106.885	31.665	39.695	36.009
screw	0.988	0.491	0.995	0.89	0.994	0.887	140.237	36.713	38.431	35.86
toothbrush	1	0.656	0.986	0.846	0.98	0.845	12.172	8.112	7.383	6.569
transistor	0.999	0.503	0.961	0.701	0.927	0.719	76.536	29.165	23.517	21.853
zipper	0.995	0.247	0.989	0.793	0.986	0.799	87.72	27.539	31.403	32.903
mean	**0.992**	0.623	**0.981**	0.773	**0.974**	0.77	95.993	**30.368**	26.702	**25.288**

2. Facility Location

10%	AUROC: Image level		AUROC: Pixel-level		Pro		Train time		Test time	
	patchcore	facility	patchcore	facility	patchcore	facility	patchcore	facility	patchcore	facility
carpet	0.986	0.987	0.991	0.991	0.988	0.988	120.349	560.915	29.45	28.675
grid	0.979	0.965	0.988	0.986	0.984	0.981	100.923	563.464	16.496	17.626
leather	1	1	0.993	0.993	0.99	0.99	94.58	513.69	30.311	30.57
tile	0.995	0.992	0.957	0.953	0.941	0.937	85.055	459.327	27.322	29.218
wood	0.991	0.989	0.951	0.95	0.937	0.936	98.765	532.914	20.8	21.162
bottle	1	1	0.985	0.984	0.98	0.979	69.725	382.019	16.185	21.043
cable	0.997	0.979	0.984	0.981	0.975	0.972	83.293	442.54	33.635	32.957
capsule	0.979	0.965	0.99	0.989	0.987	0.987	79.17	474.694	31.247	28.968
hazelnut	1	1	0.987	0.986	0.979	0.978	209.849	580.397	30.575	27.265
metal_nut	0.999	0.998	0.983	0.981	0.979	0.977	74.644	422.693	24.077	22.415
pill	0.967	0.945	0.978	0.967	0.976	0.965	106.885	557.966	39.695	36.856
screw	0.988	0.857	0.995	0.991	0.994	0.99	140.237	563.498	38.431	36.91
toothbrush	1	1	0.986	0.986	0.98	0.98	12.172	48.457	7.383	7.293
transistor	0.999	0.997	0.961	0.945	0.927	0.914	76.536	399.701	23.517	24.004
zipper	0.995	0.992	0.989	0.988	0.986	0.985	87.72	502.076	31.403	33.637
mean	**0.992**	0.978	**0.981**	0.978	**0.974**	0.971	**95.993**	466.957	26.702	**26.573**

3. kdpp

10%	AUROC: Image level		AUROC: Pixel-level		Pro		Train time		Test time	
	patchcore	kdpp	patchcore	kdpp	patchcore	kdpp	patchcore	kdpp	patchcore	kdpp
carpet	0.986	0.988	0.991	0.99	0.988	0.988	120.349	657.803	29.45	16.678
grid	0.979	0.876	0.988	0.952	0.984	0.947	100.923	610.505	16.496	8.737
leather	1	1	0.993	0.993	0.99	0.99	94.58	605.122	30.311	24.985
tile	0.995	0.991	0.957	0.953	0.941	0.937	85.055	1018.98	27.322	15.527
wood	0.991	0.991	0.951	0.949	0.937	0.936	98.765	1019.416	20.8	16.407
bottle	1	0.992	0.985	0.97	0.98	0.964	69.725	591.253	16.185	8.727
cable	0.997	0.79	0.984	0.956	0.975	0.947	83.293	1013.975	33.635	19.162
capsule	0.979	0.947	0.99	0.988	0.987	0.986	79.17	1019.037	31.247	27.193
hazelnut	1	1	0.987	0.986	0.979	0.978	209.849	642.95	30.575	21.542
metal_nut	0.999	0.995	0.983	0.979	0.979	0.976	74.644	1011.155	24.077	20.04
pill	0.967	0.685	0.978	0.96	0.976	0.959	106.885	1021.143	39.695	19.944
screw	0.988	0.771	0.995	0.987	0.994	0.986	140.237	618.394	38.431	29.179
toothbrush	1	0.869	0.986	0.98	0.98	0.974	12.172	555.322	7.383	5.97
transistor	0.999	0.991	0.961	0.938	0.927	0.908	76.536	1027.689	23.517	20.518
zipper	0.995	0.987	0.989	0.988	0.986	0.985	87.72	594.219	31.403	25.906
mean	**0.992**	0.925	**0.981**	0.971	**0.974**	0.964	**95.993**	800.464	26.702	**18.701**

4. CLARA

10%	AUROC: Image level		AUROC: Pixel-level		Pro		Train time		Test time	
	patchcore	CLARA	patchcore	CLARA	patchcore	CLARA	patchcore	CLARA	patchcore	CLARA
carpet	0.986	0.947	0.991	0.985	0.988	0.983	120.349	53.691	29.45	16.047
grid	0.979	0.721	0.988	0.852	0.984	0.857	100.923	44.629	16.496	7.807
leather	1	0.987	0.993	0.992	0.99	0.99	94.58	45.313	30.311	16.785
tile	0.995	0.884	0.957	0.939	0.941	0.922	85.055	42.899	27.322	14.31
wood	0.991	0.962	0.951	0.942	0.937	0.929	98.765	48.424	20.8	10.984
bottle	1	0.57	0.985	0.8	0.98	0.792	69.725	35.759	16.185	8.518
cable	0.997	0.561	0.984	0.796	0.975	0.803	83.293	43.353	33.635	21.28
capsule	0.979	0.501	0.99	0.887	0.987	0.888	79.17	42.019	31.247	16.575
hazelnut	1	0.85	0.987	0.94	0.979	0.932	209.849	74.8	30.575	13.952
metal_nut	0.999	0.53	0.983	0.751	0.979	0.758	74.644	36.03	24.077	12.113
pill	0.967	0.533	0.978	0.84	0.976	0.839	106.885	48.123	39.695	20.385
screw	0.988	0.444	0.995	0.899	0.994	0.9	140.237	54.031	38.431	17.579
toothbrush	1	0.433	0.986	0.904	0.98	0.901	12.172	12.585	7.383	5.836
transistor	0.999	0.458	0.961	0.714	0.927	0.725	76.536	41.349	23.517	12.964
zipper	0.995	0.788	0.989	0.963	0.986	0.96	87.72	39.86	31.403	16.784
mean	**0.992**	0.678	**0.981**	0.88	**0.974**	0.879	95.993	**44.191**	26.702	**14.128**

5.Kmeans+

10%	AUROC: Image level		AUROC: Pixel-level		Pro		Train time		Test time	
	patchcore	KM++	patchcore	KM++	patchcore	KM++	patchcore	KM++	patchcore	KM++
carpet	0.986	0.982	0.991	0.991	0.988	0.988	120.349	280.428	29.45	23.196
grid	0.979	0.927	0.988	0.982	0.984	0.976	100.923	267.441	16.496	11.073
leather	1	1	0.993	0.992	0.99	0.989	94.58	272.336	30.311	19.882
tile	0.995	0.993	0.957	0.95	0.941	0.933	85.055	268.01	27.322	22.8
wood	0.991	0.988	0.951	0.945	0.937	0.93	98.765	275.986	20.8	13.206
bottle	1	1	0.985	0.983	0.98	0.978	69.725	260.862	16.185	11.825
cable	0.997	0.965	0.984	0.979	0.975	0.969	83.293	268.215	33.635	24.467
capsule	0.979	0.932	0.99	0.988	0.987	0.986	79.17	267.591	31.247	20.828
hazelnut	1	1	0.987	0.985	0.979	0.977	209.849	286.857	30.575	17.111
metal_nut	0.999	0.988	0.983	0.978	0.979	0.975	74.644	260.192	24.077	15.5
pill	0.967	0.919	0.978	0.963	0.976	0.961	106.885	270.446	39.695	24.533
screw	0.988	0.712	0.995	0.988	0.994	0.986	140.237	275.957	38.431	21.922
toothbrush	1	1	0.986	0.987	0.98	0.982	12.172	220.601	7.383	6.997
transistor	0.999	0.992	0.961	0.939	0.927	0.908	76.536	265.019	23.517	16.062
zipper	0.995	0.991	0.989	0.987	0.986	0.983	87.72	266.091	31.403	20.949
mean	0.992	0.959	0.981	0.976	0.974	0.968	95.993	267.069	26.702	18.023

6. MRMC

10%	AUROC: Image level		AUROC: Pixel-level		Pro		Train time		Test time	
	patchcore	MRMC	patchcore	MRMC	patchcore	MRMC	patchcore	MRMC	patchcore	MRMC
carpet	0.986	0.986	0.991	0.99	0.988	0.988	120.349	1638.941	29.45	15.26
grid	0.979	0.725	0.988	0.747	0.984	0.74	100.923	1637.256	16.496	8.054
leather	1	1	0.993	0.992	0.99	0.99	94.58	1646.576	30.311	15.549
tile	0.995	0.987	0.957	0.951	0.941	0.934	85.055	1631.638	27.322	13.616
wood	0.991	0.983	0.951	0.934	0.937	0.919	98.765	1634.945	20.8	10.704
bottle	1	0.974	0.985	0.967	0.98	0.961	69.725	1641.359	16.185	8.888
cable	0.997	0.856	0.984	0.947	0.975	0.938	83.293	1688.405	33.635	18.799
capsule	0.979	0.751	0.99	0.978	0.987	0.976	79.17	1636.179	31.247	16.844
hazelnut	1	0.969	0.987	0.961	0.979	0.949	209.849	1656.562	30.575	14.823
metal_nut	0.999	0.631	0.983	0.91	0.979	0.912	74.644	1642.603	24.077	12.559
pill	0.967	0.815	0.978	0.947	0.976	0.945	106.885	1646.109	39.695	19.17
screw	0.988	0.482	0.995	0.916	0.994	0.914	140.237	1644.371	38.431	17.164
toothbrush	1	0.644	0.986	0.946	0.98	0.943	12.172	1611.506	7.383	5.284
transistor	0.999	0.735	0.961	0.869	0.927	0.854	76.536	1627.362	23.517	12.75
zipper	0.995	0.736	0.989	0.972	0.986	0.968	87.72	1626.251	31.403	16.813
mean	0.992	0.818	0.981	0.935	0.974	0.929	95.993	1640.671	26.702	13.752

7. ELFS

10%	AUROC: Image level		AUROC: Pixel-level		Pro		Train time		Test time	
	patchcore	ELFS	patchcore	ELFS	patchcore	ELFS	patchcore	ELFS	patchcore	ELFS
carpet	0.986	0.983	0.991	0.99	0.988	0.989	120.349	1812.936	29.45	265.289
grid	0.979	1	0.988	0.992	0.984	0.99	100.923	1608.847	16.496	184.766
leather	1	1	0.993	0.995	0.99	0.994	94.58	1405.833	30.311	189.69
tile	0.995	0.984	0.957	0.963	0.941	0.95	85.055	1241.564	27.322	176.686
wood	0.991	0.999	0.951	0.968	0.937	0.959	98.765	1427.384	20.8	137.091
bottle	1	0.986	0.985	0.978	0.98	0.974	69.725	1031.663	16.185	100.224
cable	0.997	0.89	0.984	0.952	0.975	0.943	83.293	1184.33	33.635	253.918
capsule	0.979	0.952	0.99	0.955	0.987	0.953	79.17	1119.705	31.247	159.518
hazelnut	1	1	0.987	0.986	0.979	0.978	209.849	1405.833	30.575	189.69
metal_nut	0.999	0.996	0.983	0.981	0.979	0.979	74.644	1138.209	24.077	178.644
pill	0.967	0.948	0.978	0.975	0.976	0.973	106.885	1658.614	39.695	334.436
screw	0.988	0.992	0.995	0.997	0.994	0.996	140.237	2356.71	38.431	284.982
toothbrush	1	1	0.986	0.984	0.98	0.977	12.172	100.694	7.383	23.808
transistor	0.999	0.939	0.961	0.824	0.927	0.79	76.536	1072.512	23.517	139.798
zipper	0.995	0.972	0.989	0.99	0.986	0.988	87.72	1342.479	31.403	206.615
mean	**0.992**	0.9760	**0.981**	0.9686	**0.974**	0.96219	95.993	1327.1542	26.702	188.3436

8. MRC

10%	AUROC: Image level		AUROC: Pixel-level		Pro		Train time		Test time	
	patchcore	MRC	patchcore	MRC	patchcore	MRC	patchcore	MRC	patchcore	MRC
Carpet	0.986	0.988	0.991	0.991	0.988	0.988	120.349	252.886	29.45	50.903
Grid	0.979	0.974	0.988	0.987	0.984	0.982	100.923	222.057	16.496	15.85
Leather	1	1	0.993	0.992	0.99	0.99	94.58	204.588	30.311	26.18
Tile	0.995	0.991	0.957	0.953	0.941	0.936	85.055	174.681	27.322	24.673
Wood	0.991	0.99	0.951	0.945	0.937	0.93	98.765	202.95	20.8	17.662
Bottle	1	1	0.985	0.984	0.98	0.978	69.725	150.793	16.185	17.418
Cable	0.997	0.999	0.984	0.984	0.975	0.975	83.293	176.212	33.635	32.061
Capsule	0.979	0.975	0.99	0.989	0.987	0.987	79.17	168.837	31.247	29.137
Hazelnut	1	1	0.987	0.986	0.979	0.978	209.849	473.002	30.575	28.809
metal_nut	0.999	0.998	0.983	0.982	0.979	0.978	74.644	162.116	24.077	24.466
Pill	0.967	0.963	0.978	0.977	0.976	0.975	106.885	230.502	39.695	33.809
Screw	0.988	0.983	0.995	0.995	0.994	0.993	140.237	314.309	38.431	53.113
toothbrush	1	1	0.986	0.986	0.98	0.981	12.172	20.042	7.383	7.041
Transistor	0.999	1	0.961	0.961	0.927	0.926	76.536	156.452	23.517	20.584
Zipper	0.995	0.994	0.989	0.988	0.986	0.985	87.72	186.669	31.403	38.219
Mean	**0.992**	0.99	**0.981**	0.98	**0.974**	0.972	95.993	206.406	26.702	27.995

9.kcenter

10%	AUROC: Image level		AUROC: Pixel-level		Pro		Train time		Test time	
	patchcore	kcent	patchcore	Kcent	patchcore	kcent	patchcore	kcent	patchcore	Kcent
Carpet	0.986	0.985	0.991	0.991	0.988	0.988	120.349	7709.884	29.45	31.141
Grid	0.979	0.978	0.988	0.987	0.984	0.982	100.923	6669.962	16.496	16.258
Leather	1	1	0.993	0.992	0.99	0.99	94.58	5644.824	30.311	26.479
Tile	0.995	0.992	0.957	0.955	0.941	0.938	85.055	4966.696	27.322	43.216
Wood	0.991	0.991	0.951	0.945	0.937	0.93	98.765	6355.132	20.8	34.053
Bottle	1	1	0.985	0.984	0.98	0.978	69.725	3762.147	16.185	23.551
Cable	0.997	0.999	0.984	0.984	0.975	0.975	83.293	4876.691	33.635	31.519
Capsule	0.979	0.974	0.99	0.989	0.987	0.987	79.17	4752.648	31.247	27.474
Hazelnut	1	1	0.987	0.986	0.979	0.978	209.849	15242.55	30.575	41.706
metal_nut	0.999	1	0.983	0.982	0.979	0.978	74.644	4623.431	24.077	22.238
Pill	0.967	0.967	0.978	0.979	0.976	0.977	106.885	7637.656	39.695	39.551
Screw	0.988	0.982	0.995	0.995	0.994	0.993	140.237	10815.11	38.431	41.238
toothbrush	1	0.997	0.986	0.986	0.98	0.981	12.172	363.543	7.383	7.63
Transistor	0.999	1	0.961	0.964	0.927	0.929	76.536	4218.266	23.517	21.201
Zipper	0.995	0.994	0.989	0.988	0.986	0.985	87.72	5986.58	31.403	30.435
Mean	0.992	0.991	0.981	0.981	0.974	0.973	95.993	6241.675	26.702	29.179