A. Experimental Results from Synthetic Datasets

In this section we include the simulation results on synthetic datasets from using two different anomaly detectors, Isolation Forest and LODA in table 1-3 and 4-6 respectively. For using LODA, when training it on the nominal dataset, we build 1 000 random projections, and each of them is built using a bootstrap resample of the nominal dataset. After finishing building all projections, we calculate the anomaly score for each point in nominal dataset only using the projections that didn't use this point, and calculate the anomaly scores for mixture dataset, G_0 and G_a using all the projections. For all cases, we include results from targeting on different recalls which are 98%, 95% and 90%. In table 1-6, the oracle FPR column is the mean of 100 oracle FPRs in each setting.

In table 7, we include the results we used for plotting figure 2. The results are the 1st quartile, median and 3rd quartile of FPR from experiments using Iforest with target recall 95%. Here the oracle FPR column is the median of 100 oracle FPRs.

B. Experimental Results from UCI and Image Datasets

In this section we include results of performance on UCI benchmarks, MNIST and Tiny Imagenet and Tables 8-22 illustrate the results. The experimental protocol is similar to synthetic datasets and two state of the art anomaly detectors Isolation forest, LODA are applied. For Isolation forest we train Forest with 1000 trees on nominal dataset and use out of bag estimates of this dataset to estimate the nominal datasets anomaly score distribution. For LODA we build 1000 projections and similar to Isolation forest we get anomaly score for each point in nominal dataset using the projections that didn't use this point.Tables 11-16 illustrate the results of LODA for 6 different datasets for varying values of η and report the observed recall, False positive rate averaged over 100 runs of each experiment. Tables 17-22 report the results for Isolation Forest and it can be observed the performance of both LODA,Isolation Forest are similar.

For Image datasets we follow the same protocol as UCI for MNIST and apply Isolation Forest on the input image but for Tiny Imagenet the anomaly scores are obtained differently. We first train a Wide Residual Network (40-2) classifier on the 200 nominal classes of Tiny Imagenet and apply baseline method (Hendrycks & Gimpel, 2017) on validation data to get the nominal dataset distribution and later apply the same method on the mixture dataset which will have α proportion of aliens which are basically from 800 held out classes.Tables 8-10 illustrate the results for these datasets for target recall of 98%,95% and 90%.

Table 1. n^*, recall (i.e. alien detection rate) and false positive rate from experiments using 9-dimensional normal data, 98%, iForest

			Basic CDF			Iso CDF		
			Recall	False Positive Rate		Recall	False Positive Rate	
α	n	n^*	Recall±CI	FPR±CI	Oracle	Recall±CI	FPR±CI	Oracle
0.01	100	247818	0.710±0.033	0.033±0.027	0.102	0.929±0.029	0.512±0.080	0.102
	500	1167215	0.862±0.019	0.033±0.024	0.042	0.972±0.016	0.543±0.079	0.042
	1000	1829649	0.884±0.015	0.031±0.024	0.036	0.980±0.009	0.574±0.080	0.036
	5000	4236646	0.920±0.010	0.060±0.038	0.039	0.985±0.007	0.506±0.079	0.039
	10000	6363404	0.932±0.009	0.065±0.034	0.037	0.984±0.007	0.520±0.080	0.037
0.05	100	23373	0.826±0.027	0.088±0.037	0.101	0.950±0.022	0.502±0.081	0.101
	500	239656	0.939±0.009	0.064±0.032	0.042	0.979±0.007	0.465±0.081	0.042
	1000	259309	0.940±0.008	0.046±0.025	0.037	0.977±0.007	0.477±0.085	0.037
	5000	1067189	0.961±0.005	0.083±0.039	0.039	0.984±0.005	0.411±0.080	0.039
	10000	1536752	0.965±0.004	0.063±0.026	0.037	0.987±0.004	0.434±0.076	0.037
0.10	100	20178	0.907±0.017	0.105±0.033	0.100	0.977±0.010	0.549±0.075	0.100
	500	107381	0.951±0.007	0.071±0.035	0.042	0.985±0.005	0.482±0.080	0.042
	1000	196205	0.960±0.005	0.062±0.023	0.037	0.982±0.005	0.419±0.081	0.037
	5000	456821	0.970±0.004	0.075±0.031	0.039	0.988±0.004	0.403±0.075	0.039
	10000	861861	0.975±0.003	0.088±0.034	0.037	0.989±0.003	0.433±0.077	0.037
0.20	100	7550	0.946±0.011	0.158±0.045	0.101	0.974±0.010	0.496±0.075	0.101
	500	80449	0.971±0.005	0.131±0.045	0.042	0.988±0.004	0.484±0.078	0.042
	1000	110875	0.972±0.004	0.098±0.038	0.037	0.989±0.004	0.475±0.079	0.037
	5000	498016	0.977±0.002	0.048±0.010	0.039	0.985±0.003	0.254±0.066	0.039
	10000	670130	0.977±0.002	0.051±0.019	0.037	0.984±0.003	0.216±0.060	0.037
0.50	100	7053	0.970±0.005	0.156±0.036	0.102	0.982±0.005	0.395±0.073	0.102
	500	34712	0.977±0.003	0.056±0.009	0.042	0.984±0.003	0.256±0.065	0.042
	1000	70925	0.979±0.002	0.053±0.014	0.036	0.985±0.003	0.196±0.052	0.036
	5000	167019	0.978±0.001	0.039±0.002	0.039	0.979±0.001	0.049±0.014	0.039
	10000	451373	0.979±0.001	0.036±0.001	0.037	0.979±0.001	0.047±0.016	0.037

Table 2. n^*, recall (i.e. alien detection rate) and false positive rate from experiments using 9-dimensional normal data, 95%, iForest

			Basic CDF			Iso CDF		
			Recall	False Positive Rate		Recall	False Positive Rate	
α	n	n^*	Recall±CI	FPR±CI	Oracle	Recall±CI	FPR±CI	Oracle
0.01	100	275039	0.710±0.033	0.033±0.027	0.052	0.929±0.029	0.509±0.080	0.052
	500	1474209	0.862±0.019	0.033±0.024	0.015	0.972±0.016	0.533±0.079	0.015
	1000	2462157	0.884±0.015	0.030±0.024	0.012	0.978±0.010	0.557±0.081	0.012
	5000	6171393	0.911±0.010	0.039±0.030	0.014	0.982±0.008	0.496±0.080	0.014
	10000	9309633	0.918±0.010	0.054±0.032	0.014	0.981±0.008	0.495±0.081	0.014
0.05	100	27589	0.826±0.027	0.082±0.035	0.051	0.947±0.022	0.489±0.081	0.051
	500	243154	0.920±0.010	0.035±0.020	0.015	0.975±0.009	0.440±0.079	0.015
	1000	307512	0.923±0.009	0.022±0.011	0.012	0.966±0.010	0.420±0.084	0.012
	5000	1356124	0.943±0.005	0.040±0.028	0.014	0.973±0.007	0.351±0.079	0.014
	10000	1553411	0.945±0.005	0.024±0.009	0.014	0.972±0.006	0.314±0.074	0.014
0.10	100	28043	0.906±0.016	0.101±0.033	0.050	0.969±0.013	0.511±0.077	0.050
	500	109029	0.933±0.009	0.055±0.032	0.015	0.974±0.008	0.397±0.078	0.015
	1000	157112	0.934±0.006	0.017±0.006	0.012	0.969±0.007	0.313±0.075	0.012
	5000	1232102	0.949±0.004	0.027±0.018	0.014	0.967±0.006	0.194±0.061	0.014
	10000	861861	0.951±0.003	0.027±0.016	0.014	0.964±0.005	0.192±0.063	0.014
0.20	100	8666	0.929±0.012	0.126±0.042	0.051	0.963±0.013	0.428±0.073	0.051
	500	121266	0.953±0.006	0.054±0.025	0.015	0.977±0.006	0.360±0.075	0.015
	1000	177212	0.949±0.004	0.018±0.004	0.012	0.968±0.006	0.273±0.072	0.012
	5000	581132	0.949±0.002	0.014±0.001	0.014	0.953±0.003	0.039±0.024	0.014
	10000	776090	0.949±0.002	0.014±0.001	0.014	0.952±0.003	0.042±0.028	0.014
0.50	100	6349	0.952±0.006	0.084±0.021	0.052	0.966±0.007	0.262±0.061	0.052
	500	56529	0.951±0.003	0.018±0.002	0.015	0.954±0.004	0.038±0.021	0.015
	1000	111994	0.951±0.002	0.013±0.001	0.012	0.952±0.002	0.014±0.001	0.012
	5000	292413	0.950 ±0.001	0.014± 0.000	0.014	0.950±0.001	0.014±0.000	0.014
	10000	379279	0.950 ±0.001	0.014± 0.000	0.014	0.950± 0.001	0.014±0.000	0.014

Table 3. n^*, recall (i.e. alien detection rate) and false positive rate from experiments using 9-dimensional normal data, 90%, iForest

			Basic CDF			Iso CDF		
			Recall	False Positive Rate		Recall	False Positive Rate	
α	n	n^*	Recall±CI	FPR±CI	Oracle	Recall±CI	FPR±CI	Oracle
0.01	100	331513	0.710±0.033	0.033±0.027	0.026	0.929±0.029	0.509±0.080	0.026
	500	2340744	0.862±0.019	0.033±0.024	0.005	0.970±0.016	0.517±0.078	0.005
	1000	3222506	0.859±0.014	0.011±0.008	0.004	0.976±0.011	0.542±0.081	0.004
	5000	5918805	0.869±0.011	0.012±0.017	0.004	0.976±0.01	0.476±0.079	0.004
	10000	12543171	0.884±0.010	0.012±0.009	0.005	0.971±0.011	0.458±0.080	0.005
0.05	100	37658	0.826±0.027	0.081±0.034	0.026	0.936±0.024	0.468±0.081	0.026
	500	403920	0.893±0.011	0.02 ±0.015	0.006	0.960±0.012	0.372±0.075	0.006
	1000	482922	0.888±0.010	0.015±0.011	0.004	0.945±0.014	0.381±0.082	0.004
	5000	2307205	0.901±0.006	0.007±0.004	0.004	0.939±0.011	0.228±0.070	0.004
	10000	2629242	0.898±0.005	0.005±0.001	0.005	0.923±0.009	0.139±0.056	0.005
0.10	100	39085	0.879±0.017	0.059±0.021	0.025	0.957±0.016	0.463±0.076	0.025
	500	139647	0.900±0.010	0.019±0.014	0.005	0.944±0.013	0.297±0.073	0.005
	1000	156669	0.888±0.008	0.005±0.001	0.004	0.925±0.012	0.166±0.058	0.004
	5000	1867515	0.902±0.003	0.004±0.000	0.003	0.911±0.006	0.060 ±0.039	0.003
	10000	1232102	0.900± 0.003	0.005±0.000	0.005	0.903±0.004	0.016±0.015	0.005
0.20	100	6481	0.881±0.017	0.060±0.022	0.026	0.942±0.016	0.359±0.072	0.026
	500	63235	0.909±0.007	0.010±0.003	0.005	0.937±0.010	0.170±0.057	0.005
	1000	153077	0.902±0.004	0.005±0.000	0.004	0.913±0.007	0.066±0.040	0.004
	5000	397467	0.898±0.002	0.003±0.000	0.004	0.898±0.002	0.004±0.000	0.004
	10000	1088542	0.899±0.002	0.005±0.000	0.005	0.900± 0.002	0.005±0.000	0.005
0.50	100	4400	0.912±0.008	0.038±0.005	0.026	0.920±0.010	0.107±0.042	0.026
	500	22825	0.904±0.004	0.006±0.000	0.005	0.904±0.004	0.006±0.000	0.005
	1000	44373	0.903±0.003	0.004±0.000	0.004	0.903±0.003	0.004±0.000	0.004
	5000	229795	0.900±0.001	0.004±0.000	0.004	0.900±0.001	0.004±0.000	0.004
	10000	374065	0.900± 0.001	0.005±0.000	0.005	0.900±0.001	0.005±0.000	0.005

Table 4. n^*, recall (i.e. alien detection rate) and false positive rate from experiments using 9-dimensional normal data, 98%, bootstrap LODA

			Basic CDF			Iso CDF		
			Recall	False Positive Rate		Recall	False Positive Rate	
α	n	n^*	Recall±CI	FPR±CI	Oracle	Recall±CI	FPR±CI	Oracle
0.01	100	188760	0.719±0.048	0.095±0.039	0.135	0.972±0.017	0.569±0.073	0.135
	500	1065490	0.872±0.022	0.083±0.038	0.048	0.974±0.013	0.491±0.079	0.048
	1000	1891769	0.899±0.016	0.060±0.031	0.041	0.980±0.009	0.511±0.078	0.041
	5000	5874989	0.942±0.010	0.067±0.030	0.034	0.988±0.005	0.447±0.078	0.034
	10000	8907859	0.954±0.008	0.069±0.027	0.033	0.990±0.005	0.444±0.075	0.033
0.05	100	17905	0.842±0.031	0.165±0.051	0.132	0.942±0.024	0.498±0.077	0.132
	500	177557	0.940±0.011	0.118±0.043	0.049	0.983±0.007	0.430±0.073	0.049
	1000	340061	0.952±0.008	0.090±0.035	0.041	0.980±0.007	0.462±0.081	0.041
	5000	2051058	0.971±0.004	0.089±0.034	0.034	0.988±0.004	0.384±0.076	0.034
	10000	2362910	0.975±0.004	0.079±0.027	0.034	0.989±0.003	0.360±0.070	0.034
0.10	100	13692	0.933±0.017	0.213±0.046	0.142	0.977±0.011	0.537±0.070	0.142
	500	79982	0.955±0.008	0.097±0.037	0.049	0.984±0.006	0.456±0.077	0.049
	1000	191346	0.967±0.005	0.070±0.023	0.041	0.985±0.005	0.402±0.076	0.041
	5000	1069912	0.977±0.003	0.072±0.028	0.034	0.989±0.003	0.351±0.070	0.034
	10000	2042503	0.980±0.003	0.087±0.030	0.034	0.990±0.003	0.342±0.070	0.034
0.20	100	7818	0.949±0.013	0.257±0.057	0.131	0.970±0.010	0.481±0.076	0.131
	500	54275	0.970±0.005	0.125±0.039	0.048	0.987±0.004	0.451±0.076	0.048
	1000	121904	0.977±0.004	0.102±0.031	0.040	0.992±0.003	0.462±0.075	0.040
	5000	612305	0.980±0.002	0.059±0.015	0.034	0.986±0.003	0.217±0.058	0.034
	10000	922499	0.980±0.002	0.073±0.030	0.034	0.986±0.002	0.215±0.057	0.034
0.50	100	4604	0.973±0.006	0.223±0.042	0.135	0.983±0.005	0.422±0.067	0.135
	500	25350	0.980±0.003	0.093±0.024	0.049	0.986±0.003	0.258±0.061	0.049
	1000	101036	0.981±0.002	0.065±0.014	0.041	0.986±0.002	0.177±0.047	0.041
	5000	431535	0.980±0.001	0.037±0.002	0.034	0.981±0.001	0.047±0.013	0.034
	10000	615923	0.980±0.001	0.034±0.002	0.034	0.980±0.001	0.038±0.006	0.034

Table 5. n^*, recall (i.e. alien detection rate) and false positive rate from experiments using 9-dimensional normal data, 95%, bootstrap LODA

			Basic CDF			Iso CDF		
			Recall	False Positive Rate		Recall	False Positive Rate	
α	n	n^*	Recall±CI	FPR±CI	Oracle	Recall±CI	FPR±CI	Oracle
0.01	100	206671	0.719±0.048	0.095±0.039	0.077	0.972±0.017	0.566±0.073	0.077
	500	1330996	0.872±0.022	0.083±0.038	0.020	0.974±0.013	0.487±0.078	0.020
	1000	2559525	0.899±0.016	0.060±0.031	0.015	0.978±0.010	0.505±0.079	0.015
	5000	7369343	0.933±0.010	0.052±0.023	0.011	0.985±0.006	0.442±0.078	0.011
	10000	8307313	0.943±0.009	0.059±0.025	0.010	0.987±0.006	0.413±0.074	0.010
0.05	100	20685	0.841±0.031	0.164±0.050	0.076	0.939±0.025	0.487±0.075	0.076
	500	175626	0.921±0.013	0.092±0.038	0.020	0.978±0.009	0.392±0.070	0.020
	1000	463720	0.940±0.009	0.057±0.026	0.015	0.973±0.009	0.410±0.079	0.015
	5000	3619299	0.952±0.005	0.038±0.022	0.011	0.978±0.005	0.308±0.072	0.011
	10000	2934537	0.956±0.004	0.024±0.007	0.010	0.976±0.005	0.246±0.063	0.010
0.10	100	17884	0.929±0.017	0.205±0.046	0.083	0.976±0.011	0.530±0.070	0.083
	500	85131	0.940±0.009	0.083±0.036	0.020	0.976±0.008	0.376±0.074	0.020
	1000	142860	0.943±0.007	0.039±0.014	0.015	0.973±0.008	0.304±0.072	0.015
	5000	1578820	0.955±0.004	0.029±0.018	0.011	0.971±0.005	0.175±0.057	0.011
	10000	2255301	0.957±0.003	0.022±0.009	0.010	0.967±0.005	0.146±0.053	0.010
0.20	100	11831	0.940±0.013	0.204±0.049	0.075	0.964±0.012	0.441±0.073	0.075
	500	65192	0.955±0.007	0.077±0.029	0.020	0.979±0.006	0.352±0.070	0.020
	1000	174441	0.956±0.005	0.041±0.018	0.015	0.975±0.006	0.271±0.066	0.015
	5000	802440	0.952±0.002	0.013±0.002	0.011	0.956±0.003	0.041±0.025	0.011
	10000	2068150	0.952±0.001	0.011±0.001	0.010	0.954±0.002	0.031±0.023	0.010
0.50	100	5099	0.954±0.007	0.123±0.022	0.078	0.971±0.007	0.325±0.061	0.078
	500	30120	0.953±0.003	0.025±0.003	0.020	0.956±0.004	0.049±0.022	0.020
	1000	80278	0.952±0.002	0.017±0.001	0.015	0.952±0.002	0.017±0.001	0.015
	5000	465368	0.951±0.001	0.011±0.000	0.011	0.951±0.001	0.011±0.000	0.011
	10000	686935	0.950±0.001	0.011±0.000	0.010	0.950±0.001	0.011±0.000	0.010

Table 6. n^*, recall (i.e. alien detection rate) and false positive rate from experiments using 9-dimensional normal data, 90%, bootstrap LODA

			Basic CDF			Iso CDF		
			Recall	False Positive Rate		Recall	False Positive Rate	
α	n	n^*	Recall±CI	FPR±CI	Oracle	Recall±CI	FPR±CI	Oracle
0.01	100	242739	0.719±0.048	0.095±0.039	0.045	0.972±0.017	0.564±0.073	0.045
	500	2059638	0.872±0.022	0.082±0.038	0.008	0.969±0.015	0.484±0.079	0.008
	1000	3398545	0.863±0.017	0.033±0.020	0.006	0.973±0.012	0.487±0.079	0.006
	5000	9739214	0.900±0.013	0.032±0.019	0.003	0.981±0.007	0.411±0.076	0.003
	10000	11575949	0.911±0.012	0.030±0.016	0.003	0.980±0.009	0.359±0.072	0.003
0.05	100	27002	0.841±0.031	0.157±0.048	0.044	0.936±0.026	0.460±0.074	0.044
	500	255234	0.892±0.014	0.058±0.033	0.008	0.964±0.013	0.359±0.070	0.008
	1000	426176	0.900±0.011	0.018±0.009	0.006	0.957±0.012	0.365±0.077	0.006
	5000	2440377	0.914±0.006	0.010±0.005	0.003	0.945±0.009	0.188±0.063	0.003
	10000	4972658	0.907±0.005	0.004±0.001	0.003	0.933±0.009	0.130±0.052	0.003
0.10	100	18177	0.898±0.020	0.152±0.040	0.049	0.969±0.013	0.487±0.070	0.049
	500	123537	0.910±0.011	0.049±0.027	0.008	0.954±0.012	0.303±0.069	0.008
	1000	140581	0.897±0.009	0.013±0.006	0.006	0.936±0.012	0.175±0.057	0.006
	5000	2329443	0.906±0.003	0.004±0.000	0.003	0.915±0.006	0.053±0.033	0.003
	10000	2968332	0.905±0.003	0.003±0.000	0.003	0.908±0.004	0.014±0.016	0.003
0.20	100	9199	0.915±0.016	0.149±0.043	0.043	0.953±0.014	0.393±0.071	0.043
	500	59467	0.914±0.008	0.021±0.014	0.008	0.942±0.010	0.189±0.059	0.008
	1000	178906	0.911±0.005	0.008±0.001	0.006	0.923±0.008	0.078±0.039	0.006
	5000	786472	0.901±0.002	0.004±0.000	0.003	0.901±0.002	0.004±0.000	0.003
	10000	1349754	0.901±0.001	0.003±0.000	0.003	0.901±0.001	0.003±0.000	0.003
0.50	100	13581	0.921±0.008	0.067±0.010	0.045	0.934±0.009	0.148±0.042	0.045
	500	13945	0.902±0.004	0.009±0.001	0.008	0.902±0.004	0.009±0.001	0.008
	1000	96151	0.904±0.003	0.006±0.000	0.006	0.904±0.003	0.006±0.000	0.006
	5000	227331	0.900±0.001	0.003±0.000	0.003	0.900±0.001	0.003±0.000	0.003
	10000	537171	0.901±0.001	0.003±0.000	0.003	0.901±0.001	0.003±0.000	0.003

Table 7. 1st quartile, median, 3rd quartile of false positive rate from experiments using 9-dimensional normal data, 95%, Iforest

		Basic CDF False Positive Rate			
α	n	1st quartile	median	3rd quartile	Oracle(median)
0.01	100	0.004	0.006	0.014	0.051
	500	0.002	0.004	0.015	0.015
	1000	0.002	0.004	0.010	0.012
	5000	0.002	0.004	0.013	0.014
	10000	0.003	0.006	0.014	0.014
0.05	100	0.006	0.014	0.043	0.050
	500	0.004	0.008	0.023	0.015
	1000	0.004	0.008	0.015	0.012
	5000	0.006	0.010	0.020	0.014
	10000	0.008	0.011	0.019	0.014
0.1	100	0.015	0.032	0.094	0.049
	500	0.006	0.012	0.021	0.015
	1000	0.005	0.009	0.014	0.012
	5000	0.009	0.013	0.020	0.014
	10000	0.011	0.014	0.017	0.014
0.2	100	0.025	0.043	0.105	0.049
	500	0.010	0.018	0.031	0.015
	1000	0.008	0.011	0.018	0.012
	5000	0.010	0.013	0.015	0.014
	10000	0.012	0.013	0.015	0.014
0.5	100	0.040	0.058	0.090	0.051
	500	0.012	0.016	0.021	0.015
	1000	0.011	0.012	0.016	0.012
	5000	0.013	0.014	0.016	0.014
	10000	0.013	0.014	0.015	0.014

Table 8. Recall (i.e. alien detection rate) & False Positive Rate for Image Datasets,98%

			Basic CDF		Iso CDF	
			Recall	False Positive Rate	Recall	False Positive Rate
Dataset	α	$\hat{\alpha}$	recall±CI	FPR±CI	recall±CI	FPR±CI
Tiny Image Net	0.100	0.100	0.926 ± 0.014	0.677 ± 0.030	0.944 ± 0.013	0.746 ± 0.034
n=10000	0.100	0.104	0.933 ± 0.013	0.695 ± 0.030	0.952 ± 0.012	0.766 ± 0.033
	0.100	0.108	0.941 ± 0.012	0.715 ± 0.029	0.959 ± 0.011	0.786 ± 0.031
	0.200	0.200	0.965 ± 0.005	0.738 ± 0.018	0.972 ± 0.005	0.774 ± 0.021
	0.200	0.204	0.970 ± 0.004	0.761 ± 0.018	0.977 ± 0.004	0.798 ± 0.019
	0.200	0.208	0.977 ± 0.004	0.787 ± 0.017	0.983 ± 0.003	0.825 ± 0.018
	0.400	0.400	0.976 ± 0.003	0.766 ± 0.011	0.978 ± 0.003	0.776 ± 0.012
	0.400	0.404	0.982 ± 0.002	0.793 ± 0.011	0.983 ± 0.002	0.802 ± 0.011
	0.400	0.408	0.987 ± 0.002	0.822 ± 0.010	0.988 ± 0.002	0.833 ± 0.010
MNIST	0.100	0.100	0.981 ± 0.006	0.466 ± 0.041	0.987 ± 0.006	0.569 ± 0.061
n=11154	0.100	0.104	0.987 ± 0.005	0.518 ± 0.044	0.991 ± 0.005	0.628 ± 0.061
	0.100	0.108	0.991 ± 0.004	0.573 ± 0.049	0.994 ± 0.003	0.691 ± 0.060
	0.200	0.200	0.983 ± 0.004	0.444 ± 0.030	0.986 ± 0.004	0.483 ± 0.041
	0.200	0.204	0.990 ± 0.003	0.511 ± 0.037	0.992 ± 0.003	0.567 ± 0.045
	0.200	0.208	0.997 ± 0.001	0.610 ± 0.038	0.998 ± 0.001	0.684 ± 0.040
	0.400	0.400	0.983 ± 0.003	0.416 ± 0.014	0.983 ± 0.003	0.421 ± 0.015
	0.400	0.404	0.993 ± 0.002	0.504 ± 0.024	0.993 ± 0.002	0.519 ± 0.028
	0.400	0.408	0.999 ± 0.001	0.655 ± 0.030	0.999 ± 0.001	0.683 ± 0.032

Table 9. Recall (i.e. alien detection rate) & False Positive Rate for Image Datasets,95%

			Basic CDF		Iso CDF	
			Recall	False Positive Rate	Recall	False Positive Rate
Dataset	α	$\hat{\alpha}$	recall±CI	FPR±CI	recall±CI	FPR±CI
Tiny Image Net	0.100	0.100	0.902 ± 0.014	0.620 ± 0.025	0.924 ± 0.014	0.686 ± 0.032
n=10000	0.100	0.104	0.912 ± 0.014	0.639 ± 0.026	0.930 ± 0.014	0.697 ± 0.031
	0.100	0.108	0.923 ± 0.013	0.660 ± 0.026	0.939 ± 0.012	0.716 ± 0.031
	0.200	0.200	0.942 ± 0.006	0.667 ± 0.016	0.948 ± 0.006	0.682 ± 0.016
	0.200	0.204	0.949 ± 0.005	0.683 ± 0.014	0.954 ± 0.005	0.700 ± 0.015
	0.200	0.208	0.957 ± 0.005	0.706 ± 0.014	0.962 ± 0.005	0.722 ± 0.015
	0.400	0.400	0.948 ± 0.003	0.669 ± 0.007	0.949 ± 0.003	0.672 ± 0.007
	0.400	0.404	0.956 ± 0.003	0.689 ± 0.007	0.957 ± 0.003	0.692 ± 0.007
	0.400	0.408	0.964 ± 0.002	0.714 ± 0.007	0.965 ± 0.002	0.718 ± 0.007
MNIST	0.100	0.100	0.971 ± 0.007	0.404 ± 0.032	0.975 ± 0.007	0.448 ± 0.042
n=11154	0.100	0.104	0.977 ± 0.006	0.432 ± 0.033	0.982 ± 0.006	0.488 ± 0.045
	0.100	0.108	0.984 ± 0.005	0.477 ± 0.036	0.988 ± 0.005	0.542 ± 0.048
	0.200	0.200	0.966 ± 0.005	0.361 ± 0.017	0.967 ± 0.005	0.368 ± 0.018
	0.200	0.204	0.976 ± 0.004	0.397 ± 0.018	0.977 ± 0.004	0.410 ± 0.022
	0.200	0.208	0.986 ± 0.003	0.455 ± 0.023	0.988 ± 0.003	0.477 ± 0.028
	0.400	0.400	0.957 ± 0.003	0.334 ± 0.005	0.957 ± 0.003	0.334 ± 0.005
	0.400	0.404	0.972 ± 0.003	0.373 ± 0.007	0.973 ± 0.003	0.375 ± 0.007
	0.400	0.408	0.987 ± 0.002	0.441 ± 0.012	0.988 ± 0.002	0.444 ± 0.012

Table 10. Recall (i.e. alien detection rate) & False Positive Rate for Image Datasets,90%

			Basic CDF		Iso CDF	
			Recall	False Positive Rate	Recall	False Positive Rate
Dataset	α	$\hat{\alpha}$	recall±CI	FPR±CI	recall±CI	FPR±CI
Tiny Image Net	0.100	0.100	0.862 ± 0.015	0.545 ± 0.021	0.883 ± 0.016	0.590 ± 0.027
n=10000	0.100	0.104	0.873 ± 0.015	0.562 ± 0.021	0.892 ± 0.015	0.602 ± 0.026
	0.100	0.108	0.885 ± 0.014	0.579 ± 0.021	0.902 ± 0.014	0.617 ± 0.025
	0.200	0.200	0.894 ± 0.007	0.578 ± 0.011	0.898 ± 0.007	0.584 ± 0.011
	0.200	0.204	0.904 ± 0.007	0.593 ± 0.010	0.909 ± 0.006	0.600 ± 0.011
	0.200	0.208	0.915 ± 0.006	0.609 ± 0.010	0.919 ± 0.006	0.617 ± 0.011
	0.400	0.400	0.898 ± 0.003	0.577 ± 0.004	0.899 ± 0.003	0.578 ± 0.004
	0.400	0.404	0.907 ± 0.003	0.590 ± 0.004	0.908 ± 0.003	0.591 ± 0.004
	0.400	0.408	0.919 ± 0.003	0.608 ± 0.004	0.920 ± 0.003	0.609 ± 0.004
MNIST	0.100	0.100	0.949 ± 0.008	0.328 ± 0.020	0.954 ± 0.008	0.342 ± 0.024
n=11154	0.100	0.104	0.958 ± 0.007	0.352 ± 0.022	0.962 ± 0.007	0.366 ± 0.025
	0.100	0.108	0.967 ± 0.007	0.378 ± 0.024	0.971 ± 0.007	0.395 ± 0.027
	0.200	0.200	0.928 ± 0.005	0.282 ± 0.006	0.929 ± 0.005	0.285 ± 0.007
	0.200	0.204	0.942 ± 0.004	0.306 ± 0.007	0.944 ± 0.004	0.309 ± 0.008
	0.200	0.208	0.958 ± 0.004	0.341 ± 0.010	0.960 ± 0.004	0.345 ± 0.011
	0.400	0.400	0.912 ± 0.003	0.260 ± 0.003	0.912 ± 0.003	0.260 ± 0.003
	0.400	0.404	0.929 ± 0.003	0.284 ± 0.003	0.930 ± 0.003	0.284 ± 0.003
	0.400	0.408	0.949 ± 0.003	0.317 ± 0.004	0.949 ± 0.003	0.317 ± 0.004

Table 11. Recall & False Positive Rate for Landsat Dataset using LODA for varying q (target recall $1 - q$)

				Basic CDF		Iso CDF	
				Recall	False Positive Rate	Recall	False Positive Rate
Dataset	α	$\hat{\alpha}$	q	recall±CI	FPR±CI	recall±CI	FPR±CI
Landsat	0.100	0.100	0.020	0.937 ± 0.024	0.162 ± 0.047	0.960 ± 0.024	0.495 ± 0.068
n=1532	0.100	0.104	0.020	0.949 ± 0.024	0.203 ± 0.048	0.967 ± 0.024	0.543 ± 0.064
	0.100	0.108	0.020	0.960 ± 0.024	0.255 ± 0.050	0.972 ± 0.024	0.583 ± 0.062
	0.200	0.200	0.020	0.965 ± 0.005	0.128 ± 0.033	0.983 ± 0.005	0.404 ± 0.062
	0.200	0.204	0.020	0.980 ± 0.003	0.204 ± 0.040	0.991 ± 0.003	0.478 ± 0.061
	0.200	0.208	0.020	0.989 ± 0.002	0.301 ± 0.047	0.996 ± 0.001	0.557 ± 0.057
	0.400	0.400	0.020	0.971 ± 0.013	0.114 ± 0.021	0.981 ± 0.013	0.323 ± 0.055
	0.400	0.404	0.020	0.985 ± 0.012	0.267 ± 0.033	0.989 ± 0.012	0.491 ± 0.051
	0.400	0.408	0.020	0.991 ± 0.012	0.480 ± 0.039	0.993 ± 0.012	0.658 ± 0.041
	0.100	0.100	0.050	0.924 ± 0.024	0.127 ± 0.041	0.952 ± 0.025	0.430 ± 0.067
	0.100	0.104	0.050	0.936 ± 0.024	0.157 ± 0.044	0.959 ± 0.024	0.463 ± 0.065
	0.100	0.108	0.050	0.950 ± 0.024	0.202 ± 0.047	0.966 ± 0.024	0.506 ± 0.064
	0.200	0.200	0.050	0.942 ± 0.006	0.069 ± 0.020	0.964 ± 0.006	0.271 ± 0.057
	0.200	0.204	0.050	0.964 ± 0.004	0.112 ± 0.027	0.980 ± 0.004	0.337 ± 0.056
	0.200	0.208	0.050	0.981 ± 0.003	0.201 ± 0.039	0.991 ± 0.002	0.425 ± 0.055
	0.400	0.400	0.050	0.948 ± 0.013	0.046 ± 0.008	0.952 ± 0.013	0.094 ± 0.028
	0.400	0.404	0.050	0.969 ± 0.012	0.095 ± 0.015	0.976 ± 0.012	0.209 ± 0.038
	0.400	0.408	0.050	0.986 ± 0.012	0.250 ± 0.029	0.989 ± 0.012	0.385 ± 0.041
	0.100	0.100	0.100	0.888 ± 0.025	0.089 ± 0.036	0.924 ± 0.025	0.323 ± 0.064
	0.100	0.104	0.100	0.906 ± 0.024	0.106 ± 0.038	0.938 ± 0.025	0.345 ± 0.064
	0.100	0.108	0.100	0.927 ± 0.024	0.136 ± 0.041	0.953 ± 0.025	0.380 ± 0.063
	0.200	0.200	0.100	0.902 ± 0.007	0.034 ± 0.008	0.918 ± 0.009	0.115 ± 0.037
	0.200	0.204	0.100	0.928 ± 0.005	0.047 ± 0.012	0.941 ± 0.007	0.151 ± 0.040
	0.200	0.208	0.100	0.953 ± 0.005	0.076 ± 0.018	0.966 ± 0.005	0.216 ± 0.044
	0.400	0.400	0.100	0.899 ± 0.012	0.029 ± 0.008	0.899 ± 0.012	0.030 ± 0.008
	0.400	0.404	0.100	0.927 ± 0.012	0.035 ± 0.008	0.927 ± 0.012	0.036 ± 0.008
	0.400	0.408	0.100	0.957 ± 0.012	0.055 ± 0.008	0.960 ± 0.012	0.076 ± 0.015

Table 12. Recall & False Positive Rate for page.blocks Dataset using LODA for varying q (target recall $1 - q$)

				Basic CDF		Iso CDF	
				Recall	False Positive Rate	Recall	False Positive Rate
Dataset	α	$\hat{\alpha}$	q	recall±CI	FPR±CI	recall±CI	FPR±CI
pageblocks	0.100	0.100	0.020	0.963 ± 0.021	0.254 ± 0.084	0.983 ± 0.013	0.555 ± 0.201
n=4912	0.100	0.104	0.020	0.969 ± 0.017	0.315 ± 0.138	0.991 ± 0.006	0.624 ± 0.181
	0.100	0.108	0.020	0.976 ± 0.013	0.357 ± 0.137	0.995 ± 0.004	0.712 ± 0.159
	0.200	0.200	0.020	0.966 ± 0.005	0.287 ± 0.031	0.978 ± 0.005	0.452 ± 0.053
	0.200	0.204	0.020	0.978 ± 0.004	0.367 ± 0.038	0.987 ± 0.003	0.529 ± 0.050
	0.200	0.208	0.020	0.989 ± 0.003	0.468 ± 0.041	0.994 ± 0.002	0.626 ± 0.045
	0.400	0.400	0.020	0.971 ± 0.004	0.261 ± 0.028	0.980 ± 0.004	0.411 ± 0.048
	0.400	0.404	0.020	0.986 ± 0.002	0.384 ± 0.035	0.991 ± 0.002	0.532 ± 0.047
	0.400	0.408	0.020	0.994 ± 0.001	0.531 ± 0.038	0.996 ± 0.001	0.655 ± 0.043
	0.100	0.100	0.050	0.945 ± 0.031	0.218 ± 0.070	0.964 ± 0.029	0.419 ± 0.210
	0.100	0.104	0.050	0.958 ± 0.024	0.259 ± 0.100	0.975 ± 0.018	0.458 ± 0.201
	0.100	0.108	0.050	0.967 ± 0.018	0.304 ± 0.117	0.985 ± 0.012	0.551 ± 0.185
	0.200	0.200	0.050	0.945 ± 0.007	0.204 ± 0.019	0.955 ± 0.007	0.291 ± 0.040
	0.200	0.204	0.050	0.963 ± 0.005	0.258 ± 0.025	0.972 ± 0.005	0.362 ± 0.042
	0.200	0.208	0.050	0.978 ± 0.004	0.338 ± 0.031	0.985 ± 0.004	0.448 ± 0.043
	0.400	0.400	0.050	0.945 ± 0.004	0.173 ± 0.012	0.950 ± 0.005	0.217 ± 0.029
	0.400	0.404	0.050	0.966 ± 0.003	0.228 ± 0.020	0.972 ± 0.004	0.303 ± 0.034
	0.400	0.408	0.050	0.985 ± 0.002	0.339 ± 0.027	0.989 ± 0.002	0.423 ± 0.036
	0.100	0.100	0.100	0.908 ± 0.027	0.153 ± 0.030	0.939 ± 0.027	0.245 ± 0.105
	0.100	0.104	0.100	0.928 ± 0.021	0.187 ± 0.049	0.943 ± 0.024	0.253 ± 0.102
	0.100	0.108	0.100	0.947 ± 0.022	0.222 ± 0.071	0.959 ± 0.023	0.305 ± 0.119
	0.200	0.200	0.100	0.899 ± 0.007	0.139 ± 0.007	0.905 ± 0.008	0.162 ± 0.017
	0.200	0.204	0.100	0.922 ± 0.007	0.161 ± 0.010	0.929 ± 0.007	0.190 ± 0.020
	0.200	0.208	0.100	0.946 ± 0.006	0.201 ± 0.016	0.954 ± 0.006	0.243 ± 0.026
	0.400	0.400	0.100	0.901 ± 0.005	0.125 ± 0.004	0.903 ± 0.005	0.127 ± 0.005
	0.400	0.404	0.100	0.922 ± 0.004	0.143 ± 0.005	0.924 ± 0.004	0.148 ± 0.008
	0.400	0.408	0.100	0.948 ± 0.004	0.174 ± 0.008	0.951 ± 0.004	0.190 ± 0.013

Table 13. Recall & False Positive Rate for Optical.digits Dataset using LODA for varying q (target recall $1 - q$)

				Basic CDF		Iso CDF	
				Recall	False Positive Rate	Recall	False Positive Rate
Dataset	α	$\hat{\alpha}$	q	recall$\pm$CI	FPR$\pm$CI	recall$\pm$CI	FPR$\pm$CI
Optical.digits	0.100	0.100	0.020	0.898 ± 0.016	0.167 ± 0.035	0.947 ± 0.016	0.502 ± 0.070
n=568	0.100	0.104	0.020	0.906 ± 0.013	0.186 ± 0.036	0.950 ± 0.013	0.519 ± 0.066
	0.100	0.108	0.020	0.917 ± 0.013	0.214 ± 0.036	0.957 ± 0.012	0.549 ± 0.065
	0.200	0.200	0.020	0.938 ± 0.011	0.177 ± 0.033	0.964 ± 0.010	0.434 ± 0.065
	0.200	0.204	0.020	0.953 ± 0.008	0.220 ± 0.039	0.973 ± 0.008	0.466 ± 0.063
	0.200	0.208	0.020	0.968 ± 0.007	0.270 ± 0.041	0.983 ± 0.006	0.511 ± 0.061
	0.400	0.400	0.020	0.966 ± 0.006	0.254 ± 0.041	0.978 ± 0.006	0.441 ± 0.061
	0.400	0.404	0.020	0.979 ± 0.004	0.339 ± 0.045	0.986 ± 0.004	0.517 ± 0.058
	0.400	0.408	0.020	0.989 ± 0.003	0.439 ± 0.048	0.994 ± 0.002	0.606 ± 0.053
	0.100	0.100	0.050	0.887 ± 0.016	0.146 ± 0.033	0.948 ± 0.015	0.459 ± 0.068
	0.100	0.104	0.050	0.892 ± 0.014	0.166 ± 0.033	0.944 ± 0.014	0.481 ± 0.066
	0.100	0.108	0.050	0.906 ± 0.013	0.188 ± 0.034	0.952 ± 0.013	0.504 ± 0.065
	0.200	0.200	0.050	0.924 ± 0.011	0.135 ± 0.025	0.954 ± 0.010	0.342 ± 0.059
	0.200	0.204	0.050	0.936 ± 0.009	0.165 ± 0.029	0.963 ± 0.009	0.381 ± 0.059
	0.200	0.208	0.050	0.955 ± 0.008	0.212 ± 0.034	0.974 ± 0.007	0.432 ± 0.060
	0.400	0.400	0.050	0.946 ± 0.006	0.149 ± 0.024	0.959 ± 0.007	0.290 ± 0.049
	0.400	0.404	0.050	0.964 ± 0.005	0.219 ± 0.031	0.974 ± 0.006	0.356 ± 0.049
	0.400	0.408	0.050	0.980 ± 0.004	0.319 ± 0.040	0.986 ± 0.004	0.443 ± 0.049
	0.100	0.100	0.100	0.840 ± 0.021	0.119 ± 0.029	0.910 ± 0.021	0.403 ± 0.067
	0.100	0.104	0.100	0.866 ± 0.015	0.132 ± 0.031	0.928 ± 0.016	0.413 ± 0.065
	0.100	0.108	0.100	0.879 ± 0.014	0.151 ± 0.032	0.937 ± 0.015	0.430 ± 0.065
	0.200	0.200	0.100	0.883 ± 0.013	0.080 ± 0.012	0.916 ± 0.015	0.237 ± 0.050
	0.200	0.204	0.100	0.905 ± 0.010	0.104 ± 0.018	0.936 ± 0.011	0.264 ± 0.050
	0.200	0.208	0.100	0.926 ± 0.010	0.138 ± 0.024	0.953 ± 0.010	0.300 ± 0.050
	0.400	0.400	0.100	0.904 ± 0.007	0.072 ± 0.006	0.916 ± 0.009	0.129 ± 0.026
	0.400	0.404	0.100	0.925 ± 0.006	0.096 ± 0.009	0.936 ± 0.008	0.168 ± 0.031
	0.400	0.408	0.100	0.951 ± 0.006	0.150 ± 0.019	0.960 ± 0.006	0.233 ± 0.036

Table 14. Recall & False Positive Rate for Letter Recognition Dataset using LODA for varying q (target recall $1 - q$)

				Basic CDF		Iso CDF	
				Recall	False Positive Rate	Recall	False Positive Rate
Dataset	α	$\hat{\alpha}$	q	recall±CI	FPR±CI	recall±CI	FPR±CI
Letter recognition n=788	0.100	0.100	0.020	0.897 ± 0.018	0.232 ± 0.044	0.953 ± 0.016	0.596 ± 0.069
	0.100	0.104	0.020	0.918 ± 0.013	0.255 ± 0.045	0.967 ± 0.010	0.613 ± 0.067
	0.100	0.108	0.020	0.931 ± 0.012	0.291 ± 0.047	0.975 ± 0.008	0.633 ± 0.065
	0.200	0.200	0.020	0.940 ± 0.011	0.197 ± 0.032	0.964 ± 0.011	0.457 ± 0.066
	0.200	0.204	0.020	0.954 ± 0.008	0.235 ± 0.035	0.974 ± 0.007	0.490 ± 0.063
	0.200	0.208	0.020	0.969 ± 0.006	0.281 ± 0.039	0.983 ± 0.006	0.537 ± 0.061
	0.400	0.400	0.020	0.968 ± 0.006	0.242 ± 0.029	0.977 ± 0.006	0.430 ± 0.056
	0.400	0.404	0.020	0.983 ± 0.004	0.335 ± 0.038	0.989 ± 0.003	0.525 ± 0.055
	0.400	0.408	0.020	0.993 ± 0.003	0.448 ± 0.044	0.996 ± 0.002	0.639 ± 0.049
	0.100	0.100	0.050	0.885 ± 0.020	0.205 ± 0.042	0.949 ± 0.015	0.550 ± 0.069
	0.100	0.104	0.050	0.904 ± 0.015	0.223 ± 0.041	0.958 ± 0.012	0.570 ± 0.066
	0.100	0.108	0.050	0.919 ± 0.013	0.252 ± 0.043	0.965 ± 0.010	0.587 ± 0.065
	0.200	0.200	0.050	0.912 ± 0.013	0.156 ± 0.024	0.944 ± 0.013	0.375 ± 0.060
	0.200	0.204	0.050	0.934 ± 0.010	0.188 ± 0.027	0.960 ± 0.009	0.407 ± 0.059
	0.200	0.208	0.050	0.954 ± 0.008	0.229 ± 0.034	0.973 ± 0.008	0.455 ± 0.059
	0.400	0.400	0.050	0.946 ± 0.006	0.147 ± 0.012	0.956 ± 0.007	0.245 ± 0.039
	0.400	0.404	0.050	0.967 ± 0.005	0.208 ± 0.020	0.974 ± 0.005	0.334 ± 0.043
	0.400	0.408	0.050	0.984 ± 0.004	0.306 ± 0.032	0.988 ± 0.004	0.432 ± 0.046
	0.100	0.100	0.100	0.857 ± 0.020	0.152 ± 0.031	0.929 ± 0.018	0.473 ± 0.067
	0.100	0.104	0.100	0.875 ± 0.017	0.172 ± 0.033	0.939 ± 0.016	0.490 ± 0.066
	0.100	0.108	0.100	0.892 ± 0.016	0.197 ± 0.036	0.949 ± 0.014	0.519 ± 0.066
	0.200	0.200	0.100	0.875 ± 0.014	0.111 ± 0.016	0.905 ± 0.015	0.236 ± 0.045
	0.200	0.204	0.100	0.900 ± 0.011	0.132 ± 0.018	0.928 ± 0.012	0.280 ± 0.048
	0.200	0.208	0.100	0.923 ± 0.010	0.158 ± 0.022	0.950 ± 0.010	0.326 ± 0.051
	0.400	0.400	0.100	0.901 ± 0.007	0.099 ± 0.004	0.906 ± 0.008	0.110 ± 0.008
	0.400	0.404	0.100	0.925 ± 0.006	0.117 ± 0.005	0.932 ± 0.006	0.145 ± 0.015
	0.400	0.408	0.100	0.953 ± 0.005	0.155 ± 0.010	0.959 ± 0.006	0.203 ± 0.023

Table 15. Recall & False Positive Rate for Shuttle Dataset using LODA for varying q (target recall $1 - q$)

				Basic CDF		Iso CDF	
				Recall	False Positive Rate	Recall	False Positive Rate
Dataset	α	$\hat{\alpha}$	q	recall±CI	FPR±CI	recall±CI	FPR±CI
Shuttle	0.100	0.100	0.020	0.959 ± 0.008	0.145 ± 0.031	0.973 ± 0.007	0.425 ± 0.065
n=5000	0.100	0.104	0.020	0.971 ± 0.006	0.205 ± 0.038	0.984 ± 0.006	0.490 ± 0.065
	0.100	0.108	0.020	0.984 ± 0.005	0.287 ± 0.048	0.991 ± 0.003	0.550 ± 0.064
	0.200	0.200	0.020	0.975 ± 0.004	0.100 ± 0.016	0.982 ± 0.004	0.317 ± 0.058
	0.200	0.204	0.020	0.990 ± 0.002	0.195 ± 0.033	0.994 ± 0.002	0.451 ± 0.058
	0.200	0.208	0.020	0.998 ± 0.001	0.355 ± 0.042	0.999 ± 0.001	0.578 ± 0.052
	0.400	0.400	0.020	0.980 ± 0.002	0.090 ± 0.014	0.982 ± 0.002	0.154 ± 0.031
	0.400	0.404	0.020	0.996 ± 0.001	0.238 ± 0.028	0.997 ± 0.001	0.396 ± 0.042
	0.400	0.408	0.020	1.000 ± 0.000	0.540 ± 0.032	1.000 ± 0.000	0.642 ± 0.034
	0.100	0.100	0.050	0.937 ± 0.009	0.095 ± 0.017	0.957 ± 0.009	0.326 ± 0.059
	0.100	0.104	0.050	0.958 ± 0.007	0.137 ± 0.027	0.972 ± 0.007	0.370 ± 0.059
	0.100	0.108	0.050	0.974 ± 0.006	0.200 ± 0.036	0.983 ± 0.005	0.435 ± 0.059
	0.200	0.200	0.050	0.949 ± 0.005	0.064 ± 0.004	0.956 ± 0.006	0.142 ± 0.034
	0.200	0.204	0.050	0.973 ± 0.004	0.093 ± 0.011	0.979 ± 0.004	0.224 ± 0.043
	0.200	0.208	0.050	0.992 ± 0.002	0.186 ± 0.028	0.995 ± 0.002	0.365 ± 0.045
	0.400	0.400	0.050	0.949 ± 0.002	0.061 ± 0.001	0.949 ± 0.002	0.061 ± 0.001
	0.400	0.404	0.050	0.976 ± 0.002	0.082 ± 0.006	0.977 ± 0.002	0.104 ± 0.016
	0.400	0.408	0.050	0.997 ± 0.001	0.220 ± 0.022	0.998 ± 0.001	0.290 ± 0.028
	0.100	0.100	0.100	0.901 ± 0.012	0.056 ± 0.006	0.917 ± 0.013	0.187 ± 0.047
	0.100	0.104	0.100	0.923 ± 0.010	0.072 ± 0.010	0.939 ± 0.011	0.216 ± 0.047
	0.100	0.108	0.100	0.947 ± 0.008	0.105 ± 0.019	0.960 ± 0.009	0.266 ± 0.049
	0.200	0.200	0.100	0.903 ± 0.004	0.047 ± 0.001	0.905 ± 0.004	0.048 ± 0.002
	0.200	0.204	0.100	0.928 ± 0.004	0.054 ± 0.002	0.931 ± 0.005	0.064 ± 0.008
	0.200	0.208	0.100	0.958 ± 0.004	0.068 ± 0.004	0.963 ± 0.004	0.111 ± 0.020
	0.400	0.400	0.100	0.899 ± 0.002	0.047 ± 0.001	0.899 ± 0.002	0.047 ± 0.001
	0.400	0.404	0.100	0.925 ± 0.002	0.054 ± 0.001	0.925 ± 0.002	0.054 ± 0.001
	0.400	0.408	0.100	0.959 ± 0.002	0.065 ± 0.001	0.959 ± 0.002	0.066 ± 0.001

Table 16. Recall & False Positive Rate for Covertype Dataset using LODA for varying q (target recall $1 - q$)

				Basic CDF		Iso CDF	
				Recall	False Positive Rate	Recall	False Positive Rate
Dataset	α	$\hat{\alpha}$	q	recall±CI	FPR±CI	recall±CI	FPR±CI
Covertype	0.100	0.100	0.020	0.979 ± 0.002	0.010 ± 0.003	0.989 ± 0.002	0.373 ± 0.072
n=13624	0.100	0.104	0.020	0.995 ± 0.001	0.098 ± 0.025	0.998 ± 0.001	0.470 ± 0.066
	0.100	0.108	0.020	0.999 ± 0.000	0.292 ± 0.045	0.999 ± 0.000	0.586 ± 0.059
	0.200	0.200	0.020	0.980 ± 0.001	0.007 ± 0.002	0.987 ± 0.002	0.220 ± 0.056
	0.200	0.204	0.020	0.998 ± 0.000	0.142 ± 0.026	0.999 ± 0.000	0.419 ± 0.057
	0.200	0.208	0.020	1.000 ± 0.000	0.423 ± 0.044	1.000 ± 0.000	0.618 ± 0.047
	0.400	0.400	0.020	0.981 ± 0.001	0.009 ± 0.001	0.984 ± 0.002	0.134 ± 0.044
	0.400	0.404	0.020	0.998 ± 0.000	0.212 ± 0.029	0.999 ± 0.000	0.438 ± 0.050
	0.400	0.408	0.020	1.000 ± 0.000	0.560 ± 0.037	1.000 ± 0.000	0.676 ± 0.036
	0.100	0.100	0.050	0.951 ± 0.002	0.002 ± 0.000	0.963 ± 0.004	0.164 ± 0.051
	0.100	0.104	0.050	0.978 ± 0.001	0.012 ± 0.004	0.987 ± 0.002	0.277 ± 0.059
	0.100	0.108	0.050	0.997 ± 0.001	0.112 ± 0.026	0.998 ± 0.000	0.411 ± 0.060
	0.200	0.200	0.050	0.951 ± 0.001	0.003 ± 0.000	0.952 ± 0.002	0.017 ± 0.016
	0.200	0.204	0.050	0.979 ± 0.001	0.008 ± 0.002	0.983 ± 0.001	0.114 ± 0.035
	0.200	0.208	0.050	0.999 ± 0.000	0.153 ± 0.025	1.000 ± 0.000	0.319 ± 0.045
	0.400	0.400	0.050	0.952 ± 0.001	0.006 ± 0.000	0.952 ± 0.001	0.006 ± 0.000
	0.400	0.404	0.050	0.980 ± 0.001	0.012 ± 0.002	0.981 ± 0.001	0.050 ± 0.015
	0.400	0.408	0.050	0.999 ± 0.000	0.199 ± 0.023	1.000 ± 0.000	0.307 ± 0.034
	0.100	0.100	0.100	0.900 ± 0.003	0.002 ± 0.000	0.904 ± 0.004	0.025 ± 0.019
	0.100	0.104	0.100	0.930 ± 0.001	0.002 ± 0.000	0.937 ± 0.004	0.055 ± 0.029
	0.100	0.108	0.100	0.965 ± 0.001	0.004 ± 0.001	0.973 ± 0.003	0.121 ± 0.038
	0.200	0.200	0.100	0.901 ± 0.002	0.002 ± 0.000	0.901 ± 0.002	0.002 ± 0.000
	0.200	0.204	0.100	0.929 ± 0.001	0.002 ± 0.000	0.929 ± 0.001	0.002 ± 0.000
	0.200	0.208	0.100	0.965 ± 0.001	0.004 ± 0.000	0.965 ± 0.001	0.011 ± 0.004
	0.400	0.400	0.100	0.901 ± 0.002	0.005 ± 0.000	0.901 ± 0.002	0.005 ± 0.000
	0.400	0.404	0.100	0.929 ± 0.001	0.005 ± 0.000	0.929 ± 0.001	0.005 ± 0.000
	0.400	0.408	0.100	0.965 ± 0.001	0.007 ± 0.000	0.965 ± 0.001	0.008 ± 0.001

Table 17. Recall & False Positive Rate for Landsat Dataset using Iforest for varying q (target recall $1 - q$)

				Basic CDF		Iso CDF	
				Recall	False Positive Rate	Recall	False Positive Rate
Dataset	α	$\hat{\alpha}$	q	recall±CI	FPR±CI	recall±CI	FPR±CI
Landsat	0.100	0.100	0.020	0.941 ± 0.024	0.164 ± 0.045	0.964 ± 0.025	0.503 ± 0.066
n=1532	0.100	0.104	0.020	0.950 ± 0.024	0.197 ± 0.048	0.968 ± 0.024	0.545 ± 0.065
	0.100	0.108	0.020	0.960 ± 0.024	0.254 ± 0.051	0.971 ± 0.024	0.584 ± 0.063
	0.200	0.200	0.020	0.965 ± 0.005	0.130 ± 0.033	0.982 ± 0.004	0.402 ± 0.063
	0.200	0.204	0.020	0.979 ± 0.003	0.199 ± 0.040	0.991 ± 0.003	0.477 ± 0.060
	0.200	0.208	0.020	0.989 ± 0.002	0.304 ± 0.048	0.996 ± 0.002	0.556 ± 0.057
	0.400	0.400	0.020	0.970 ± 0.012	0.109 ± 0.018	0.979 ± 0.012	0.323 ± 0.054
	0.400	0.404	0.020	0.985 ± 0.012	0.266 ± 0.034	0.989 ± 0.012	0.488 ± 0.051
	0.400	0.408	0.020	0.991 ± 0.012	0.477 ± 0.039	0.993 ± 0.012	0.655 ± 0.042
	0.100	0.100	0.050	0.923 ± 0.024	0.130 ± 0.042	0.950 ± 0.025	0.423 ± 0.069
	0.100	0.104	0.050	0.936 ± 0.024	0.161 ± 0.045	0.959 ± 0.025	0.467 ± 0.066
	0.100	0.108	0.050	0.951 ± 0.024	0.204 ± 0.047	0.967 ± 0.024	0.509 ± 0.064
	0.200	0.200	0.050	0.945 ± 0.006	0.074 ± 0.022	0.965 ± 0.006	0.265 ± 0.056
	0.200	0.204	0.050	0.964 ± 0.004	0.117 ± 0.029	0.979 ± 0.004	0.332 ± 0.055
	0.200	0.208	0.050	0.980 ± 0.003	0.198 ± 0.037	0.991 ± 0.003	0.425 ± 0.054
	0.400	0.400	0.050	0.949 ± 0.012	0.044 ± 0.007	0.953 ± 0.012	0.095 ± 0.028
	0.400	0.404	0.050	0.969 ± 0.012	0.094 ± 0.015	0.976 ± 0.012	0.212 ± 0.038
	0.400	0.408	0.050	0.986 ± 0.012	0.253 ± 0.029	0.989 ± 0.012	0.386 ± 0.041
	0.100	0.100	0.100	0.887 ± 0.024	0.088 ± 0.036	0.919 ± 0.025	0.309 ± 0.063
	0.100	0.104	0.100	0.906 ± 0.024	0.107 ± 0.038	0.936 ± 0.025	0.346 ± 0.064
	0.100	0.108	0.100	0.926 ± 0.024	0.135 ± 0.041	0.953 ± 0.025	0.388 ± 0.063
	0.200	0.200	0.100	0.903 ± 0.007	0.032 ± 0.005	0.915 ± 0.009	0.110 ± 0.036
	0.200	0.204	0.100	0.927 ± 0.005	0.047 ± 0.012	0.942 ± 0.007	0.153 ± 0.040
	0.200	0.208	0.100	0.952 ± 0.005	0.075 ± 0.018	0.967 ± 0.005	0.216 ± 0.044
	0.400	0.400	0.100	0.901 ± 0.012	0.030 ± 0.008	0.901 ± 0.012	0.030 ± 0.008
	0.400	0.404	0.100	0.926 ± 0.012	0.034 ± 0.008	0.927 ± 0.012	0.037 ± 0.009
	0.400	0.408	0.100	0.957 ± 0.012	0.054 ± 0.008	0.960 ± 0.012	0.081 ± 0.016

Table 18. Recall & False Positive Rate for page.blocks Dataset using Iforest for varying q (target recall $1 - q$)

				Basic CDF		Iso CDF	
				Recall	False Positive Rate	Recall	False Positive Rate
Dataset	α	$\hat{\alpha}$	q	recall±CI	FPR±CI	recall±CI	FPR±CI
page.blocks n=4912	0.100	0.100	0.020	0.951 ± 0.029	0.269 ± 0.106	0.975 ± 0.017	0.511 ± 0.220
	0.100	0.104	0.020	0.968 ± 0.018	0.314 ± 0.130	0.991 ± 0.007	0.641 ± 0.184
	0.100	0.108	0.020	0.976 ± 0.013	0.366 ± 0.138	0.994 ± 0.005	0.692 ± 0.175
	0.200	0.200	0.020	0.965 ± 0.005	0.283 ± 0.030	0.976 ± 0.005	0.443 ± 0.052
	0.200	0.204	0.020	0.979 ± 0.004	0.366 ± 0.037	0.986 ± 0.004	0.527 ± 0.051
	0.200	0.208	0.020	0.989 ± 0.002	0.465 ± 0.041	0.994 ± 0.002	0.622 ± 0.046
	0.400	0.400	0.020	0.970 ± 0.004	0.260 ± 0.028	0.978 ± 0.004	0.403 ± 0.049
	0.400	0.404	0.020	0.985 ± 0.002	0.381 ± 0.035	0.990 ± 0.002	0.531 ± 0.048
	0.400	0.408	0.020	0.995 ± 0.001	0.530 ± 0.039	0.996 ± 0.001	0.655 ± 0.042
	0.100	0.100	0.050	0.949 ± 0.025	0.239 ± 0.096	0.968 ± 0.022	0.401 ± 0.176
	0.100	0.104	0.050	0.958 ± 0.021	0.261 ± 0.101	0.975 ± 0.018	0.448 ± 0.189
	0.100	0.108	0.050	0.969 ± 0.018	0.297 ± 0.117	0.986 ± 0.012	0.529 ± 0.179
	0.200	0.200	0.050	0.946 ± 0.007	0.207 ± 0.019	0.956 ± 0.007	0.298 ± 0.040
	0.200	0.204	0.050	0.962 ± 0.005	0.258 ± 0.025	0.971 ± 0.005	0.364 ± 0.042
	0.200	0.208	0.050	0.978 ± 0.004	0.338 ± 0.031	0.984 ± 0.003	0.446 ± 0.042
	0.400	0.400	0.050	0.945 ± 0.005	0.173 ± 0.013	0.951 ± 0.005	0.215 ± 0.027
	0.400	0.404	0.050	0.966 ± 0.003	0.228 ± 0.019	0.972 ± 0.004	0.299 ± 0.034
	0.400	0.408	0.050	0.985 ± 0.002	0.339 ± 0.028	0.989 ± 0.002	0.424 ± 0.037
	0.100	0.100	0.100	0.903 ± 0.035	0.155 ± 0.040	0.927 ± 0.030	0.216 ± 0.111
	0.100	0.104	0.100	0.927 ± 0.025	0.177 ± 0.044	0.948 ± 0.027	0.248 ± 0.117
	0.100	0.108	0.100	0.951 ± 0.024	0.222 ± 0.068	0.962 ± 0.022	0.317 ± 0.123
	0.200	0.200	0.100	0.900 ± 0.007	0.138 ± 0.006	0.906 ± 0.008	0.158 ± 0.016
	0.200	0.204	0.100	0.922 ± 0.007	0.160 ± 0.010	0.930 ± 0.007	0.192 ± 0.020
	0.200	0.208	0.100	0.947 ± 0.006	0.201 ± 0.016	0.955 ± 0.006	0.246 ± 0.027
	0.400	0.400	0.100	0.900 ± 0.005	0.128 ± 0.004	0.902 ± 0.006	0.130 ± 0.006
	0.400	0.404	0.100	0.922 ± 0.004	0.143 ± 0.006	0.924 ± 0.004	0.147 ± 0.008
	0.400	0.408	0.100	0.948 ± 0.004	0.174 ± 0.008	0.951 ± 0.004	0.190 ± 0.014

Table 19. Recall & False Positive Rate for Optical.digits Dataset using Iforest for varying q (target recall $1 - q$)

				Basic CDF		Iso CDF	
				Recall	False Positive Rate	Recall	False Positive Rate
Dataset	α	$\hat{\alpha}$	q	recall$\pm$CI	FPR$\pm$CI	recall$\pm$CI	FPR$\pm$CI
Optical.digits	0.100	0.100	0.020	0.891 ± 0.018	0.172 ± 0.036	0.940 ± 0.017	0.504 ± 0.068
n=568	0.100	0.104	0.020	0.904 ± 0.013	0.191 ± 0.036	0.952 ± 0.012	0.521 ± 0.066
	0.100	0.108	0.020	0.917 ± 0.012	0.214 ± 0.037	0.961 ± 0.011	0.548 ± 0.065
	0.200	0.200	0.020	0.941 ± 0.010	0.178 ± 0.032	0.964 ± 0.010	0.424 ± 0.065
	0.200	0.204	0.020	0.951 ± 0.008	0.218 ± 0.037	0.974 ± 0.008	0.465 ± 0.064
	0.200	0.208	0.020	0.965 ± 0.007	0.268 ± 0.040	0.983 ± 0.006	0.520 ± 0.063
	0.400	0.400	0.020	0.968 ± 0.006	0.250 ± 0.039	0.978 ± 0.006	0.451 ± 0.061
	0.400	0.404	0.020	0.979 ± 0.004	0.338 ± 0.045	0.986 ± 0.004	0.519 ± 0.058
	0.400	0.408	0.020	0.990 ± 0.003	0.442 ± 0.047	0.994 ± 0.002	0.608 ± 0.054
	0.100	0.100	0.050	0.882 ± 0.018	0.148 ± 0.033	0.933 ± 0.018	0.462 ± 0.068
	0.100	0.104	0.050	0.896 ± 0.014	0.164 ± 0.034	0.945 ± 0.013	0.481 ± 0.066
	0.100	0.108	0.050	0.910 ± 0.013	0.192 ± 0.036	0.952 ± 0.012	0.500 ± 0.065
	0.200	0.200	0.050	0.920 ± 0.012	0.139 ± 0.026	0.953 ± 0.012	0.365 ± 0.061
	0.200	0.204	0.050	0.938 ± 0.009	0.168 ± 0.030	0.964 ± 0.009	0.386 ± 0.059
	0.200	0.208	0.050	0.954 ± 0.008	0.211 ± 0.034	0.973 ± 0.008	0.441 ± 0.060
	0.400	0.400	0.050	0.946 ± 0.007	0.149 ± 0.024	0.960 ± 0.007	0.288 ± 0.050
	0.400	0.404	0.050	0.963 ± 0.005	0.220 ± 0.033	0.974 ± 0.005	0.357 ± 0.049
	0.400	0.408	0.050	0.979 ± 0.004	0.315 ± 0.039	0.986 ± 0.004	0.443 ± 0.049
	0.100	0.100	0.100	0.856 ± 0.017	0.113 ± 0.027	0.920 ± 0.018	0.387 ± 0.066
	0.100	0.104	0.100	0.867 ± 0.015	0.127 ± 0.030	0.928 ± 0.016	0.407 ± 0.065
	0.100	0.108	0.100	0.886 ± 0.014	0.146 ± 0.031	0.938 ± 0.014	0.433 ± 0.064
	0.200	0.200	0.100	0.883 ± 0.012	0.083 ± 0.014	0.917 ± 0.014	0.227 ± 0.050
	0.200	0.204	0.100	0.907 ± 0.010	0.106 ± 0.018	0.935 ± 0.011	0.264 ± 0.049
	0.200	0.208	0.100	0.927 ± 0.009	0.140 ± 0.025	0.953 ± 0.009	0.305 ± 0.050
	0.400	0.400	0.100	0.899 ± 0.008	0.071 ± 0.005	0.911 ± 0.009	0.123 ± 0.024
	0.400	0.404	0.100	0.926 ± 0.005	0.097 ± 0.009	0.937 ± 0.007	0.163 ± 0.030
	0.400	0.408	0.100	0.952 ± 0.005	0.151 ± 0.018	0.961 ± 0.006	0.230 ± 0.035

Table 20. Recall & False Positive Rate for Letter Recognition Dataset using Iforest for varying q (target recall $1 - q$)

				Basic CDF		Iso CDF	
				Recall	False Positive Rate	Recall	False Positive Rate
Dataset	α	$\hat{\alpha}$	q	recall±CI	FPR±CI	recall±CI	FPR±CI
Letter recog	0.100	0.100	0.020	0.911 ± 0.016	0.234 ± 0.044	0.960 ± 0.013	0.588 ± 0.070
n=788	0.100	0.104	0.020	0.919 ± 0.013	0.262 ± 0.046	0.965 ± 0.011	0.603 ± 0.067
	0.100	0.108	0.020	0.931 ± 0.012	0.297 ± 0.048	0.973 ± 0.009	0.627 ± 0.065
	0.200	0.200	0.020	0.936 ± 0.011	0.203 ± 0.034	0.961 ± 0.011	0.444 ± 0.065
	0.200	0.204	0.020	0.954 ± 0.008	0.236 ± 0.036	0.975 ± 0.008	0.487 ± 0.064
	0.200	0.208	0.020	0.968 ± 0.007	0.288 ± 0.042	0.983 ± 0.006	0.534 ± 0.062
	0.400	0.400	0.020	0.971 ± 0.005	0.240 ± 0.029	0.979 ± 0.005	0.429 ± 0.057
	0.400	0.404	0.020	0.984 ± 0.004	0.334 ± 0.039	0.989 ± 0.003	0.525 ± 0.054
	0.400	0.408	0.020	0.993 ± 0.003	0.448 ± 0.044	0.996 ± 0.002	0.636 ± 0.048
	0.100	0.100	0.050	0.884 ± 0.019	0.208 ± 0.041	0.949 ± 0.017	0.552 ± 0.069
	0.100	0.104	0.050	0.903 ± 0.015	0.223 ± 0.041	0.959 ± 0.012	0.563 ± 0.067
	0.100	0.108	0.050	0.918 ± 0.014	0.252 ± 0.043	0.966 ± 0.011	0.582 ± 0.065
	0.200	0.200	0.050	0.915 ± 0.013	0.162 ± 0.025	0.943 ± 0.013	0.376 ± 0.062
	0.200	0.204	0.050	0.936 ± 0.009	0.190 ± 0.029	0.960 ± 0.009	0.410 ± 0.060
	0.200	0.208	0.050	0.955 ± 0.008	0.231 ± 0.034	0.974 ± 0.007	0.455 ± 0.059
	0.400	0.400	0.050	0.944 ± 0.007	0.152 ± 0.013	0.954 ± 0.007	0.250 ± 0.040
	0.400	0.404	0.050	0.966 ± 0.005	0.208 ± 0.019	0.974 ± 0.005	0.328 ± 0.042
	0.400	0.408	0.050	0.984 ± 0.004	0.307 ± 0.031	0.988 ± 0.004	0.435 ± 0.046
	0.100	0.100	0.100	0.862 ± 0.020	0.160 ± 0.034	0.930 ± 0.019	0.475 ± 0.067
	0.100	0.104	0.100	0.876 ± 0.018	0.174 ± 0.034	0.939 ± 0.016	0.492 ± 0.066
	0.100	0.108	0.100	0.891 ± 0.016	0.198 ± 0.036	0.951 ± 0.013	0.512 ± 0.065
	0.200	0.200	0.100	0.879 ± 0.013	0.113 ± 0.016	0.906 ± 0.014	0.238 ± 0.047
	0.200	0.204	0.100	0.899 ± 0.011	0.132 ± 0.019	0.928 ± 0.012	0.281 ± 0.049
	0.200	0.208	0.100	0.922 ± 0.010	0.160 ± 0.022	0.949 ± 0.010	0.324 ± 0.050
	0.400	0.400	0.100	0.902 ± 0.007	0.098 ± 0.004	0.907 ± 0.007	0.110 ± 0.009
	0.400	0.404	0.100	0.924 ± 0.006	0.117 ± 0.005	0.931 ± 0.006	0.139 ± 0.013
	0.400	0.408	0.100	0.951 ± 0.006	0.154 ± 0.010	0.959 ± 0.006	0.203 ± 0.024

Table 21. Recall & False Positive Rate for Shuttle Dataset using Iforest for varying q (target recall $1 - q$)

				Basic CDF		Iso CDF	
				Recall	False Positive Rate	Recall	False Positive Rate
Dataset	α	$\hat{\alpha}$	q	recall±CI	FPR±CI	recall±CI	FPR±CI
Shuttle	0.100	0.100	0.020	0.959 ± 0.008	0.147 ± 0.031	0.974 ± 0.007	0.419 ± 0.066
n=5000	0.100	0.104	0.020	0.972 ± 0.006	0.206 ± 0.039	0.985 ± 0.005	0.490 ± 0.065
	0.100	0.108	0.020	0.984 ± 0.004	0.287 ± 0.047	0.991 ± 0.003	0.545 ± 0.064
	0.200	0.200	0.020	0.975 ± 0.004	0.103 ± 0.016	0.983 ± 0.004	0.326 ± 0.058
	0.200	0.204	0.020	0.990 ± 0.002	0.192 ± 0.033	0.994 ± 0.002	0.457 ± 0.058
	0.200	0.208	0.020	0.998 ± 0.001	0.361 ± 0.043	0.999 ± 0.001	0.572 ± 0.053
	0.400	0.400	0.020	0.979 ± 0.002	0.089 ± 0.013	0.981 ± 0.002	0.151 ± 0.030
	0.400	0.404	0.020	0.996 ± 0.001	0.237 ± 0.028	0.997 ± 0.001	0.394 ± 0.042
	0.400	0.408	0.020	1.000 ± 0.000	0.541 ± 0.032	1.000 ± 0.000	0.642 ± 0.034
	0.100	0.100	0.050	0.941 ± 0.009	0.097 ± 0.018	0.956 ± 0.009	0.319 ± 0.059
	0.100	0.104	0.050	0.957 ± 0.008	0.135 ± 0.027	0.971 ± 0.007	0.371 ± 0.059
	0.100	0.108	0.050	0.973 ± 0.006	0.202 ± 0.037	0.984 ± 0.005	0.439 ± 0.060
	0.200	0.200	0.050	0.949 ± 0.005	0.063 ± 0.004	0.957 ± 0.005	0.150 ± 0.035
	0.200	0.204	0.050	0.973 ± 0.004	0.093 ± 0.011	0.979 ± 0.004	0.221 ± 0.042
	0.200	0.208	0.050	0.992 ± 0.002	0.187 ± 0.028	0.995 ± 0.002	0.368 ± 0.044
	0.400	0.400	0.050	0.948 ± 0.002	0.060 ± 0.002	0.949 ± 0.002	0.061 ± 0.002
	0.400	0.404	0.050	0.976 ± 0.002	0.083 ± 0.006	0.977 ± 0.002	0.106 ± 0.016
	0.400	0.408	0.050	0.997 ± 0.001	0.218 ± 0.022	0.998 ± 0.001	0.291 ± 0.027
	0.100	0.100	0.100	0.899 ± 0.011	0.057 ± 0.005	0.917 ± 0.013	0.180 ± 0.046
	0.100	0.104	0.100	0.923 ± 0.010	0.073 ± 0.010	0.938 ± 0.011	0.211 ± 0.047
	0.100	0.108	0.100	0.946 ± 0.009	0.104 ± 0.018	0.960 ± 0.009	0.273 ± 0.050
	0.200	0.200	0.100	0.902 ± 0.005	0.047 ± 0.001	0.904 ± 0.005	0.048 ± 0.001
	0.200	0.204	0.100	0.928 ± 0.004	0.054 ± 0.001	0.931 ± 0.004	0.066 ± 0.009
	0.200	0.208	0.100	0.958 ± 0.004	0.069 ± 0.004	0.963 ± 0.004	0.114 ± 0.020
	0.400	0.400	0.100	0.899 ± 0.002	0.049 ± 0.001	0.899 ± 0.002	0.049 ± 0.001
	0.400	0.404	0.100	0.925 ± 0.002	0.054 ± 0.001	0.926 ± 0.002	0.054 ± 0.001
	0.400	0.408	0.100	0.958 ± 0.002	0.065 ± 0.001	0.959 ± 0.002	0.066 ± 0.001

Table 22. Recall & False Positive Rate for Covertype Dataset using Iforest for varying q (target recall $1 - q$)

				Basic CDF		Iso CDF	
				Recall	False Positive Rate	Recall	False Positive Rate
Dataset	α	$\hat{\alpha}$	q	recall±CI	FPR±CI	recall±CI	FPR±CI
Covertype	0.100	0.100	0.020	0.979 ± 0.002	0.012 ± 0.007	0.989 ± 0.002	0.359 ± 0.072
n=13624	0.100	0.104	0.020	0.995 ± 0.001	0.095 ± 0.025	0.998 ± 0.001	0.479 ± 0.067
	0.100	0.108	0.020	0.999 ± 0.000	0.292 ± 0.045	0.999 ± 0.000	0.586 ± 0.059
	0.200	0.200	0.020	0.980 ± 0.001	0.006 ± 0.002	0.986 ± 0.002	0.211 ± 0.055
	0.200	0.204	0.020	0.998 ± 0.000	0.143 ± 0.027	0.999 ± 0.000	0.420 ± 0.058
	0.200	0.208	0.020	1.000 ± 0.000	0.427 ± 0.043	1.000 ± 0.000	0.615 ± 0.047
	0.400	0.400	0.020	0.981 ± 0.001	0.010 ± 0.001	0.985 ± 0.002	0.136 ± 0.044
	0.400	0.404	0.020	0.998 ± 0.000	0.206 ± 0.030	0.999 ± 0.000	0.437 ± 0.051
	0.400	0.408	0.020	1.000 ± 0.000	0.555 ± 0.038	1.000 ± 0.000	0.677 ± 0.036
	0.100	0.100	0.050	0.950 ± 0.002	0.002 ± 0.000	0.962 ± 0.004	0.166 ± 0.051
	0.100	0.104	0.050	0.978 ± 0.001	0.012 ± 0.004	0.987 ± 0.002	0.276 ± 0.058
	0.100	0.108	0.050	0.997 ± 0.001	0.110 ± 0.025	0.998 ± 0.000	0.409 ± 0.060
	0.200	0.200	0.050	0.950 ± 0.001	0.003 ± 0.000	0.952 ± 0.002	0.018 ± 0.014
	0.200	0.204	0.050	0.980 ± 0.001	0.008 ± 0.002	0.983 ± 0.001	0.115 ± 0.035
	0.200	0.208	0.050	0.999 ± 0.000	0.154 ± 0.026	1.000 ± 0.000	0.319 ± 0.045
	0.400	0.400	0.050	0.951 ± 0.001	0.006 ± 0.000	0.951 ± 0.001	0.006 ± 0.000
	0.400	0.404	0.050	0.980 ± 0.001	0.012 ± 0.002	0.981 ± 0.001	0.050 ± 0.015
	0.400	0.408	0.050	0.999 ± 0.000	0.200 ± 0.022	1.000 ± 0.000	0.310 ± 0.034
	0.100	0.100	0.100	0.901 ± 0.002	0.002 ± 0.000	0.905 ± 0.004	0.028 ± 0.022
	0.100	0.104	0.100	0.930 ± 0.001	0.002 ± 0.000	0.937 ± 0.004	0.055 ± 0.029
	0.100	0.108	0.100	0.965 ± 0.001	0.004 ± 0.001	0.973 ± 0.003	0.123 ± 0.038
	0.200	0.200	0.100	0.902 ± 0.002	0.002 ± 0.000	0.902 ± 0.002	0.002 ± 0.000
	0.200	0.204	0.100	0.929 ± 0.001	0.002 ± 0.000	0.929 ± 0.001	0.002 ± 0.000
	0.200	0.208	0.100	0.964 ± 0.001	0.003 ± 0.000	0.965 ± 0.001	0.011 ± 0.003
	0.400	0.400	0.100	0.903 ± 0.001	0.005 ± 0.000	0.903 ± 0.001	0.005 ± 0.000
	0.400	0.404	0.100	0.929 ± 0.001	0.005 ± 0.000	0.929 ± 0.001	0.005 ± 0.000
	0.400	0.408	0.100	0.964 ± 0.001	0.007 ± 0.000	0.964 ± 0.001	0.007 ± 0.001