Supplementary Material of CertPri

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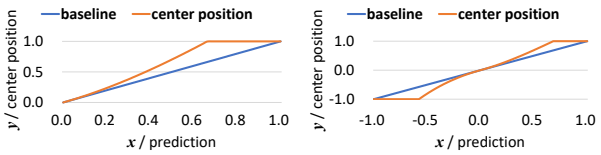
A CENTER POSITION OF DEFINITION 1

To illustrate the center position of classification model and regression model in **Definition 1**, we draw a one-dimensional center position curve, where the x-axis is the model prediction output and the y-axis is the corresponding class center position. In Figure A.1, the baseline represents the $y = x$ line.



(a) Classification (b) Regression

Figure A.1: Center position visualization of classification and regression in Definition 1.

B MORE DETAILS ABOUT CERTPRI

B.1 Proof of Theorem 2

Theorem 2 (Formal guarantee on lower bound γ_L of inverse perturbation for regression model). *Let $\boldsymbol{x}_0 \in \mathbb{R}^{d_1}$ and $f^R : \mathbb{R}^{d_1} \to \mathbb{R}^{d_2}$ be a regression model with continuously differentiable components. For all $\boldsymbol{\mu} \in \mathbb{R}^{d_1}$ with $||\boldsymbol{\mu}||_p \leq \min \frac{\sum_i |f^R_{i,+}(\boldsymbol{x}_0) - f^R_i(\boldsymbol{x}_0)|}{d_2 \times L^r_q}$, $\frac{1}{d_2} \sum |r(\boldsymbol{x}_0 + \boldsymbol{\mu}) - r(\boldsymbol{x}_0)| \leq \delta$ holds with $\frac{1}{p} + \frac{1}{q} = 1, 1 \leq \{p, q\} \leq \infty$ and L^r_q is the Lipschitz constant for the function $\frac{\sum_i |f^R_{i,+}(\boldsymbol{x}) - f^R_i(\boldsymbol{x})|}{d_2}$ in l_p norm. In other word, $\gamma_L = \min \frac{\sum_i |f^R_{i,+}(\boldsymbol{x}_0) - f^R_i(\boldsymbol{x}_0)|}{d_2 \times L^r_q}$ is a lower bound of minimum inverse perturbation.*

Proof. According to Lemma 1, the assumption that the function $h(\boldsymbol{x}) := \frac{\sum_i |f^R_{i,+}(\boldsymbol{x}) - f^R_i(\boldsymbol{x})|}{d_2}$ is Lipschitz continuous with Lipschitz constant L^r_q gives:

$$|h(\boldsymbol{a}) - h(\boldsymbol{b})| \leq L^r_q ||\boldsymbol{a} - \boldsymbol{b}||_p. \tag{B.1}$$

Let $\boldsymbol{a} = \boldsymbol{x}_0 + \boldsymbol{\mu}$ and $\boldsymbol{b} = \boldsymbol{x}_0$, we get:

$$|h(\boldsymbol{x}_0 + \boldsymbol{\mu}) - h(\boldsymbol{x}_0)| \leq L^r_q ||\boldsymbol{\mu}||_p, \tag{B.2}$$

which can be rearranged as follows:

$$\begin{aligned} & -L^r_q ||\boldsymbol{\mu}||_p \leq h(\boldsymbol{x}_0 + \boldsymbol{\mu}) - h(\boldsymbol{x}_0) \leq L^r_q ||\boldsymbol{\mu}||_p, \\ \Rightarrow \quad & h(\boldsymbol{x}_0) - L^r_q ||\boldsymbol{\mu}||_p \leq h(\boldsymbol{x}_0 + \boldsymbol{\mu}) \leq h(\boldsymbol{x}_0) + L^r_q ||\boldsymbol{\mu}||_p. \end{aligned} \tag{B.3}$$

When $h(\boldsymbol{x}_0 + \boldsymbol{\mu}) = 0$, the inversely perturbed test input is moved to the regression center. As represented by Eq. (B.3), $h(\boldsymbol{x}_0) - L^r_q ||\boldsymbol{\mu}||_p$ is the lower bound of $h(\boldsymbol{x}_0 + \boldsymbol{\mu})$. If $h(\boldsymbol{x}_0) - L^r_q ||\boldsymbol{\mu}||_p \geq 0$ for sufficiently small inverse perturbation $||\boldsymbol{\mu}||_p$, the inversely perturbed test input cannot reach the regression center, i.e.,

$$\begin{aligned} & h(\boldsymbol{x}_0) - L^r_q ||\boldsymbol{\mu}||_p \geq 0, \\ \Rightarrow \quad & ||\boldsymbol{\mu}||_p \leq \frac{h(\boldsymbol{x}_0)}{L^r_q}, \\ \Rightarrow \quad & ||\boldsymbol{\mu}||_p \leq \frac{\sum_i |f^R_{i,+}(\boldsymbol{x}_0) - f^R_i(\boldsymbol{x}_0)|}{d_2 \times L^c_q}. \end{aligned} \tag{B.4}$$

B.2 Formal Guarantee for ReLU

Lemma 2 (Formal guarantee on γ_L for ReLU activation). *Let $h(\boldsymbol{x}) = \sigma(W_l \sigma(W_{l-1} ... \sigma(W_1 \boldsymbol{x})))$ be a l-layer neural network with ReLU activation $\sigma(\boldsymbol{x}) = \max(0, \boldsymbol{x})$, where W_i is the weights of the i-th layer. Here we do not consider bias terms due to their constant nature. Let $D \subset \mathbb{R}^d$ be a convex bounded closed set, then Equation* (1) *in the manuscript holds with $L_q = \sup_{\boldsymbol{x} \in D} \{ |\sup_{||\boldsymbol{e}||_p = 1} h'(\boldsymbol{x}; \boldsymbol{e})| \}$ where $h'(\boldsymbol{x}; \boldsymbol{e}) := \lim_{\varepsilon \to 0^+} \frac{h(\boldsymbol{x} + \varepsilon \boldsymbol{e}) - h(\boldsymbol{x})}{\varepsilon}$ is the one-sided directional derivative, then* **Theorems 1** *and* **2** *still hold.*

Proof. For any $\{\boldsymbol{a}, \boldsymbol{b}\} \in D$, let $\boldsymbol{e} = \frac{\boldsymbol{b} - \boldsymbol{a}}{||\boldsymbol{b} - \boldsymbol{a}||_p}$ be the unit vector pointing from $\boldsymbol{a}$ to $\boldsymbol{b}$, and $r = ||\boldsymbol{a} - \boldsymbol{b}||_p$ is a l_p-norm. Define univariate function $\varphi(\varepsilon) = h(\boldsymbol{a} + \varepsilon \boldsymbol{e})$, then $\varphi(0) = h(\boldsymbol{a})$ and $\varphi(r) = h(\boldsymbol{b})$ and observe that $h'(\boldsymbol{a} + \varepsilon \boldsymbol{e}; \boldsymbol{e})$ and $h'(\boldsymbol{a} + \varepsilon \boldsymbol{e}; -\boldsymbol{e})$ are the right and left derivatives of $\varphi(\varepsilon)$, we have

$$\varphi'(\varepsilon) = \begin{cases} h'(\boldsymbol{a} + \varepsilon \boldsymbol{e}; \boldsymbol{e}) \leq L_q & \text{if } h'(\boldsymbol{a} + \varepsilon \boldsymbol{e}; \boldsymbol{e}) = h'(\boldsymbol{a} + \varepsilon \boldsymbol{e}; -\boldsymbol{e}) \\ \text{None} & \text{otherwise} \end{cases} \tag{B.5}$$

For a neural network with ReLU activation, there can be at most finite number of points in $\varepsilon \in (0, r)$ such that $\varphi'(\varepsilon)$ is none. This can be shown because each discontinuous ε is caused by some ReLU activation, and there are only finite combinations. Let $0 = \varepsilon_0 < \varepsilon_1 < ... < \varepsilon_{k-1} < \varepsilon_k = 1$ be those points. Then, using the fundamental theorem of calculus on each interval separately, there exists $\overline{\varepsilon_i} \in (\varepsilon_i, \varepsilon_{i-1})$ for each i such that

$$\begin{aligned} \varphi(r) - \varphi(0) &\leq \textstyle\sum_{i=0}^k |\varphi(\varepsilon_i) - \varphi(\varepsilon_{i-1})| \leq \sum_{i=0}^k |\varphi'(\overline{\varepsilon_i})(\varepsilon_i - \varepsilon_{i-1})| \\ &\leq \textstyle\sum_{i=0}^k L_q |\varepsilon_i - \varepsilon_{i-1}|_p = L_q ||\boldsymbol{b} - \boldsymbol{a}||_p, \end{aligned} \tag{B.6}$$

i.e., $h(\boldsymbol{b}) - h(\boldsymbol{a}) \leq L_q ||\boldsymbol{b} - \boldsymbol{a}||_p$. Therefore, **Theorems 1** and **2** still hold.

B.3 Generalized Extreme Value Theory

Here we give the PDF and CDF of the three extreme value distributions.

Gumbel (Type I). The PDF and CDF with $\xi = 0$ are as follows:

$$\begin{aligned} g_\xi(z) &= \exp(-(z + \exp(-z))), \\ G_\xi(z) &= \exp(-\exp(-z)). \end{aligned} \tag{B.7}$$

Fréchet (Type II). The PDF and CDF with $\xi > 0$ are as follows:

$$\begin{aligned} g_\xi(z) &= \begin{cases} \exp(-(1 + \xi z)^{-\frac{1}{\xi}}) \times (1 + \xi z)^{-\frac{1+\xi}{\xi}}, & z > -\frac{1}{\xi} \\ 0, & z \leq -\frac{1}{\xi} \end{cases} \\ G_\xi(z) &= \begin{cases} \exp(-(1 + \xi z)^{-\frac{1}{\xi}}), & z > -\frac{1}{\xi} \\ 0, & z \leq -\frac{1}{\xi} \end{cases} \end{aligned} \tag{B.8}$$

Weibull (Type III). The PDF and CDF with $\xi < 0$ are as follows:

$$\begin{aligned} g_\xi(z) &= \begin{cases} \exp(-(1 + \xi z)^{-\frac{1}{\xi}}) \times (1 + \xi z)^{-\frac{1+\xi}{\xi}}, & z \leq -\frac{1}{\xi} \\ 0, & z > -\frac{1}{\xi} \end{cases} \\ G_\xi(z) &= \begin{cases} \exp(-(1 + \xi z)^{-\frac{1}{\xi}}), & z \leq -\frac{1}{\xi} \\ 1, & z > -\frac{1}{\xi} \end{cases} \end{aligned} \tag{B.9}$$

B.4 Prioritization in Black-box Scenarios

We can extend CertPri to a black-box scenario based on the gradient estimation. The gradient norm at line 6 in **Algorithm 1** is computed by back propagation, which requires internal details of the model. When we replace it with the gradient estimation (as shown in **Algorithm 2**), CertPri can be implemented in a black-box scenario. We conduct a preliminary study based on a small dataset, and find that T>5 for Algorithm 2 is effective in general. To guarantee CertPri's effectiveness in the black-box scenario, we follow the double-minimum strategy, i.e., T=10, ϵ=0.005max($\boldsymbol{x}$) for Algorithm 2.

Algorithm 2: Gradient estimation in the black-box scenario.

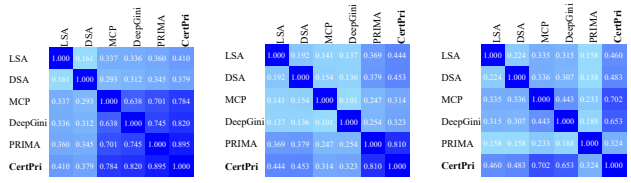
Input: A test input $\boldsymbol{x}_0$, a loss function $Loss(y_{true}, y_{pred})$ of $f(\boldsymbol{x})$, iterations T, a small constant ϵ.
Output: The estimated gradient norm $\hat{g}$.

1 $\hat{g}_0 = 0$, noise mean $u_n = 0$, noise variance $\sigma_n = 1$.
2 **For** $i = 1 : T$ **do**
3 Randomly sample Gaussian noise vector $\boldsymbol{n}_i$ with u_n and σ_n in the same dimension as $\boldsymbol{x}_0$.
4 $\boldsymbol{x}_i^+ = \boldsymbol{x}_0 + \epsilon \times \boldsymbol{n}_i, \quad \boldsymbol{x}_i^- = \boldsymbol{x}_0 - \epsilon \times \boldsymbol{n}_i$.
5 $l_i^+ = Loss\left(f(\boldsymbol{x}_0), f(\boldsymbol{x}_i^+)\right), \quad l_i^- = Loss\left(f(\boldsymbol{x}_0), f(\boldsymbol{x}_i^-)\right)$.
6 $\hat{g}_i = \hat{g}_{i-1} + ||(l_i^+ - l_i^-) \times \boldsymbol{n}_i||_q$.
7 **End For**
8 $\hat{g} = \frac{\hat{g}_i}{2\epsilon \times T}$.

C MORE EXPERIMENTAL RESULTS

C.1 Correlation of Robustness

To interpret the utility of robustness, taking adaptive attacks on ImageNet dataset as an example (ID: 22-24), we first calculate the Pearson correlation of empirical movement costs for adaptive attacked test inputs prioritized by different methods. Then we illustrate them as heatmaps shown in Figure C.1.

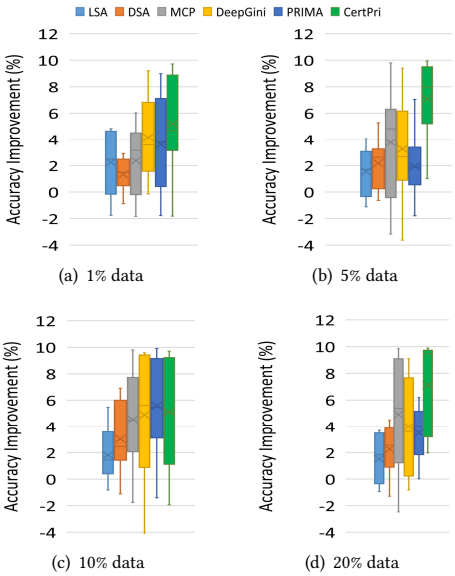


(a) +AdapS (ID: 22) (b) +AdapC (ID: 23) (c) +AdapM (ID: 24)

Figure C.1: Pearson correlation of empirical movement costs for adaptive attacked test inputs prioritized by different methods on ImageNet dataset.

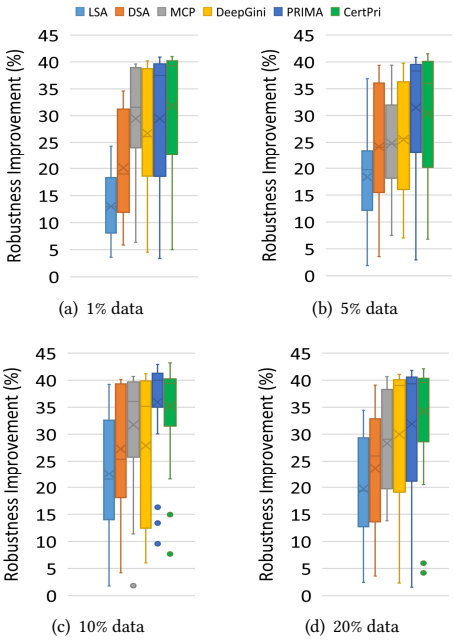
C.2 Guidance of CertPri

The evaluation results of accuracy improvement and robustness improvement for DNNs on CIFAR10 dataset are illustrated as boxplots shown in Figure C.2 and Figure C.3. In terms of performance, we sample original data prioritized at the front 1%, 5%, 10% and 20% in the training set. We set epoch=5 for retraining due to the small number of data. We compare the test accuracy. In terms of robustness, we sample adversarial data prioritized at the front 1%, 5%, 10% and 20% in the adversarial set. We mix the sampled data with the original training set, and set epoch=2 for retraining due to the large number of data. Repeat above operations 5 times.



(a) 1% data (b) 5% data (c) 10% data (d) 20% data

Figure C.2: The boxplots of accuracy improvement for different methods under first 1%, 5%, 10% and 20% data sampling.



(a) 1% data (b) 5% data (c) 10% data (d) 20% data

Figure C.3: The boxplots of robustness improvement for different methods under first 1%, 5%, 10% and 20% data sampling.

D RAW DATA OF RAUC

we repeat the experiment 5 times and record about 9,000 raw data. We put the detailed comparison results for each subject of each repetition as follows, where "t/o" means time out, i.e., it cannot produce results after running for 24 hours; "n/a" means not applicable in theory, i.e., the number of test inputs is too small to calculate the corresponding RAUC value (ID: 39, 45, 46, 50), or the baseline cannot be applied in the regression task or the black-box scenario.

D.1 Repeat 1st

ID	Datasets	Models	Struc.	#Inputs	Types	Forms	Tas.	Sce.	Methods	RAUC-100	RAUC-200	RAUC-300	RAUC-500	RAUC-1000	RAUC-all
1	CIFAR10	ResNet50	CNN	10000	original	image	C	N+W	LSA	0.3921	0.2955	0.2537	0.2433	0.2401	0.6332
									DSA	0.3672	0.3312	0.3023	0.2739	0.2684	0.6380
									MCP	0.3690	0.3633	0.3547	0.4510	0.4410	0.8023
									DeepGini	0.6587	0.6231	0.6073	0.5988	0.5820	0.8020
									PRIMA	0.8320	0.8043	0.7740	**0.7712**	0.7030	**0.9320**
									CertPri	**0.8589**	**0.8233**	**0.8015**	0.7545	**0.7227**	0.9213
2	CIFAR10	ResNet50	CNN	10000	original	image	C	N+B	LSA	n/a	n/a	n/a	n/a	n/a	n/a
									DSA	n/a	n/a	n/a	n/a	n/a	n/a
									MCP	0.3690	0.3633	0.3547	0.4510	0.4410	0.8023
									DeepGini	0.6587	0.6231	0.6073	0.5988	0.5820	0.8020
									PRIMA	0.4548	0.4389	0.4212	0.4028	0.4211	0.7055
									CertPri	**0.8634**	**0.8023**	**0.8003**	**0.7423**	**0.7329**	**0.9023**
3	CIFAR10	ResNet50	CNN	10000	+BIM	image	C	N+W	LSA	0.7742	0.7639	0.7310	0.7050	0.6832	0.7592
									DSA	0.8230	0.8215	0.8190	0.8034	0.7723	0.7477
									MCP	0.8544	0.8300	0.8357	0.8054	0.7893	0.6943
									DeepGini	0.9453	0.9478	0.9423	0.9433	0.9250	0.9023
									PRIMA	**1.0000**	**1.0000**	**0.9980**	0.9740	0.9587	0.9432
									CertPri	0.9920	0.9812	0.9897	**0.9793**	**0.9705**	**0.9533**
4	CIFAR10	ResNet50	CNN	10000	+C&W	image	C	N+W	LSA	0.8631	0.8235	0.8022	0.7832	0.7574	0.7629
									DSA	0.8790	0.8540	0.8570	0.8120	0.7765	0.7854
									MCP	0.6340	0.7560	0.7450	0.7469	0.7380	0.7945
									DeepGini	0.8770	0.8690	0.8912	0.8830	0.8870	0.8935
									PRIMA	1.0000	**1.0000**	**0.9950**	0.9470	0.9453	0.9760
									CertPri	**1.0000**	0.9756	0.9744	**0.9637**	**0.9582**	**0.9799**
5	CIFAR10	ResNet50	CNN	10000	FineFool	image	C	N+W	LSA	0.8234	0.8027	0.7855	0.7433	0.7580	0.7790
									DSA	0.8450	0.8054	0.7948	0.7739	0.7549	0.7693
									MCP	0.8546	0.8566	0.8670	0.8405	0.8399	0.8492
									DeepGini	0.8985	0.8944	0.8859	0.8802	0.8740	0.8809
									PRIMA	0.9230	0.9377	0.9410	0.9406	0.9433	0.9462
									CertPri	**0.9587**	**0.9644**	**0.9865**	**0.9803**	**0.9897**	**0.9874**
6	CIFAR10	ResNet50	CNN	10000	+AdapS	image	C	N+W	LSA	0.2479	0.1553	0.1259	0.1189	0.1270	0.3520
									DSA	0.2318	0.1569	0.1892	0.1545	0.1065	0.3484
									MCP	0.2336	0.2473	0.2403	0.3412	0.3309	0.6629
									DeepGini	0.5400	0.4778	0.4724	0.4838	0.4585	0.6604
									PRIMA	0.5532	0.5387	0.4832	0.5162	0.4051	0.6072
									CertPri	**0.8578**	**0.8161**	**0.7978**	**0.7513**	**0.7181**	**0.9152**
7	CIFAR10	ResNet50	CNN	10000	+AdapC	image	C	N+W	LSA	0.3089	0.2143	0.1942	0.1950	0.1488	0.5466
									DSA	0.3082	0.2754	0.2493	0.2068	0.1933	0.5691
									MCP	0.1305	0.1345	0.1341	0.1407	0.1687	0.2879
									DeepGini	0.1566	0.1418	0.1432	0.1854	0.1584	0.2962
									PRIMA	0.6095	0.5702	0.5600	0.5483	0.4650	0.6934
									CertPri	**0.8536**	**0.8175**	**0.7959**	**0.7500**	**0.7175**	**0.9195**
8	CIFAR10	ResNet50	CNN	10000	+AdapM	image	C	N+W	LSA	0.2066	0.1116	0.1539	0.1082	0.1283	0.4780
									DSA	0.2048	0.1787	0.1225	0.1297	0.1154	0.4564
									MCP	0.2380	0.2164	0.2356	0.3069	0.3257	0.6551
									DeepGini	0.5371	0.4880	0.5051	0.4931	0.4341	0.6735
									PRIMA	0.3590	0.3572	0.3448	0.3671	0.3276	0.4424
									CertPri	**0.8530**	**0.8158**	**0.7960**	**0.7542**	**0.7165**	**0.9192**
9	CIFAR10	VGG16	CNN	10000	original	image	C	N+W	LSA	0.4026	0.2870	0.2538	0.2606	0.2425	0.6342
									DSA	0.3582	0.3017	0.2961	0.2714	0.2584	0.6427
									MCP	0.3472	0.3844	0.3634	0.4296	0.4608	0.7809
									DeepGini	0.6389	0.6085	0.6332	0.5982	0.5600	0.8292
									PRIMA	0.8234	0.7882	0.7442	0.7413	0.7016	0.9141
									CertPri	**0.8606**	**0.8465**	**0.7821**	**0.7486**	**0.7102**	**0.9178**
10	CIFAR10	VGG16	CNN	10000	original	image	C	N+B	LSA	n/a	n/a	n/a	n/a	n/a	n/a
									DSA	n/a	n/a	n/a	n/a	n/a	n/a
									MCP	0.3472	0.3844	0.3634	0.4296	0.4608	0.7809
									DeepGini	0.6389	0.6085	0.6332	0.5982	0.5600	0.8292
									PRIMA	0.4683	0.4289	0.4423	0.4143	0.3982	0.6907
									CertPri	**0.8781**	**0.7931**	**0.8047**	**0.7510**	**0.7113**	**0.8813**
11	CIFAR10	VGG16	CNN	10000	+BIM	image	C	N+W	LSA	0.7582	0.7374	0.7200	0.6764	0.7023	0.7786
									DSA	0.8266	0.7974	0.8429	0.7927	0.7794	0.7726
									MCP	0.8450	0.8234	0.8331	0.7786	0.7740	0.6709
									DeepGini	0.9753	0.9689	**0.9604**	0.9395	0.9361	0.9014
									PRIMA	**0.9969**	**0.9755**	0.9536	**0.9449**	**0.9842**	0.9373
									CertPri	0.9694	0.9527	0.9177	0.9021	0.9497	**0.9582**
12	CIFAR10	VGG16	CNN	10000	+C&W	image	C	N+W	LSA	0.8544	0.8459	0.8244	0.7867	0.7536	0.7834
									DSA	0.8791	0.8620	0.8478	0.7877	0.7997	0.7587
									MCP	0.6090	0.7465	0.7318	0.7285	0.7258	0.7687
									DeepGini	0.9065	0.8964	0.8842	0.8749	0.9129	0.9008
									PRIMA	**0.9797**	**0.9978**	0.9143	**0.9434**	0.9302	0.9552
									CertPri	0.9349	0.9607	**0.9900**	0.9367	**0.9592**	**0.9743**
13	CIFAR10	VGG16	CNN	10000	FineFool	image	C	N+W	LSA	0.8071	0.7952	0.7925	0.7709	0.7290	0.7507
									DSA	0.8290	0.8179	0.7925	0.7572	0.7770	0.7511
									MCP	0.8291	0.8621	0.8862	0.8258	0.8303	0.8431
									DeepGini	0.8770	0.9055	0.8741	0.8654	0.8469	0.8865
									PRIMA	**0.9491**	0.9561	0.9700	**0.9683**	0.9254	0.9451
									CertPri	0.9488	**0.9846**	**0.9733**	0.9081	**0.9851**	**0.9794**
14	CIFAR10	VGG16	CNN	10000	+AdapS	image	C	N+W	LSA	0.2701	0.1401	0.1301	0.0893	0.1066	0.3466
									DSA	0.2133	0.1742	0.1890	0.1839	0.0881	0.3554
									MCP	0.2377	0.2426	0.2364	0.3547	0.3569	0.6538
									DeepGini	0.5455	0.4639	0.4869	0.4575	0.4839	0.6799
									PRIMA	0.5266	0.5483	0.4612	0.5426	0.4286	0.6072
									CertPri	**0.8642**	**0.8306**	**0.8184**	**0.7755**	**0.7353**	**0.8934**
15	CIFAR10	VGG16	CNN	10000	+AdapC	image	C	N+W	LSA	0.3353	0.2167	0.2194	0.2012	0.1552	0.5402
									DSA	0.3229	0.2878	0.2528	0.2086	0.2043	0.5803
									MCP	0.1044	0.1543	0.1532	0.1184	0.1427	0.2856
									DeepGini	0.1361	0.1714	0.1201	0.1985	0.1623	0.2759
									PRIMA	0.6290	0.5810	0.5479	0.5277	0.4633	0.6977
									CertPri	**0.8428**	**0.8076**	**0.7840**	**0.7402**	**0.7427**	**0.9279**
									LSA	0.2340	0.1205	0.1569	0.1047	0.1084	0.4495

16	CIFAR10	VGG16	CNN	10000	+AdapM	image	C	N+W	DSA	0.2091	0.1643	0.0986	0.1242	0.1084	0.4778
									MCP	0.2537	0.2067	0.2239	0.2853	0.3273	0.6732
									DeepGini	0.5463	0.5132	0.4965	0.4841	0.4537	0.6755
									PRIMA	0.3775	0.3565	0.3690	0.3576	0.3060	0.4545
									CertPri	**0.8657**	**0.7999**	**0.7736**	**0.7473**	**0.6884**	**0.9290**
17	ImageNet	ResNet101	CNN	5000	original	image	C	N+W	LSA	0.3680	0.2993	0.2586	0.2215	0.2192	0.6370
									DSA	0.3399	0.3162	0.2780	0.2550	0.2749	0.6402
									MCP	0.3494	0.3708	0.3345	0.4357	0.4399	0.7942
									DeepGini	0.6472	0.6132	0.5725	0.5575	0.5347	0.7907
									PRIMA	0.7201	0.6981	**0.7154**	0.5925	0.5872	0.7870
									CertPri	**0.7554**	**0.7599**	0.6559	**0.6381**	**0.6015**	**0.8326**
18	ImageNet	ResNet101	CNN	5000	original	image	C	N+B	LSA	n/a	n/a	n/a	n/a	n/a	n/a
									DSA	n/a	n/a	n/a	n/a	n/a	n/a
									MCP	0.3494	0.3708	0.3345	0.4357	0.4399	0.7942
									DeepGini	0.6472	0.6132	0.5725	0.5575	0.5347	0.7907
									PRIMA	0.3747	0.5318	0.3912	0.3960	0.3888	0.5682
									CertPri	**0.7511**	**0.7677**	**0.6561**	**0.6502**	**0.5876**	**0.8462**
19	ImageNet	ResNet101	CNN	5000	+BIM	image	C	N+W	LSA	0.6242	0.6139	0.5810	0.4550	0.4332	0.5092
									DSA	0.5730	0.5715	0.5690	0.5534	0.5223	0.4977
									MCP	0.5744	0.7100	0.5557	0.6854	0.6693	0.4143
									DeepGini	0.8253	0.6678	0.8223	0.6633	0.6450	0.6223
									PRIMA	0.8388	0.7293	**0.8980**	0.6740	**0.8587**	0.6432
									CertPri	**0.8420**	**0.8312**	0.8397	**0.9293**	0.8205	**0.9033**
20	ImageNet	ResNet101	CNN	5000	+C&W	image	C	N+W	LSA	0.6131	0.5735	0.6522	0.6332	0.6074	0.6129
									DSA	0.6290	0.7040	0.7070	0.5620	0.5265	0.5354
									MCP	0.5140	0.6360	0.6250	0.4669	0.4580	0.6745
									DeepGini	0.5970	0.5890	0.6112	0.6030	0.6070	0.7735
									PRIMA	0.9232	0.8788	0.8058	**0.8470**	0.8453	0.6760
									CertPri	**0.9532**	**0.9256**	**0.8244**	0.8137	**0.8485**	**0.9299**
21	ImageNet	ResNet101	CNN	5000	FineFool	image	C	N+W	LSA	0.5734	0.5527	0.5355	0.5933	0.6080	0.5290
									DSA	0.6950	0.5554	0.6448	0.6239	0.6049	0.5193
									MCP	0.5746	0.5766	0.7470	0.5605	0.5599	0.5692
									DeepGini	0.7785	0.7744	0.6059	0.6002	0.5940	0.6009
									PRIMA	0.8230	0.8377	0.8410	**0.8406**	0.6433	0.6462
									CertPri	**0.8387**	**0.9144**	**0.9365**	0.8303	**0.9397**	**0.9374**
22	ImageNet	ResNet101	CNN	5000	+AdapS	image	C	N+W	LSA	0.2463	0.0754	0.1381	0.0323	0.1862	0.3190
									DSA	0.1576	0.1447	0.2594	0.1709	0.0576	0.3060
									MCP	0.2198	0.3140	0.3130	0.3563	0.4163	0.5954
									DeepGini	0.5684	0.5549	0.4114	0.3989	0.3995	0.7013
									PRIMA	0.5064	0.5192	0.4118	0.4834	0.3365	0.5054
									CertPri	**0.7131**	**0.7974**	**0.6807**	**0.5991**	**0.6472**	**0.8462**
23	ImageNet	ResNet101	CNN	5000	+AdapC	image	C	N+W	LSA	0.3072	0.2453	0.1687	0.2072	0.1234	0.5079
									DSA	0.3082	0.3212	0.2305	0.2328	0.2430	0.5266
									MCP	0.0606	0.0952	0.1914	0.0288	0.1323	0.3452
									DeepGini	0.1448	0.0787	0.1461	0.1071	0.1938	0.2369
									PRIMA	0.6030	0.6042	0.6009	0.5317	0.4352	0.6850
									CertPri	**0.8139**	**0.7955**	**0.7474**	**0.6944**	**0.6620**	**0.8562**
24	ImageNet	ResNet101	CNN	5000	+AdapM	image	C	N+W	LSA	0.1875	0.1407	0.2033	0.0793	0.1096	0.4529
									DSA	0.1549	0.1500	0.1263	0.1286	0.1491	0.4894
									MCP	0.2753	0.2356	0.1867	0.2732	0.3746	0.6945
									DeepGini	0.5731	0.4823	0.4886	0.4695	0.4139	0.6405
									PRIMA	0.3329	0.3690	0.3349	0.3506	0.2984	0.4051
									CertPri	**0.8105**	**0.7533**	**0.7101**	**0.6665**	**0.6583**	**0.8302**
25	ImageNet	VGG19	CNN	5000	original	image	C	N+W	LSA	0.3656	0.2946	0.2503	0.2305	0.2146	0.6594
									DSA	0.3174	0.3129	0.2982	0.2415	0.2688	0.6332
									MCP	0.3253	0.3469	0.3198	0.4606	0.4530	0.7773
									DeepGini	0.6453	0.6247	0.5523	0.5417	0.5596	0.7672
									PRIMA	Out of Time	Out of Time	Out of Time	Out of Time	Out of Time	Out of Time
									CertPri	**0.7629**	**0.7606**	**0.6681**	**0.6596**	**0.6040**	**0.8338**
26	ImageNet	VGG19	CNN	5000	original	image	C	N+B	LSA	n/a	n/a	n/a	n/a	n/a	n/a
									DSA	n/a	n/a	n/a	n/a	n/a	n/a
									MCP	0.3253	0.3469	0.3198	0.4606	0.4530	0.7773
									DeepGini	0.6453	0.6247	0.5523	0.5417	0.5596	0.7672
									PRIMA	Out of Time	Out of Time	Out of Time	Out of Time	Out of Time	Out of Time
									CertPri	**0.7534**	**0.7594**	**0.6755**	**0.6442**	**0.5809**	**0.8709**
27	ImageNet	VGG19	CNN	5000	+BIM	image	C	N+W	LSA	0.6278	0.6020	0.5739	0.4797	0.4339	0.4919
									DSA	0.5669	0.5896	0.5898	0.5542	0.5282	0.4780
									MCP	0.5722	0.6964	0.5700	0.6924	0.6469	0.4176
									DeepGini	0.8027	0.6868	0.8072	0.6800	0.6229	0.6381
									PRIMA	Out of Time	Out of Time	Out of Time	Out of Time	Out of Time	Out of Time
									CertPri	**0.8612**	**0.8385**	**0.8528**	**0.9375**	**0.8384**	**0.8797**
28	ImageNet	VGG19	CNN	5000	+C&W	image	C	N+W	LSA	0.5971	0.5845	0.6382	0.6515	0.6160	0.6265
									DSA	0.6470	0.7250	0.6899	0.5674	0.5245	0.5338
									MCP	0.5005	0.6176	0.6018	0.4558	0.4352	0.6512
									DeepGini	0.5777	0.5881	0.6127	0.5920	0.6201	0.7650
									PRIMA	Out of Time	Out of Time	Out of Time	Out of Time	Out of Time	Out of Time
									CertPri	**0.9534**	**0.9251**	**0.8001**	**0.8176**	**0.8665**	**0.9066**
29	ImageNet	VGG19	CNN	5000	FineFool	image	C	N+W	LSA	0.5519	0.5640	0.5286	0.5859	0.6290	0.5140
									DSA	0.7011	0.5690	0.6658	0.6387	0.6268	0.5379
									MCP	0.5632	0.5698	0.7590	0.5411	0.5599	0.5460
									DeepGini	0.7705	0.7754	0.6134	0.5791	0.6030	0.5941
									PRIMA	Out of Time	Out of Time	Out of Time	Out of Time	Out of Time	Out of Time
									CertPri	**0.8279**	**0.9281**	**0.9390**	**0.8123**	**0.9444**	**0.9343**
30	ImageNet	VGG19	CNN	5000	+AdapS	image	C	N+W	LSA	0.2362	0.0712	0.1424	0.0432	0.2068	0.3126
									DSA	0.1699	0.1272	0.2692	0.1532	0.0691	0.2976
									MCP	0.2099	0.3092	0.2977	0.3700	0.4133	0.6015
									DeepGini	0.5869	0.5453	0.4200	0.4079	0.4218	0.6861
									PRIMA	Out of Time	Out of Time	Out of Time	Out of Time	Out of Time	Out of Time
									CertPri	**0.7299**	**0.8018**	**0.6774**	**0.5810**	**0.6686**	**0.8654**
31	ImageNet	VGG19	CNN	5000	+AdapC	image	C	N+W	LSA	0.2890	0.2334	0.1722	0.2316	0.1140	0.4923
									DSA	0.3135	0.3185	0.2255	0.2558	0.2566	0.5460
									MCP	0.0467	0.0921	0.2054	0.0115	0.1520	0.3364
									DeepGini	0.1226	0.0748	0.1659	0.1301	0.2086	0.2584
									PRIMA	Out of Time	Out of Time	Out of Time	Out of Time	Out of Time	Out of Time
									CertPri	**0.8035**	**0.7880**	**0.7479**	**0.7130**	**0.6664**	**0.8746**
									LSA	0.1879	0.1252	0.2144	0.0555	0.1144	0.4764

32	ImageNet	VGG19	CNN	5000	+AdapM	image	C	N+W	DSA	0.1548	0.1747	0.1248	0.1249	0.1365	0.5087
									MCP	0.2781	0.2122	0.2048	0.2882	0.3841	0.6815
									DeepGini	0.5853	0.4641	0.4885	0.4671	0.4180	0.6519
									PRIMA	Out of Time	Out of Time	Out of Time	Out of Time	Out of Time	Out of Time
									CertPri	**0.8031**	**0.7666**	**0.7072**	**0.6424**	**0.6797**	**0.8122**
33	DrivingSA	VGG19-AD	CNN	5279	original	image	R	N+W	LSA	0.3654	0.3876	0.3991	0.4236	0.4670	0.6509
									DSA	n/a	n/a	n/a	n/a	n/a	n/a
									MCP	n/a	n/a	n/a	n/a	n/a	n/a
									DeepGini	n/a	n/a	n/a	n/a	n/a	n/a
									PRIMA	**0.8156**	0.7966	0.7732	0.7439	0.6972	0.7673
									CertPri	0.7942	**0.8343**	**0.8541**	**0.8307**	**0.8022**	**0.8439**
34	DrivingSA	VGG19-AD	CNN	5279	original	image	R	N+B	LSA	n/a	n/a	n/a	n/a	n/a	n/a
									DSA	n/a	n/a	n/a	n/a	n/a	n/a
									MCP	n/a	n/a	n/a	n/a	n/a	n/a
									DeepGini	n/a	n/a	n/a	n/a	n/a	n/a
									PRIMA	0.4002	0.3877	0.3659	0.3740	0.3542	0.4041
									CertPri	**0.7879**	**0.8339**	**0.8043**	**0.8055**	**0.8305**	**0.8601**
35	DrivingSA	VGG19-AD	CNN	5279	patch	image	R	N+W	LSA	0.3299	0.3510	0.3706	0.3640	0.4504	0.6880
									DSA	n/a	n/a	n/a	n/a	n/a	n/a
									MCP	n/a	n/a	n/a	n/a	n/a	n/a
									DeepGini	n/a	n/a	n/a	n/a	n/a	n/a
									PRIMA	0.8170	0.8140	0.8060	0.7850	0.7330	0.7706
									CertPri	**0.8239**	**0.8214**	**0.8455**	**0.8493**	**0.8097**	**0.8599**
36	DrivingSA	VGG19-AD	CNN	5279	saturation	image	R	N+W	LSA	0.4460	0.4230	0.4620	0.4530	0.4700	0.6580
									DSA	n/a	n/a	n/a	n/a	n/a	n/a
									MCP	n/a	n/a	n/a	n/a	n/a	n/a
									DeepGini	n/a	n/a	n/a	n/a	n/a	n/a
									PRIMA	0.7630	0.7843	0.7922	0.8019	**0.8355**	0.8671
									CertPri	**0.8030**	**0.8098**	**0.8122**	**0.8206**	0.7977	**0.8841**
37	FMNIST	AlexNet	CNN	10000	original	image	C	N+W	LSA	0.3880	0.4470	0.5120	0.6403	0.7980	0.9332
									DSA	0.4856	0.5400	0.6136	0.7172	0.8385	0.9497
									MCP	0.4742	0.5752	0.6804	0.7372	0.8481	0.8983
									DeepGini	0.4823	0.5877	0.6678	0.7794	**0.8649**	0.9593
									PRIMA	**0.4907**	0.5321	0.5989	0.7390	0.8410	0.9505
									CertPri	0.4742	**0.5953**	**0.6902**	**0.8088**	0.8294	**0.9790**
38	FMNIST_P	AlexNet-P	CNN	10000	original	image	C	P+W	LSA	0.4710	0.4190	0.3880	0.3390	0.3099	0.5840
									DSA	0.5957	0.4972	0.4654	0.4122	0.3980	0.6201
									MCP	0.4506	0.4947	0.4690	0.4732	0.4041	0.5307
									DeepGini	0.4934	0.4785	0.4598	0.4860	0.3709	0.5434
									PRIMA	1.0000	1.0000	1.0000	**1.0000**	0.9506	0.9878
									CertPri	**1.0000**	**1.0000**	**1.0000**	0.9890	**0.9760**	**0.9980**
39	Ants_Bees	VGG16-AB	CNN	153	original	image	C	T+W	LSA	0.5750	n/a	n/a	n/a	n/a	0.6560
									DSA	0.6880	n/a	n/a	n/a	n/a	0.6932
									MCP	0.7650	n/a	n/a	n/a	n/a	0.7545
									DeepGini	0.8670	n/a	n/a	n/a	n/a	0.8954
									PRIMA	0.9210	n/a	n/a	n/a	n/a	0.9391
									CertPri	**0.9450**	n/a	n/a	n/a	n/a	**0.9645**
40	Cats_Dogs	VGG19-CD	CNN	5000	original	image	C	T+W	LSA	0.4270	0.3956	0.3817	0.4061	0.5953	0.6020
									DSA	0.5867	0.5800	0.5341	0.5433	0.6977	0.7104
									MCP	0.6549	0.6433	0.6545	0.6675	0.6932	0.7231
									DeepGini	0.6930	0.7020	0.7212	0.7322	0.7947	0.8290
									PRIMA	**0.8440**	0.8240	0.7992	0.8043	0.8563	0.8783
									CertPri	0.7965	**0.8355**	**0.8287**	**0.8452**	**0.8745**	**0.9403**
41	IMDB	CNN-I	CNN	10000	original	text	C	N+W	LSA	0.3842	0.4646	0.4647	0.5413	0.5578	0.7042
									DSA	0.4390	0.5640	0.6610	0.6580	0.6560	0.7323
									MCP	0.6039	0.6944	0.7573	0.8144	0.8005	0.8040
									DeepGini	0.6375	0.7124	0.7911	0.8384	0.8201	0.8730
									PRIMA	0.6800	0.7300	**0.8012**	0.8632	0.8525	0.8799
									CertPri	**0.7343**	**0.7345**	0.7905	**0.8745**	**0.8540**	**0.9343**
42	IMDB	LSTM-I	LSTM	10000	original	text	C	N+W	LSA	0.0940	0.0880	0.0992	0.1287	0.1324	0.4542
									DSA	0.3660	0.2870	0.2383	0.2686	0.2030	0.5008
									MCP	0.3902	0.3937	0.4246	0.4438	0.4058	0.7734
									DeepGini	0.4040	0.4030	0.4350	0.4360	0.4380	0.8180
									PRIMA	0.6010	0.5590	0.5438	0.5215	0.4936	0.8023
									CertPri	**0.6902**	**0.6434**	**0.6455**	**0.6378**	**0.5953**	**0.8789**
43	Reuters	CNN-R	CNN	2246	original	text	C	N+W	LSA	0.4031	0.5120	0.4860	0.5737	0.5751	0.7534
									DSA	0.4807	0.5688	0.6680	0.6563	0.6627	0.7562
									MCP	0.6219	0.7061	0.7785	0.8574	0.8246	0.8123
									DeepGini	0.6544	0.7507	**0.8362**	0.8776	0.8289	0.9085
									PRIMA	0.7064	0.6967	0.6977	0.8085	0.8249	0.8997
									CertPri	**0.7525**	**0.7648**	0.8103	**0.8877**	**0.8628**	**0.9519**
44	Reuters	LSTM-R	LSTM	2246	original	text	C	N+W	LSA	0.2149	0.2874	0.2357	0.2939	0.2544	0.4979
									DSA	0.4053	0.2914	0.2359	0.3156	0.3105	0.5122
									MCP	0.4264	0.3904	0.4542	0.4517	0.4129	0.7746
									DeepGini	0.4384	0.4485	0.4408	0.4334	0.4470	0.8216
									PRIMA	0.5984	0.5655	0.5597	**0.6403**	0.5284	0.7991
									CertPri	**0.6959**	**0.6886**	**0.6758**	0.6384	**0.6445**	**0.8841**
45	VCTK10	LSTM-V	LSTM	400	original	speech	C	N+W	LSA	0.3570	0.2519	0.5554	n/a	n/a	0.5961
									DSA	0.3283	0.3026	0.5784	n/a	n/a	0.5283
									MCP	0.5895	0.6142	0.6954	n/a	n/a	0.7834
									DeepGini	0.6259	0.6288	0.7958	n/a	n/a	0.8594
									PRIMA	0.4142	0.4939	0.8439	n/a	n/a	**0.8789**
									CertPri	**0.7414**	**0.7684**	**0.8580**	n/a	n/a	0.8562
46	RML8PSK	LSTM-RML	LSTM	312	original	signal	R	N+W	LSA	0.3538	0.3837	0.5958	n/a	n/a	0.6367
									DSA	n/a	n/a	n/a	n/a	n/a	n/a
									MCP	n/a	n/a	n/a	n/a	n/a	n/a
									DeepGini	n/a	n/a	n/a	n/a	n/a	n/a
									PRIMA	0.7190	0.7030	0.7267	n/a	n/a	0.7553
									CertPri	**0.8219**	**0.8045**	**0.8232**	n/a	n/a	**0.8415**
47	Cora	GCN-C	GCN	1000	original	graph	C	N+W	LSA	0.3517	0.2616	0.2431	0.2246	0.5989	0.5989
									DSA	0.3284	0.2988	0.2683	0.2479	0.5278	0.5278
									MCP	0.5434	0.5847	0.5984	0.5045	0.7473	0.7473
									DeepGini	0.6274	0.6033	0.5879	0.5683	**0.8484**	**0.8484**
									PRIMA	0.4232	0.4517	0.5058	0.4953	0.6462	0.6462
									CertPri	**0.7473**	**0.7379**	**0.7097**	**0.6965**	0.8465	0.8465

48	Adult	LFCN-A	FCN	10000	original	structured	C	N+W	LSA	0.4643	0.4955	0.5049	0.5455	0.4985	0.6555
									DSA	0.5165	0.5244	0.5245	0.5233	0.5389	0.7548
									MCP	0.5947	0.5768	0.5648	0.5049	0.5548	0.7857
									DeepGini	0.5453	0.5837	0.5729	0.5309	0.5578	0.7971
									PRIMA	**0.6039**	0.5839	0.5937	0.5638	0.5540	0.7879
									CertPri	0.5956	**0.6065**	**0.6025**	**0.5907**	**0.5877**	**0.8033**
49	COMPAS	HFCN-C	FCN	1000	original	structured	C	N+W	LSA	0.4841	0.5131	0.5122	0.5571	0.6564	0.6564
									DSA	0.5379	0.5495	0.5396	0.5158	0.7630	0.7630
									MCP	0.5692	0.5753	0.5669	0.4909	0.7594	0.7594
									DeepGini	0.5216	0.5883	0.5497	0.5425	0.8072	0.8072
									PRIMA	**0.5868**	0.6017	0.5722	0.5348	0.7844	0.7844
									CertPri	0.5727	**0.6271**	**0.5928**	**0.6057**	**0.8245**	**0.8245**
50	Boston	FCN-B	FCN	102	original	structured	R	N+W	LSA	0.6560	n/a	n/a	n/a	n/a	0.6734
									DSA	n/a	n/a	n/a	n/a	n/a	n/a
									MCP	n/a	n/a	n/a	n/a	n/a	n/a
									DeepGini	n/a	n/a	n/a	n/a	n/a	n/a
									PRIMA	0.7873	n/a	n/a	n/a	n/a	0.7726
									CertPri	**0.8547**	n/a	n/a	n/a	n/a	**0.8633**

D.2 Repeat 2nd

ID	Datasets	Models	Struc.	#Inputs	Types	Forms	Tas.	Sce.	Methods	RAUC-100	RAUC-200	RAUC-300	RAUC-500	RAUC-1000	RAUC-all
1	CIFAR10	ResNet50	CNN	10000	original	image	C	N+W	LSA	0.3822	0.2958	0.2376	0.2310	0.2425	0.6388
									DSA	0.3577	0.3406	0.2896	0.2838	0.2602	0.6445
									MCP	0.3831	0.3638	0.3402	0.4483	0.4575	0.7871
									DeepGini	0.6726	0.6186	0.6188	0.5964	0.5680	0.8055
									PRIMA	0.8272	0.8160	0.7623	0.7747	0.6962	0.9219
									CertPri	0.8485	0.8255	0.8013	0.7600	0.7170	0.9073
2	CIFAR10	ResNet50	CNN	10000	original	image	C	N+B	LSA	n/a	n/a	n/a	n/a	n/a	n/a
									DSA	n/a	n/a	n/a	n/a	n/a	n/a
									MCP	0.3831	0.3638	0.3402	0.4483	0.4575	0.7871
									DeepGini	0.6726	0.6186	0.6188	0.5964	0.5680	0.8055
									PRIMA	0.4402	0.4337	0.4279	0.3886	0.4114	0.7013
									CertPri	0.8674	0.7932	0.7938	0.7598	0.7236	0.8846
3	CIFAR10	ResNet50	CNN	10000	+BIM	image	C	N+W	LSA	0.7726	0.7525	0.7471	0.7199	0.6749	0.7430
									DSA	0.8171	0.8321	0.8083	0.8001	0.7809	0.7308
									MCP	0.8532	0.8171	0.8236	0.8161	0.7926	0.7004
									DeepGini	0.9541	0.9478	0.9365	0.9521	0.9130	0.9136
									PRIMA	1.0000	1.0000	0.9950	0.9867	0.9501	0.9263
									CertPri	0.9806	0.9875	0.9780	0.9633	0.9554	0.9488
4	CIFAR10	ResNet50	CNN	10000	+C&W	image	C	N+W	LSA	0.8680	0.8088	0.8001	0.7798	0.7601	0.7693
									DSA	0.8966	0.8570	0.8394	0.8022	0.7749	0.7711
									MCP	0.6171	0.7665	0.7506	0.7624	0.7211	0.7843
									DeepGini	0.8757	0.8683	0.9059	0.8892	0.8807	0.8916
									PRIMA	1.0000	1.0000	0.9672	0.9482	0.9506	0.9650
									CertPri	0.9858	0.9925	0.9893	0.9586	0.9451	0.9774
5	CIFAR10	ResNet50	CNN	10000	FineFool	image	C	N+W	LSA	0.8229	0.8204	0.7700	0.7607	0.7594	0.7941
									DSA	0.8557	0.8021	0.8032	0.7667	0.7604	0.7528
									MCP	0.8509	0.8533	0.8673	0.8322	0.8278	0.8515
									DeepGini	0.8895	0.8780	0.8806	0.8809	0.8697	0.8861
									PRIMA	0.9102	0.9266	0.9466	0.9384	0.9547	0.9291
									CertPri	0.9430	0.9638	0.9774	0.9844	0.9730	0.9869
6	CIFAR10	ResNet50	CNN	10000	+AdapS	image	C	N+W	LSA	0.2594	0.1431	0.1287	0.1136	0.1192	0.3498
									DSA	0.2223	0.1539	0.1743	0.1492	0.1215	0.3380
									MCP	0.2276	0.2581	0.2255	0.3559	0.3416	0.6623
									DeepGini	0.5551	0.4651	0.4728	0.4961	0.4629	0.6653
									PRIMA	0.5404	0.5353	0.4963	0.5135	0.4157	0.6002
									CertPri	0.8707	0.8283	0.8027	0.7578	0.7340	0.9044
7	CIFAR10	ResNet50	CNN	10000	+AdapC	image	C	N+W	LSA	0.2921	0.2145	0.1887	0.1925	0.1345	0.5393
									DSA	0.3045	0.2859	0.2565	0.2214	0.1799	0.5533
									MCP	0.1224	0.1327	0.1251	0.1385	0.1688	0.3001
									DeepGini	0.1604	0.1274	0.1307	0.1941	0.1579	0.2960
									PRIMA	0.6228	0.5543	0.5774	0.5379	0.4712	0.6762
									CertPri	0.8444	0.8326	0.8062	0.7346	0.7238	0.9020
8	CIFAR10	ResNet50	CNN	10000	+AdapM	image	C	N+W	LSA	0.2167	0.1132	0.1614	0.0940	0.1119	0.4787
									DSA	0.1873	0.1863	0.1398	0.1335	0.1296	0.4570
									MCP	0.2354	0.2234	0.2255	0.3082	0.3277	0.6522
									DeepGini	0.5240	0.5037	0.5138	0.5065	0.4288	0.6598
									PRIMA	0.3728	0.3404	0.3349	0.3825	0.3275	0.4409
									CertPri	0.8600	0.8279	0.7787	0.7618	0.7202	0.9079
9	CIFAR10	VGG16	CNN	10000	original	image	C	N+W	LSA	0.3906	0.2829	0.2548	0.2697	0.2556	0.6187
									DSA	0.3432	0.2852	0.2877	0.2883	0.2734	0.6489
									MCP	0.3372	0.3664	0.3748	0.4290	0.4443	0.7744
									DeepGini	0.6455	0.5947	0.6367	0.6050	0.5738	0.8304
									PRIMA	0.8336	0.7921	0.7460	0.7322	0.7008	0.8962
									CertPri	0.8602	0.8641	0.7650	0.7460	0.7024	0.9186
10	CIFAR10	VGG16	CNN	10000	original	image	C	N+B	LSA	n/a	n/a	n/a	n/a	n/a	n/a
									DSA	n/a	n/a	n/a	n/a	n/a	n/a
									MCP	0.3372	0.3664	0.3748	0.4290	0.4443	0.7744
									DeepGini	0.6455	0.5947	0.6367	0.6050	0.5738	0.8304
									PRIMA	0.4541	0.4161	0.4556	0.4112	0.4090	0.6907
									CertPri	0.8848	0.8029	0.8029	0.7370	0.7265	0.8877
11	CIFAR10	VGG16	CNN	10000	+BIM	image	C	N+W	LSA	0.7484	0.7209	0.7152	0.6691	0.7078	0.7686
									DSA	0.8336	0.8089	0.8530	0.7772	0.7797	0.7630
									MCP	0.8420	0.8136	0.8195	0.7662	0.7629	0.6703
									DeepGini	0.9792	0.9782	0.9724	0.9386	0.9519	0.8929
									PRIMA	0.9962	0.9822	0.9676	0.9407	0.9987	0.9370
									CertPri	0.9798	0.9427	0.9012	0.9089	0.9558	0.9522
12	CIFAR10	VGG16	CNN	10000	+C&W	image	C	N+W	LSA	0.8507	0.8537	0.8248	0.7978	0.7438	0.7887
									DSA	0.8888	0.8593	0.8327	0.7797	0.8131	0.7627
									MCP	0.6120	0.7543	0.7488	0.7234	0.7406	0.7639
									DeepGini	0.9055	0.9133	0.8939	0.8671	0.9123	0.9170
									PRIMA	0.9930	0.9787	0.9089	0.9500	0.9174	0.9429
									CertPri	0.9337	0.9575	0.9783	0.9377	0.9499	0.9577
13	CIFAR10	VGG16	CNN	10000	FineFool	image	C	N+W	LSA	0.8196	0.8078	0.7816	0.7607	0.7380	0.7411
									DSA	0.8443	0.8291	0.8043	0.7686	0.7677	0.7491
									MCP	0.8316	0.8534	0.8878	0.8113	0.8378	0.8345
									DeepGini	0.8788	0.8905	0.8639	0.8592	0.8574	0.8870
									PRIMA	0.9468	0.9473	0.9842	0.9704	0.9418	0.9542
									CertPri	0.9485	0.9764	0.9646	0.8929	0.9933	0.9725
14	CIFAR10	VGG16	CNN	10000	+AdapS	image	C	N+W	LSA	0.2589	0.1546	0.1152	0.0882	0.1039	0.3402
									DSA	0.1977	0.1604	0.1863	0.1716	0.0795	0.3549
									MCP	0.2215	0.2602	0.2279	0.3699	0.3439	0.6710
									DeepGini	0.5532	0.4536	0.4821	0.4622	0.4843	0.6731
									PRIMA	0.5420	0.5567	0.4484	0.5395	0.4448	0.6238
									CertPri	0.8654	0.8261	0.8141	0.7759	0.7450	0.9006
15	CIFAR10	VGG16	CNN	10000	+AdapC	image	C	N+W	LSA	0.3479	0.2339	0.2081	0.2086	0.1413	0.5490
									DSA	0.3071	0.2820	0.2436	0.2005	0.2121	0.5649
									MCP	0.1156	0.1610	0.1396	0.1316	0.1323	0.2824
									DeepGini	0.1526	0.1738	0.1095	0.1911	0.1584	0.2660
									PRIMA	0.6345	0.5929	0.5447	0.5112	0.4587	0.6982
									CertPri	0.8381	0.8097	0.7928	0.7428	0.7484	0.9180
									LSA	0.2331	0.1145	0.1593	0.0915	0.1129	0.4442
									DSA	0.1918	0.1619	0.1083	0.1245	0.0912	0.4718

16	CIFAR10	VGG16	CNN	10000	+AdapM	image	C	N+W	MCP	0.2616	0.1914	0.2270	0.2876	0.3170	0.6602
									DeepGini	0.5615	0.5181	0.4997	0.4808	0.4588	0.6795
									PRIMA	0.3769	0.3606	0.3774	0.3541	0.2996	0.4371
									CertPri	0.8741	0.8139	0.7712	0.7602	0.6842	0.9146
17	ImageNet	ResNet101	CNN	5000	original	image	C	N+W	LSA	0.3560	0.3035	0.2564	0.2176	0.2099	0.6214
									DSA	0.3398	0.3280	0.2752	0.2575	0.2684	0.6320
									MCP	0.3439	0.3570	0.3453	0.4201	0.4307	0.7944
									DeepGini	0.6569	0.5963	0.5657	0.5723	0.5382	0.7830
									PRIMA	0.7038	0.6852	0.7193	0.5969	0.5835	0.7962
									CertPri	0.7414	0.7451	0.6732	0.6441	0.6182	0.8292
18	ImageNet	ResNet101	CNN	5000	original	image	C	N+B	LSA	n/a	n/a	n/a	n/a	n/a	n/a
									DSA	n/a	n/a	n/a	n/a	n/a	n/a
									MCP	0.3439	0.3570	0.3453	0.4201	0.4307	0.7944
									DeepGini	0.6569	0.5963	0.5657	0.5723	0.5382	0.7830
									PRIMA	0.3592	0.5451	0.3842	0.3989	0.4065	0.5643
									CertPri	0.7630	0.7643	0.6454	0.6343	0.5847	0.8567
19	ImageNet	ResNet101	CNN	5000	+BIM	image	C	N+W	LSA	0.6206	0.6158	0.5773	0.4551	0.4253	0.4998
									DSA	0.5907	0.5656	0.5769	0.5565	0.5290	0.4805
									MCP	0.5598	0.7153	0.5626	0.6809	0.6695	0.4155
									DeepGini	0.8325	0.6684	0.8084	0.6801	0.6296	0.6333
									PRIMA	0.8532	0.7267	0.9019	0.6573	0.8581	0.6281
									CertPri	0.8436	0.8152	0.8512	0.9358	0.8297	0.9117
20	ImageNet	ResNet101	CNN	5000	+C&W	image	C	N+W	LSA	0.6269	0.5886	0.6371	0.6263	0.6030	0.6137
									DSA	0.6238	0.6993	0.7199	0.5652	0.5423	0.5489
									MCP	0.5097	0.6293	0.6106	0.4843	0.4658	0.6853
									DeepGini	0.5971	0.6024	0.6181	0.6054	0.6141	0.7699
									PRIMA	0.9149	0.8633	0.8199	0.8459	0.8504	0.6598
									CertPri	0.9459	0.9138	0.8169	0.7988	0.8367	0.9232
21	ImageNet	ResNet101	CNN	5000	FineFool	image	C	N+W	LSA	0.5680	0.5543	0.5424	0.6107	0.6245	0.5270
									DSA	0.6947	0.5399	0.6489	0.6291	0.6055	0.5074
									MCP	0.5872	0.5711	0.7502	0.5681	0.5597	0.5757
									DeepGini	0.7886	0.7726	0.6070	0.5989	0.6042	0.5997
									PRIMA	0.8404	0.8321	0.8280	0.8228	0.6534	0.6327
									CertPri	0.8552	0.9157	0.9529	0.8196	0.9287	0.9333
22	ImageNet	ResNet101	CNN	5000	+AdapS	image	C	N+W	LSA	0.2459	0.0712	0.1257	0.0236	0.1990	0.3103
									DSA	0.1611	0.1501	0.2566	0.1730	0.0566	0.3130
									MCP	0.2028	0.3239	0.3019	0.3564	0.4290	0.5797
									DeepGini	0.5591	0.5613	0.4113	0.3926	0.4129	0.6892
									PRIMA	0.5087	0.5310	0.4267	0.4982	0.3299	0.4936
									CertPri	0.7207	0.7990	0.6898	0.5855	0.6493	0.8451
23	ImageNet	ResNet101	CNN	5000	+AdapC	image	C	N+W	LSA	0.3040	0.2366	0.1759	0.2037	0.1335	0.4968
									DSA	0.2971	0.3108	0.2218	0.2226	0.2382	0.5122
									MCP	0.0485	0.1095	0.1965	0.0432	0.1236	0.3381
									DeepGini	0.1341	0.0895	0.1487	0.1221	0.2067	0.2324
									PRIMA	0.6183	0.6221	0.6038	0.5427	0.4208	0.7017
									CertPri	0.8314	0.7847	0.7329	0.6982	0.6714	0.8470
24	ImageNet	ResNet101	CNN	5000	+AdapM	image	C	N+W	LSA	0.2050	0.1445	0.1878	0.0946	0.1112	0.4586
									DSA	0.1376	0.1582	0.1280	0.1416	0.1346	0.4847
									MCP	0.2763	0.2305	0.1951	0.2889	0.3669	0.7121
									DeepGini	0.5734	0.4712	0.4781	0.4841	0.4138	0.6235
									PRIMA	0.3217	0.3759	0.3475	0.3537	0.2998	0.3896
									CertPri	0.8060	0.7525	0.7109	0.6698	0.6434	0.8204
25	ImageNet	VGG19	CNN	5000	original	image	C	N+W	LSA	0.3689	0.2914	0.2596	0.2180	0.2275	0.6464
									DSA	0.3058	0.3092	0.2881	0.2296	0.2556	0.6159
									MCP	0.3338	0.3649	0.3060	0.4557	0.4366	0.7886
									DeepGini	0.6535	0.6078	0.5467	0.5391	0.5529	0.7534
									PRIMA	Out of Time	Out of Time	Out of Time	Out of Time	Out of Time	Out of Time
									CertPri	0.7575	0.7519	0.6677	0.6729	0.5982	0.8309
26	ImageNet	VGG19	CNN	5000	original	image	C	N+B	LSA	n/a	n/a	n/a	n/a	n/a	n/a
									DSA	n/a	n/a	n/a	n/a	n/a	n/a
									MCP	0.3338	0.3649	0.3060	0.4557	0.4366	0.7886
									DeepGini	0.6535	0.6078	0.5467	0.5391	0.5529	0.7534
									PRIMA	Out of Time	Out of Time	Out of Time	Out of Time	Out of Time	Out of Time
									CertPri	0.7517	0.7479	0.6795	0.6272	0.5698	0.8654
27	ImageNet	VGG19	CNN	5000	+BIM	image	C	N+W	LSA	0.6344	0.5880	0.5863	0.4933	0.4238	0.4991
									DSA	0.5756	0.5897	0.6008	0.5618	0.5309	0.4771
									MCP	0.5893	0.7084	0.5606	0.7078	0.6587	0.4337
									DeepGini	0.8197	0.6755	0.8151	0.6825	0.6142	0.6429
									PRIMA	Out of Time	Out of Time	Out of Time	Out of Time	Out of Time	Out of Time
									CertPri	0.8559	0.8457	0.8544	0.9428	0.8409	0.8803
28	ImageNet	VGG19	CNN	5000	+C&W	image	C	N+W	LSA	0.5981	0.5814	0.6559	0.6355	0.6191	0.6377
									DSA	0.6530	0.7077	0.6925	0.5758	0.5201	0.5401
									MCP	0.5154	0.6350	0.6016	0.4663	0.4329	0.6340
									DeepGini	0.5856	0.5800	0.6029	0.5801	0.6357	0.7567
									PRIMA	Out of Time	Out of Time	Out of Time	Out of Time	Out of Time	Out of Time
									CertPri	0.9555	0.9140	0.7988	0.8303	0.8610	0.9154
29	ImageNet	VGG19	CNN	5000	FineFool	image	C	N+W	LSA	0.5356	0.5740	0.5393	0.6017	0.6456	0.5099
									DSA	0.7154	0.5737	0.6671	0.6392	0.6123	0.5516
									MCP	0.5561	0.5618	0.7634	0.5554	0.5619	0.5424
									DeepGini	0.7530	0.7763	0.6182	0.5881	0.6022	0.6081
									PRIMA	Out of Time	Out of Time	Out of Time	Out of Time	Out of Time	Out of Time
									CertPri	0.8299	0.9111	0.9263	0.8081	0.9562	0.9307
30	ImageNet	VGG19	CNN	5000	+AdapS	image	C	N+W	LSA	0.2342	0.0829	0.1360	0.0338	0.1991	0.2977
									DSA	0.1730	0.1096	0.2543	0.1700	0.0683	0.2937
									MCP	0.2089	0.3014	0.3133	0.3826	0.3999	0.5948
									DeepGini	0.6041	0.5316	0.4079	0.3945	0.4360	0.6905
									PRIMA	Out of Time	Out of Time	Out of Time	Out of Time	Out of Time	Out of Time
									CertPri	0.7405	0.7914	0.6597	0.5986	0.6752	0.8498
31	ImageNet	VGG19	CNN	5000	+AdapC	image	C	N+W	LSA	0.2716	0.2288	0.1668	0.2326	0.1008	0.4785
									DSA	0.3169	0.3257	0.2220	0.2598	0.2538	0.5323
									MCP	0.0355	0.0996	0.1931	0.0035	0.1572	0.3410
									DeepGini	0.1268	0.0698	0.1822	0.1431	0.2029	0.2678
									PRIMA	Out of Time	Out of Time	Out of Time	Out of Time	Out of Time	Out of Time
									CertPri	0.8085	0.7824	0.7425	0.7127	0.6843	0.8884
									LSA	0.1796	0.1356	0.2017	0.0563	0.0968	0.4758

32	ImageNet	VGG19	CNN	5000	+AdapM	image	C	N+W	DSA	0.1524	0.1575	0.1319	0.1424	0.1379	0.5107
									MCP	0.2768	0.2077	0.2010	0.2907	0.3757	0.6899
									DeepGini	0.5677	0.4784	0.4731	0.4728	0.4147	0.6674
									PRIMA	Out of Time	Out of Time	Out of Time	Out of Time	Out of Time	Out of Time
									CertPri	0.8040	0.7841	0.7214	0.6514	0.6951	0.8261
33	DrivingSA	VGG19-AD	CNN	5279	original	image	R	N+W	LSA	0.3574	0.3722	0.3988	0.4387	0.4622	0.6675
									DSA	n/a	n/a	n/a	n/a	n/a	n/a
									MCP	n/a	n/a	n/a	n/a	n/a	n/a
									DeepGini	n/a	n/a	n/a	n/a	n/a	n/a
									PRIMA	0.8097	0.7863	0.7865	0.7526	0.7127	0.7647
									CertPri	0.7949	0.8313	0.8393	0.8286	0.8145	0.8425
34	DrivingSA	VGG19-AD	CNN	5279	original	image	R	N+B	LSA	n/a	n/a	n/a	n/a	n/a	n/a
									DSA	n/a	n/a	n/a	n/a	n/a	n/a
									MCP	n/a	n/a	n/a	n/a	n/a	n/a
									DeepGini	n/a	n/a	n/a	n/a	n/a	n/a
									PRIMA	0.4083	0.4013	0.3568	0.3575	0.3393	0.3918
									CertPri	0.7915	0.8380	0.7905	0.8104	0.8154	0.8619
35	DrivingSA	VGG19-AD	CNN	5279	patch	image	R	N+W	LSA	0.3310	0.3331	0.3784	0.3544	0.4617	0.6989
									DSA	n/a	n/a	n/a	n/a	n/a	n/a
									MCP	n/a	n/a	n/a	n/a	n/a	n/a
									DeepGini	n/a	n/a	n/a	n/a	n/a	n/a
									PRIMA	0.8000	0.8065	0.7964	0.7775	0.7305	0.7862
									CertPri	0.8404	0.8091	0.8446	0.8650	0.8127	0.8541
36	DrivingSA	VGG19-AD	CNN	5279	aturation	image	R	N+W	LSA	0.4425	0.4324	0.4524	0.4651	0.4678	0.6502
									DSA	n/a	n/a	n/a	n/a	n/a	n/a
									MCP	n/a	n/a	n/a	n/a	n/a	n/a
									DeepGini	n/a	n/a	n/a	n/a	n/a	n/a
									PRIMA	0.7666	0.7886	0.7928	0.7867	0.8530	0.8769
									CertPri	0.7877	0.8029	0.7979	0.8144	0.7806	0.8680
37	FMNIST	AlexNet	CNN	10000	original	image	C	N+W	LSA	0.3711	0.4638	0.4948	0.6480	0.8094	0.9399
									DSA	0.4849	0.5283	0.6084	0.7291	0.8295	0.9665
									MCP	0.4712	0.5875	0.6755	0.7300	0.8369	0.8936
									DeepGini	0.4901	0.5981	0.6743	0.7812	0.8599	0.9418
									PRIMA	0.4812	0.5352	0.5826	0.7453	0.8404	0.9381
									CertPri	0.4904	0.6120	0.6847	0.7981	0.8261	0.9840
38	FMNIST_P	AlexNet-P	CNN	10000	original	image	C	P+W	LSA	0.4696	0.4077	0.3718	0.3366	0.2962	0.5792
									DSA	0.5872	0.4809	0.4634	0.3994	0.3908	0.6095
									MCP	0.4373	0.4768	0.4719	0.4687	0.4187	0.5287
									DeepGini	0.5062	0.4889	0.4460	0.4837	0.3767	0.5341
									PRIMA	0.9896	0.9955	0.9879	0.9746	0.9423	0.9795
									CertPri	0.9100	0.9829	0.9934	0.9627	0.9779	0.9834
39	Ants_Bees	VGG16-AB	CNN	153	original	image	C	T+W	LSA	0.5869	n/a	n/a	n/a	n/a	0.6737
									DSA	0.7042	n/a	n/a	n/a	n/a	0.7029
									MCP	0.7756	n/a	n/a	n/a	n/a	0.7409
									DeepGini	0.8652	n/a	n/a	n/a	n/a	0.8989
									PRIMA	0.9052	n/a	n/a	n/a	n/a	0.9262
									CertPri	0.9515	n/a	n/a	n/a	n/a	0.9647
40	Cats_Dogs	VGG19-CD	CNN	5000	original	image	C	T+W	LSA	0.4176	0.4110	0.3956	0.3881	0.5824	0.5903
									DSA	0.6027	0.5732	0.5425	0.5324	0.7146	0.7191
									MCP	0.6535	0.6389	0.6397	0.6760	0.6802	0.7074
									DeepGini	0.6929	0.7007	0.7307	0.7149	0.7856	0.8318
									PRIMA	0.8414	0.8183	0.8130	0.8168	0.8732	0.8656
									CertPri	0.7900	0.8347	0.8365	0.8399	0.8808	0.9354
41	IMDB	CNN-I	CNN	10000	original	text	C	N+W	LSA	0.3888	0.4617	0.4678	0.5449	0.5706	0.7150
									DSA	0.4296	0.5566	0.6635	0.6417	0.6448	0.7148
									MCP	0.5883	0.6864	0.7501	0.8316	0.8044	0.8060
									DeepGini	0.6357	0.6969	0.7767	0.8439	0.8058	0.8713
									PRIMA	0.6764	0.7371	0.8010	0.8747	0.8698	0.8818
									CertPri	0.7168	0.7207	0.7838	0.8857	0.8445	0.9206
42	IMDB	LSTM-I	LSTM	10000	original	text	C	N+W	LSA	0.0812	0.0863	0.0843	0.1210	0.1450	0.4653
									DSA	0.3810	0.2762	0.2232	0.2607	0.1961	0.5132
									MCP	0.4032	0.3891	0.4254	0.4331	0.3890	0.7591
									DeepGini	0.4044	0.3986	0.4224	0.4461	0.4259	0.8326
									PRIMA	0.5894	0.5641	0.5612	0.5213	0.4894	0.8116
									CertPri	0.6789	0.6573	0.6618	0.6355	0.6115	0.8795
43	Reuters	CNN-R	CNN	2246	original	text	C	N+W	LSA	0.4000	0.5151	0.4789	0.5860	0.5880	0.7355
									DSA	0.4730	0.5643	0.6786	0.6481	0.6494	0.7671
									MCP	0.6394	0.7052	0.7902	0.8665	0.8133	0.7960
									DeepGini	0.6457	0.7411	0.8217	0.8827	0.8278	0.8932
									PRIMA	0.7168	0.7146	0.7110	0.7913	0.8306	0.9141
									CertPri	0.7650	0.7501	0.8142	0.8856	0.8664	0.9636
44	Reuters	LSTM-R	LSTM	2246	original	text	C	N+W	LSA	0.2119	0.2883	0.2477	0.3067	0.2372	0.4963
									DSA	0.4136	0.3023	0.2391	0.3327	0.3119	0.5022
									MCP	0.4365	0.3753	0.4380	0.4681	0.4232	0.7913
									DeepGini	0.4564	0.4437	0.4236	0.4178	0.4563	0.8126
									PRIMA	0.5807	0.5779	0.5471	0.6374	0.5360	0.8070
									CertPri	0.6837	0.7033	0.6633	0.6537	0.6342	0.8711
45	VCTK10	LSTM-V	LSTM	400	original	speech	C	N+W	LSA	0.3747	0.2616	0.5394	n/a	n/a	0.6116
									DSA	0.3204	0.2992	0.5680	n/a	n/a	0.5124
									MCP	0.5826	0.6289	0.7111	n/a	n/a	0.7766
									DeepGini	0.6093	0.6132	0.7990	n/a	n/a	0.8460
									PRIMA	0.4187	0.5013	0.8467	n/a	n/a	0.8823
									CertPri	0.7432	0.7537	0.8625	n/a	n/a	0.8445
46	RML8PSK	LSTM-RML	LSTM	312	original	signal	R	N+W	LSA	0.3362	0.3674	0.5890	n/a	n/a	0.6374
									DSA	n/a	n/a	n/a	n/a	n/a	n/a
									MCP	n/a	n/a	n/a	n/a	n/a	n/a
									DeepGini	n/a	n/a	n/a	n/a	n/a	n/a
									PRIMA	0.7160	0.7092	0.7326	n/a	n/a	0.7427
									CertPri	0.8306	0.7980	0.8134	n/a	n/a	0.8301
47	Cora	GCN-C	GCN	1000	original	graph	C	N+W	LSA	0.3362	0.2445	0.2586	0.2207	0.6126	0.6126
									DSA	0.3293	0.2969	0.2514	0.2632	0.5104	0.5104
									MCP	0.5520	0.5958	0.5854	0.4906	0.7514	0.7514
									DeepGini	0.6230	0.6074	0.5909	0.5787	0.8359	0.8359
									PRIMA	0.4159	0.4438	0.5226	0.5002	0.6588	0.6588
									CertPri	0.7647	0.7462	0.7087	0.6919	0.8350	0.8350

48	Adult	LFCN-A	FCN	10000	original	structured	C	N+W	LSA	0.4482	0.5056	0.5142	0.5484	0.4861	0.6385
									DSA	0.5050	0.5400	0.5393	0.5153	0.5390	0.7719
									MCP	0.5934	0.5621	0.5808	0.4983	0.5612	0.7711
									DeepGini	0.5407	0.5677	0.5764	0.5361	0.5490	0.8036
									PRIMA	0.6022	0.5762	0.5967	0.5711	0.5675	0.7931
									CertPri	0.5811	0.6125	0.6126	0.6083	0.5733	0.7884
49	COMPAS	HFCN-C	FCN	1000	original	structured	C	N+W	LSA	0.4952	0.5181	0.4969	0.5442	0.6540	0.6540
									DSA	0.5456	0.5431	0.5325	0.5193	0.7579	0.7579
									MCP	0.5605	0.5858	0.5838	0.4983	0.7494	0.7494
									DeepGini	0.5040	0.5901	0.5621	0.5594	0.8249	0.8249
									PRIMA	0.5809	0.6042	0.5626	0.5183	0.7935	0.7935
									CertPri	0.5681	0.6444	0.5964	0.6024	0.8406	0.8406
50	Boston	FCN-B	FCN	102	original	structured	R	N+W	LSA	0.6730	n/a	n/a	n/a	n/a	0.6904
									DSA	n/a	n/a	n/a	n/a	n/a	n/a
									MCP	n/a	n/a	n/a	n/a	n/a	n/a
									DeepGini	n/a	n/a	n/a	n/a	n/a	n/a
									PRIMA	0.7745	n/a	n/a	n/a	n/a	0.7873
									CertPri	0.8713	n/a	n/a	n/a	n/a	0.8598

D.3 Repeat 3rd

ID	Datasets	Models	Struc.	#Inputs	Types	Forms	Tas.	Sce.	Methods	RAUC-100	RAUC-200	RAUC-300	RAUC-500	RAUC-1000	RAUC-all
1	CIFAR10	ResNet50	CNN	10000	original	image	C	N+W	LSA	0.4022	0.3090	0.2597	0.2363	0.2521	0.6376
									DSA	0.3605	0.3370	0.3075	0.2770	0.2581	0.6416
									MCP	0.3576	0.3521	0.3479	0.4532	0.4250	0.8065
									DeepGini	0.6672	0.6194	0.6228	0.6141	0.5744	0.8060
									PRIMA	0.8458	0.8068	0.7725	0.7577	0.7049	0.9396
									CertPri	0.8681	0.8118	0.7976	0.7618	0.7403	0.9119
2	CIFAR10	ResNet50	CNN	10000	original	image	C	N+B	LSA	n/a	n/a	n/a	n/a	n/a	n/a
									DSA	n/a	n/a	n/a	n/a	n/a	n/a
									MCP	0.3576	0.3521	0.3479	0.4532	0.4250	0.8065
									DeepGini	0.6672	0.6194	0.6228	0.6141	0.5744	0.8060
									PRIMA	0.4557	0.4329	0.4183	0.4181	0.4324	0.7228
									CertPri	0.8705	0.7995	0.8031	0.7592	0.7484	0.8909
3	CIFAR10	ResNet50	CNN	10000	+BIM	image	C	N+W	LSA	0.7599	0.7637	0.7239	0.6974	0.6758	0.7535
									DSA	0.8074	0.8375	0.8193	0.7956	0.7557	0.7485
									MCP	0.8703	0.8189	0.8250	0.8015	0.7815	0.6775
									DeepGini	0.9446	0.9345	0.9387	0.9545	0.9369	0.8980
									PRIMA	1.0000	1.0000	0.9969	0.9596	0.9475	0.9380
									CertPri	1.0000	0.9641	0.9762	0.9792	0.9574	0.9650
4	CIFAR10	ResNet50	CNN	10000	+C&W	image	C	N+W	LSA	0.8781	0.8119	0.7911	0.7709	0.7595	0.7782
									DSA	0.8762	0.8665	0.8482	0.8267	0.7743	0.7792
									MCP	0.6511	0.7665	0.7603	0.7386	0.7298	0.7977
									DeepGini	0.8820	0.8718	0.8895	0.8736	0.8949	0.8829
									PRIMA	1.0000	1.0000	0.9676	0.9333	0.9557	0.9708
									CertPri	0.9969	0.9734	0.9876	0.9684	0.9608	0.9916
5	CIFAR10	ResNet50	CNN	10000	FineFool	image	C	N+W	LSA	0.8386	0.8099	0.8025	0.7280	0.7453	0.7665
									DSA	0.8349	0.7875	0.7906	0.7697	0.7428	0.7650
									MCP	0.8513	0.8524	0.8664	0.8531	0.8336	0.8480
									DeepGini	0.8969	0.8787	0.8967	0.8714	0.8636	0.8943
									PRIMA	0.9360	0.9396	0.9298	0.9541	0.9551	0.9402
									CertPri	0.9516	0.9473	0.9898	0.9948	0.9969	0.9982
6	CIFAR10	ResNet50	CNN	10000	+AdapS	image	C	N+W	LSA	0.2490	0.1373	0.1096	0.1116	0.1193	0.3667
									DSA	0.2238	0.1461	0.1934	0.1577	0.1001	0.3543
									MCP	0.2181	0.2438	0.2419	0.3279	0.3143	0.6756
									DeepGini	0.5465	0.4871	0.4730	0.4867	0.4708	0.6615
									PRIMA	0.5410	0.5378	0.4685	0.5295	0.4183	0.6160
									CertPri	0.8712	0.8144	0.7995	0.7358	0.7068	0.9179
7	CIFAR10	ResNet50	CNN	10000	+AdapC	image	C	N+W	LSA	0.3187	0.2048	0.1820	0.2003	0.1627	0.5628
									DSA	0.2986	0.2681	0.2506	0.2126	0.1753	0.5844
									MCP	0.1226	0.1403	0.1385	0.1420	0.1554	0.2769
									DeepGini	0.1712	0.1545	0.1300	0.1721	0.1712	0.3127
									PRIMA	0.6120	0.5686	0.5528	0.5327	0.4571	0.7077
									CertPri	0.8632	0.8074	0.8041	0.7651	0.7016	0.9094
8	CIFAR10	ResNet50	CNN	10000	+AdapM	image	C	N+W	LSA	0.1892	0.0950	0.1649	0.1019	0.1156	0.4749
									DSA	0.1918	0.1748	0.1194	0.1144	0.1081	0.4743
									MCP	0.2555	0.2111	0.2363	0.2897	0.3304	0.6601
									DeepGini	0.5314	0.4974	0.5212	0.5018	0.4474	0.6608
									PRIMA	0.3567	0.3746	0.3476	0.3745	0.3109	0.4336
									CertPri	0.8462	0.8078	0.7916	0.7418	0.7207	0.9183
9	CIFAR10	VGG16	CNN	10000	original	image	C	N+W	LSA	0.3869	0.2912	0.2394	0.2691	0.2259	0.6170
									DSA	0.3489	0.3000	0.2828	0.2814	0.2648	0.6304
									MCP	0.3618	0.3937	0.3782	0.4209	0.4647	0.7925
									DeepGini	0.6470	0.6126	0.6444	0.5835	0.5721	0.8416
									PRIMA	0.8262	0.7782	0.7550	0.7430	0.7079	0.9007
									CertPri	0.8614	0.8323	0.7831	0.7584	0.6991	0.9179
10	CIFAR10	VGG16	CNN	10000	original	image	C	N+B	LSA	n/a	n/a	n/a	n/a	n/a	n/a
									DSA	n/a	n/a	n/a	n/a	n/a	n/a
									MCP	0.3618	0.3937	0.3782	0.4209	0.4647	0.7925
									DeepGini	0.6470	0.6126	0.6444	0.5835	0.5721	0.8416
									PRIMA	0.4791	0.4451	0.4483	0.4274	0.3978	0.6917
									CertPri	0.8845	0.7759	0.7987	0.7553	0.7115	0.8673
11	CIFAR10	VGG16	CNN	10000	+BIM	image	C	N+W	LSA	0.7626	0.7226	0.7031	0.6615	0.7132	0.7646
									DSA	0.8434	0.8099	0.8471	0.7899	0.7855	0.7776
									MCP	0.8606	0.8262	0.8244	0.7661	0.7751	0.6565
									DeepGini	0.9827	0.9783	0.9448	0.9352	0.9192	0.8908
									PRIMA	1.0000	0.9898	0.9635	0.9385	0.9892	0.9388
									CertPri	0.9647	0.9507	0.9265	0.9200	0.9644	0.9672
12	CIFAR10	VGG16	CNN	10000	+C&W	image	C	N+W	LSA	0.8404	0.8487	0.8214	0.7768	0.7520	0.7880
									DSA	0.8668	0.8616	0.8430	0.8032	0.8174	0.7766
									MCP	0.5987	0.7491	0.7194	0.7388	0.7103	0.7621
									DeepGini	0.9045	0.8921	0.8940	0.8843	0.9174	0.8963
									PRIMA	0.9760	0.9839	0.9309	0.9550	0.9155	0.9455
									CertPri	0.9513	0.9446	0.9993	0.9395	0.9622	0.9846
13	CIFAR10	VGG16	CNN	10000	FineFool	image	C	N+W	LSA	0.8182	0.7947	0.7877	0.7761	0.7415	0.7336
									DSA	0.8193	0.8098	0.7831	0.7455	0.7789	0.7391
									MCP	0.8230	0.8652	0.9011	0.8359	0.8368	0.8275
									DeepGini	0.8779	0.9094	0.8815	0.8623	0.8315	0.8687
									PRIMA	0.9504	0.9463	0.9849	0.9668	0.9253	0.9307
									CertPri	0.9308	0.9810	0.9695	0.9068	0.9753	0.9723
14	CIFAR10	VGG16	CNN	10000	+AdapS	image	C	N+W	LSA	0.2573	0.1420	0.1149	0.0715	0.1235	0.3481
									DSA	0.2156	0.1627	0.1943	0.1862	0.1059	0.3656
									MCP	0.2376	0.2283	0.2388	0.3381	0.3592	0.6684
									DeepGini	0.5633	0.4460	0.4918	0.4743	0.4917	0.6716
									PRIMA	0.5202	0.5630	0.4773	0.5389	0.4212	0.6199
									CertPri	0.8467	0.8181	0.8065	0.7725	0.7410	0.8890
15	CIFAR10	VGG16	CNN	10000	+AdapC	image	C	N+W	LSA	0.3289	0.2013	0.2217	0.1908	0.1568	0.5557
									DSA	0.3403	0.2811	0.2361	0.2138	0.2209	0.5626
									MCP	0.0912	0.1657	0.1636	0.1355	0.1444	0.3005
									DeepGini	0.1294	0.1811	0.1176	0.2117	0.1728	0.2723
									PRIMA	0.6345	0.5753	0.5460	0.5301	0.4674	0.7084
									CertPri	0.8447	0.8216	0.7758	0.7252	0.7260	0.9355
									LSA	0.2494	0.1199	0.1565	0.0981	0.1015	0.4511
									DSA	0.2130	0.1520	0.1165	0.1073	0.1121	0.4719

16	CIFAR10	VGG16	CNN	10000	+AdapM	image	C	N+W	MCP	0.2433	0.2146	0.2211	0.3023	0.3106	0.6707
									DeepGini	0.5449	0.5008	0.5135	0.4683	0.4388	0.6584
									PRIMA	0.3855	0.3584	0.3595	0.3498	0.3218	0.4517
									CertPri	0.8612	0.7835	0.7676	0.7444	0.6837	0.9341
17	ImageNet	ResNet101	CNN	5000	original	image	C	N+W	LSA	0.3692	0.2988	0.2568	0.2266	0.2228	0.6324
									DSA	0.3482	0.3027	0.2688	0.2637	0.2750	0.6276
									MCP	0.3438	0.3645	0.3483	0.4226	0.4244	0.7777
									DeepGini	0.6305	0.6167	0.5893	0.5637	0.5303	0.7955
									PRIMA	0.7078	0.6838	0.7225	0.5877	0.5909	0.7853
									CertPri	0.7412	0.7611	0.6604	0.6270	0.5917	0.8331
18	ImageNet	ResNet101	CNN	5000	original	image	C	N+B	LSA	n/a	n/a	n/a	n/a	n/a	n/a
									DSA	n/a	n/a	n/a	n/a	n/a	n/a
									MCP	0.3438	0.3645	0.3483	0.4226	0.4244	0.7777
									DeepGini	0.6305	0.6167	0.5893	0.5637	0.5303	0.7955
									PRIMA	0.3779	0.5201	0.3896	0.4002	0.4019	0.5740
									CertPri	0.7646	0.7503	0.6489	0.6559	0.5944	0.8554
19	ImageNet	ResNet101	CNN	5000	+BIM	image	C	N+W	LSA	0.6407	0.5990	0.5706	0.4604	0.4299	0.5147
									DSA	0.5670	0.5736	0.5645	0.5546	0.5377	0.5119
									MCP	0.5567	0.7200	0.5517	0.6962	0.6824	0.4283
									DeepGini	0.8140	0.6681	0.8069	0.6793	0.6472	0.6060
									PRIMA	0.8522	0.7311	0.8829	0.6669	0.8529	0.6373
									CertPri	0.8446	0.8186	0.8367	0.9210	0.8345	0.9178
20	ImageNet	ResNet101	CNN	5000	+C&W	image	C	N+W	LSA	0.6220	0.5852	0.6376	0.6469	0.6183	0.5978
									DSA	0.6429	0.7067	0.7105	0.5588	0.5413	0.5342
									MCP	0.5291	0.6371	0.6305	0.4669	0.4759	0.6760
									DeepGini	0.5985	0.6015	0.6258	0.6125	0.6119	0.7862
									PRIMA	0.9128	0.8650	0.8191	0.8582	0.8363	0.6588
									CertPri	0.9626	0.9397	0.8322	0.8091	0.8572	0.9148
21	ImageNet	ResNet101	CNN	5000	FineFool	image	C	N+W	LSA	0.5800	0.5432	0.5408	0.6104	0.5944	0.5402
									DSA	0.6872	0.5728	0.6381	0.6397	0.5970	0.5072
									MCP	0.5766	0.5887	0.7631	0.5767	0.5499	0.5754
									DeepGini	0.7782	0.7714	0.6059	0.5967	0.5777	0.6164
									PRIMA	0.8093	0.8219	0.8365	0.8243	0.6576	0.6546
									CertPri	0.8249	0.9251	0.9413	0.8199	0.9551	0.9411
22	ImageNet	ResNet101	CNN	5000	+AdapS	image	C	N+W	LSA	0.2565	0.0630	0.1502	0.0282	0.1797	0.3049
									DSA	0.1603	0.1401	0.2544	0.1712	0.0409	0.2954
									MCP	0.2076	0.3021	0.3254	0.3572	0.4264	0.5907
									DeepGini	0.5789	0.5467	0.3971	0.4161	0.4002	0.7092
									PRIMA	0.5002	0.5138	0.4072	0.4908	0.3426	0.5087
									CertPri	0.7304	0.8013	0.6714	0.6062	0.6637	0.8562
23	ImageNet	ResNet101	CNN	5000	+AdapC	image	C	N+W	LSA	0.3105	0.2519	0.1519	0.1895	0.1056	0.5060
									DSA	0.2968	0.3376	0.2193	0.2166	0.2567	0.5307
									MCP	0.0504	0.0904	0.1881	0.0440	0.1255	0.3435
									DeepGini	0.1502	0.0723	0.1486	0.1136	0.1772	0.2329
									PRIMA	0.6012	0.5938	0.6129	0.5353	0.4478	0.7019
									CertPri	0.8061	0.7899	0.7336	0.6766	0.6463	0.8726
24	ImageNet	ResNet101	CNN	5000	+AdapM	image	C	N+W	LSA	0.1704	0.1312	0.2059	0.0922	0.1056	0.4625
									DSA	0.1406	0.1513	0.1091	0.1432	0.1353	0.5054
									MCP	0.2740	0.2178	0.1944	0.2647	0.3725	0.6925
									DeepGini	0.5886	0.4655	0.4718	0.4620	0.4254	0.6561
									PRIMA	0.3165	0.3662	0.3348	0.3639	0.2912	0.3880
									CertPri	0.8185	0.7394	0.6999	0.6817	0.6715	0.8390
25	ImageNet	VGG19	CNN	5000	original	image	C	N+W	LSA	0.3559	0.2831	0.2342	0.2148	0.1989	0.6628
									DSA	0.3014	0.3071	0.2997	0.2372	0.2734	0.6309
									MCP	0.3083	0.3344	0.3255	0.4508	0.4469	0.7595
									DeepGini	0.6537	0.6294	0.5586	0.5418	0.5536	0.7600
									PRIMA	Out of Time	Out of Time	Out of Time	Out of Time	Out of Time	Out of Time
									CertPri	0.7640	0.7783	0.6761	0.6701	0.5978	0.8348
26	ImageNet	VGG19	CNN	5000	original	image	C	N+B	LSA	n/a	n/a	n/a	n/a	n/a	n/a
									DSA	n/a	n/a	n/a	n/a	n/a	n/a
									MCP	0.3083	0.3344	0.3255	0.4508	0.4469	0.7595
									DeepGini	0.6537	0.6294	0.5586	0.5418	0.5536	0.7600
									PRIMA	Out of Time	Out of Time	Out of Time	Out of Time	Out of Time	Out of Time
									CertPri	0.7683	0.7477	0.6760	0.6473	0.5967	0.8549
27	ImageNet	VGG19	CNN	5000	+BIM	image	C	N+W	LSA	0.6184	0.6165	0.5852	0.4906	0.4306	0.4843
									DSA	0.5846	0.6029	0.5738	0.5706	0.5339	0.4746
									MCP	0.5730	0.7077	0.5681	0.6973	0.6405	0.4106
									DeepGini	0.7868	0.6711	0.8069	0.6622	0.6188	0.6508
									PRIMA	Out of Time	Out of Time	Out of Time	Out of Time	Out of Time	Out of Time
									CertPri	0.8619	0.8288	0.8634	0.9553	0.8289	0.8898
28	ImageNet	VGG19	CNN	5000	+C&W	image	C	N+W	LSA	0.5956	0.5789	0.6516	0.6477	0.6137	0.6427
									DSA	0.6604	0.7244	0.6775	0.5537	0.5332	0.5174
									MCP	0.4988	0.6225	0.6061	0.4424	0.4397	0.6365
									DeepGini	0.5737	0.5733	0.6103	0.6061	0.6296	0.7582
									PRIMA	Out of Time	Out of Time	Out of Time	Out of Time	Out of Time	Out of Time
									CertPri	0.9396	0.9183	0.7853	0.8221	0.8798	0.8922
29	ImageNet	VGG19	CNN	5000	FineFool	image	C	N+W	LSA	0.5676	0.5712	0.5204	0.5786	0.6378	0.5158
									DSA	0.7133	0.5562	0.6768	0.6382	0.6309	0.5205
									MCP	0.5456	0.5653	0.7658	0.5416	0.5542	0.5404
									DeepGini	0.7674	0.7700	0.6046	0.5704	0.6033	0.5777
									PRIMA	Out of Time	Out of Time	Out of Time	Out of Time	Out of Time	Out of Time
									CertPri	0.8224	0.9209	0.9420	0.8082	0.9485	0.9457
30	ImageNet	VGG19	CNN	5000	+AdapS	image	C	N+W	LSA	0.2492	0.0689	0.1411	0.0382	0.1982	0.3282
									DSA	0.1808	0.1366	0.2854	0.1601	0.0785	0.3155
									MCP	0.1947	0.3161	0.3111	0.3839	0.4166	0.6065
									DeepGini	0.5940	0.5421	0.4218	0.4175	0.4226	0.7001
									PRIMA	Out of Time	Out of Time	Out of Time	Out of Time	Out of Time	Out of Time
									CertPri	0.7332	0.7869	0.6792	0.5682	0.6720	0.8577
31	ImageNet	VGG19	CNN	5000	+AdapC	image	C	N+W	LSA	0.2886	0.2395	0.1707	0.2222	0.1302	0.4840
									DSA	0.2973	0.3067	0.2200	0.2696	0.2398	0.5309
									MCP	0.0635	0.0769	0.1933	0.0138	0.1372	0.3539
									DeepGini	0.1118	0.0885	0.1523	0.1158	0.1921	0.2724
									PRIMA	Out of Time	Out of Time	Out of Time	Out of Time	Out of Time	Out of Time
									CertPri	0.8106	0.7904	0.7549	0.7072	0.6600	0.8870
									LSA	0.1735	0.1260	0.2245	0.0445	0.0970	0.4775

32	ImageNet	VGG19	CNN	5000	+AdapM	image	C	N+W	DSA	0.1394	0.1815	0.1393	0.1334	0.1443	0.4978
									MCP	0.2806	0.1982	0.2011	0.2779	0.3871	0.6739
									DeepGini	0.6010	0.4639	0.4918	0.4534	0.4338	0.6445
									PRIMA	Out of Time	Out of Time	Out of Time	Out of Time	Out of Time	Out of Time
									CertPri	0.7856	0.7835	0.6977	0.6314	0.6911	0.8127
33	DrivingSA	VGG19-AD	CNN	5279	original	image	R	N+W	LSA	0.3638	0.4022	0.4124	0.4188	0.4843	0.6534
									DSA	n/a	n/a	n/a	n/a	n/a	n/a
									MCP	n/a	n/a	n/a	n/a	n/a	n/a
									DeepGini	n/a	n/a	n/a	n/a	n/a	n/a
									PRIMA	0.8130	0.7905	0.7703	0.7529	0.7114	0.7715
									CertPri	0.8062	0.8520	0.8567	0.8387	0.8184	0.8506
34	DrivingSA	VGG19-AD	CNN	5279	original	image	R	N+B	LSA	n/a	n/a	n/a	n/a	n/a	n/a
									DSA	n/a	n/a	n/a	n/a	n/a	n/a
									MCP	n/a	n/a	n/a	n/a	n/a	n/a
									DeepGini	n/a	n/a	n/a	n/a	n/a	n/a
									PRIMA	0.4153	0.3916	0.3558	0.3609	0.3498	0.4178
									CertPri	0.7834	0.8282	0.7990	0.8099	0.8307	0.8481
35	DrivingSA	VGG19-AD	CNN	5279	patch	image	R	N+W	LSA	0.3324	0.3334	0.3720	0.3716	0.4451	0.6802
									DSA	n/a	n/a	n/a	n/a	n/a	n/a
									MCP	n/a	n/a	n/a	n/a	n/a	n/a
									DeepGini	n/a	n/a	n/a	n/a	n/a	n/a
									PRIMA	0.8115	0.8112	0.7982	0.7840	0.7191	0.7787
									CertPri	0.8307	0.8115	0.8471	0.8366	0.7953	0.8634
36	DrivingSA	VGG19-AD	CNN	5279	saturation	image	R	N+W	LSA	0.4291	0.4293	0.4576	0.4452	0.4740	0.6564
									DSA	n/a	n/a	n/a	n/a	n/a	n/a
									MCP	n/a	n/a	n/a	n/a	n/a	n/a
									DeepGini	n/a	n/a	n/a	n/a	n/a	n/a
									PRIMA	0.7509	0.7960	0.7761	0.7990	0.8333	0.8748
									CertPri	0.8070	0.8267	0.8135	0.8199	0.7830	0.8948
37	FMNIST	AlexNet	CNN	10000	original	image	C	N+W	LSA	0.3810	0.4463	0.5106	0.6537	0.7817	0.9509
									DSA	0.5018	0.5321	0.6163	0.7061	0.8535	0.9483
									MCP	0.4719	0.5772	0.6956	0.7365	0.8610	0.9035
									DeepGini	0.4782	0.5911	0.6777	0.7667	0.8742	0.9434
									PRIMA	0.5003	0.5174	0.6104	0.7336	0.8254	0.9329
									CertPri	0.4863	0.5983	0.6745	0.8214	0.8122	0.9780
38	FMNIST_P	AlexNet-P	CNN	10000	original	image	C	P+W	LSA	0.4770	0.4240	0.3791	0.3252	0.2965	0.5774
									DSA	0.5817	0.4918	0.4575	0.3957	0.3971	0.6112
									MCP	0.4479	0.4990	0.4647	0.4901	0.4087	0.5440
									DeepGini	0.5057	0.4717	0.4572	0.4955	0.3837	0.5387
									PRIMA	0.9934	0.9767	0.9565	0.9466	0.9463	0.9920
									CertPri	0.9878	0.9908	0.9805	0.9725	0.9840	0.9946
39	Ants_Bees	VGG16-AB	CNN	153	original	image	C	T+W	LSA	0.5824	n/a	n/a	n/a	n/a	0.6643
									DSA	0.6973	n/a	n/a	n/a	n/a	0.7088
									MCP	0.7483	n/a	n/a	n/a	n/a	0.7549
									DeepGini	0.8532	n/a	n/a	n/a	n/a	0.8805
									PRIMA	0.9086	n/a	n/a	n/a	n/a	0.9401
									CertPri	0.9284	n/a	n/a	n/a	n/a	0.9496
40	Cats_Dogs	VGG19-CD	CNN	5000	original	image	C	T+W	LSA	0.4198	0.3994	0.3761	0.4054	0.5892	0.6013
									DSA	0.5827	0.5772	0.5463	0.5407	0.7041	0.7256
									MCP	0.6657	0.6566	0.6516	0.6743	0.6894	0.7206
									DeepGini	0.7009	0.7032	0.7112	0.7364	0.7820	0.8229
									PRIMA	0.8613	0.8209	0.8163	0.8060	0.8560	0.8824
									CertPri	0.7877	0.8222	0.8132	0.8625	0.8883	0.9583
41	IMDB	CNN-I	CNN	10000	original	text	C	N+W	LSA	0.3740	0.4675	0.4524	0.5422	0.5694	0.7021
									DSA	0.4410	0.5615	0.6514	0.6644	0.6448	0.7475
									MCP	0.6073	0.6977	0.7635	0.8314	0.8008	0.8146
									DeepGini	0.6466	0.7140	0.7812	0.8449	0.8134	0.8758
									PRIMA	0.6662	0.7467	0.8055	0.8569	0.8602	0.8971
									CertPri	0.7344	0.7262	0.7991	0.8817	0.8638	0.9514
42	IMDB	LSTM-I	LSTM	10000	original	text	C	N+W	LSA	0.0826	0.1040	0.0957	0.1261	0.1484	0.4551
									DSA	0.3782	0.2733	0.2232	0.2567	0.1941	0.5132
									MCP	0.3778	0.4114	0.4321	0.4498	0.4018	0.7707
									DeepGini	0.4137	0.4162	0.4260	0.4325	0.4236	0.8021
									PRIMA	0.5899	0.5413	0.5503	0.5248	0.4856	0.8019
									CertPri	0.6956	0.6417	0.6317	0.6258	0.5873	0.8950
43	Reuters	CNN-R	CNN	2246	original	text	C	N+W	LSA	0.4101	0.5171	0.5021	0.5587	0.5690	0.7665
									DSA	0.4652	0.5702	0.6764	0.6400	0.6579	0.7571
									MCP	0.6135	0.6919	0.7709	0.8682	0.8103	0.8244
									DeepGini	0.6466	0.7416	0.8373	0.8710	0.8201	0.8926
									PRIMA	0.6946	0.6955	0.7046	0.8225	0.8374	0.8931
									CertPri	0.7351	0.7478	0.8208	0.8862	0.8743	0.9528
44	Reuters	LSTM-R	LSTM	2246	original	text	C	N+W	LSA	0.2055	0.2852	0.2367	0.2879	0.2449	0.5142
									DSA	0.4150	0.2982	0.2257	0.3097	0.2974	0.5127
									MCP	0.4312	0.3916	0.4687	0.4647	0.4061	0.7593
									DeepGini	0.4437	0.4432	0.4533	0.4206	0.4532	0.8217
									PRIMA	0.5821	0.5519	0.5714	0.6345	0.5296	0.7924
									CertPri	0.7117	0.7012	0.6589	0.6386	0.6392	0.8977
45	VCTK10	LSTM-V	LSTM	400	original	speech	C	N+W	LSA	0.3605	0.2400	0.5405	n/a	n/a	0.5903
									DSA	0.3311	0.3162	0.5685	n/a	n/a	0.5138
									MCP	0.6040	0.6095	0.6890	n/a	n/a	0.7771
									DeepGini	0.6346	0.6447	0.8028	n/a	n/a	0.8437
									PRIMA	0.4210	0.4765	0.8517	n/a	n/a	0.8952
									CertPri	0.7571	0.7726	0.8758	n/a	n/a	0.8467
46	RML8PSK	LSTM-RML	LSTM	312	original	signal	R	N+W	LSA	0.3600	0.3712	0.5904	n/a	n/a	0.6248
									DSA	n/a	n/a	n/a	n/a	n/a	n/a
									MCP	n/a	n/a	n/a	n/a	n/a	n/a
									DeepGini	n/a	n/a	n/a	n/a	n/a	n/a
									PRIMA	0.7330	0.7067	0.7373	n/a	n/a	0.7532
									CertPri	0.8139	0.8119	0.8117	n/a	n/a	0.8477
47	Cora	GCN-C	GCN	1000	original	graph	C	N+W	LSA	0.3510	0.2605	0.2375	0.2269	0.5973	0.5973
									DSA	0.3123	0.3009	0.2640	0.2510	0.5457	0.5457
									MCP	0.5485	0.5969	0.6109	0.5041	0.7629	0.7629
									DeepGini	0.6126	0.6150	0.5739	0.5609	0.8605	0.8605
									PRIMA	0.4127	0.4475	0.4913	0.4809	0.6556	0.6556
									CertPri	0.7490	0.7337	0.7050	0.7138	0.8322	0.8322

48	Adult	LFCN-A	FCN	10000	original	structured	C	N+W	LSA	0.4610	0.4905	0.4919	0.5582	0.4987	0.6608
									DSA	0.5151	0.5202	0.5121	0.5237	0.5314	0.7653
									MCP	0.5863	0.5636	0.5577	0.5040	0.5567	0.7811
									DeepGini	0.5278	0.5854	0.5688	0.5262	0.5452	0.8107
									PRIMA	0.6213	0.5959	0.6111	0.5655	0.5460	0.7826
									CertPri	0.6008	0.6091	0.5905	0.5754	0.5771	0.7917
49	COMPAS	HFCN-C	FCN	1000	original	structured	C	N+W	LSA	0.4719	0.5277	0.5027	0.5474	0.6462	0.6462
									DSA	0.5436	0.5441	0.5270	0.5141	0.7686	0.7686
									MCP	0.5706	0.5913	0.5708	0.4741	0.7734	0.7734
									DeepGini	0.5162	0.5871	0.5676	0.5440	0.8094	0.8094
									PRIMA	0.6002	0.5966	0.5866	0.5408	0.7748	0.7748
									CertPri	0.5869	0.6208	0.5905	0.6092	0.8264	0.8264
50	Boston	FCN-B	FCN	102	original	structured	R	N+W	LSA	0.6623	n/a	n/a	n/a	n/a	0.6636
									DSA	n/a	n/a	n/a	n/a	n/a	n/a
									MCP	n/a	n/a	n/a	n/a	n/a	n/a
									DeepGini	n/a	n/a	n/a	n/a	n/a	n/a
									PRIMA	0.7785	n/a	n/a	n/a	n/a	0.7681
									CertPri	0.8401	n/a	n/a	n/a	n/a	0.8607

D.4 Repeat 4th

ID	Datasets	Models	Struc.	#Inputs	Types	Forms	Tas.	Sce.	Methods	RAUC-100	RAUC-200	RAUC-300	RAUC-500	RAUC-1000	RAUC-all
1	CIFAR10	ResNet50	CNN	10000	original	image	C	N+W	LSA	0.3867	0.3040	0.2660	0.2525	0.2232	0.6496
									DSA	0.3681	0.3381	0.3086	0.2797	0.2726	0.6406
									MCP	0.3565	0.3733	0.3454	0.4503	0.4371	0.8176
									DeepGini	0.6633	0.6277	0.6049	0.5946	0.5781	0.8050
									PRIMA	0.8216	0.7882	0.7744	0.7581	0.6907	0.9432
									CertPri	0.8595	0.8154	0.8195	0.7380	0.7225	0.9377
2	CIFAR10	ResNet50	CNN	10000	original	image	C	N+B	LSA	n/a	n/a	n/a	n/a	n/a	n/a
									DSA	n/a	n/a	n/a	n/a	n/a	n/a
									MCP	0.3565	0.3733	0.3454	0.4503	0.4371	0.8176
									DeepGini	0.6633	0.6277	0.6049	0.5946	0.5781	0.8050
									PRIMA	0.4551	0.4211	0.4159	0.4021	0.4365	0.7131
									CertPri	0.8714	0.7963	0.8102	0.7452	0.7450	0.8887
3	CIFAR10	ResNet50	CNN	10000	+BIM	image	C	N+W	LSA	0.7757	0.7505	0.7328	0.6977	0.6739	0.7755
									DSA	0.8145	0.8351	0.8087	0.7871	0.7817	0.7303
									MCP	0.8610	0.8222	0.8505	0.7998	0.7864	0.6914
									DeepGini	0.9578	0.9398	0.9454	0.9467	0.9209	0.9001
									PRIMA	0.9996	0.9946	0.9884	0.9730	0.9495	0.9397
									CertPri	0.9803	0.9856	0.9811	0.9664	0.9625	0.9571
4	CIFAR10	ResNet50	CNN	10000	+C&W	image	C	N+W	LSA	0.8464	0.8394	0.7975	0.7948	0.7663	0.7680
									DSA	0.8787	0.8495	0.8584	0.8164	0.7853	0.7708
									MCP	0.6245	0.7669	0.7282	0.7403	0.7415	0.7885
									DeepGini	0.8899	0.8596	0.9016	0.8810	0.9024	0.8783
									PRIMA	0.9943	0.9923	0.9647	0.9502	0.9395	0.9914
									CertPri	0.9826	0.9912	0.9874	0.9670	0.9708	0.9914
5	CIFAR10	ResNet50	CNN	10000	FineFool	image	C	N+W	LSA	0.8192	0.8100	0.7759	0.7265	0.7625	0.7700
									DSA	0.8297	0.8044	0.8098	0.7891	0.7546	0.7741
									MCP	0.8594	0.8498	0.8752	0.8229	0.8362	0.8642
									DeepGini	0.9057	0.8998	0.8745	0.8916	0.8621	0.8721
									PRIMA	0.9394	0.9318	0.9231	0.9428	0.9493	0.9563
									CertPri	0.9584	0.9613	0.9800	0.9975	0.9549	0.9814
6	CIFAR10	ResNet50	CNN	10000	+AdapS	image	C	N+W	LSA	0.2544	0.1634	0.1313	0.1141	0.1214	0.3545
									DSA	0.2496	0.1448	0.1982	0.1523	0.0974	0.3342
									MCP	0.2341	0.2354	0.2496	0.3499	0.3404	0.6713
									DeepGini	0.5360	0.4845	0.4736	0.4753	0.4676	0.6425
									PRIMA	0.5657	0.5252	0.4881	0.5204	0.4043	0.6104
									CertPri	0.8438	0.8270	0.7833	0.7667	0.7072	0.9148
7	CIFAR10	ResNet50	CNN	10000	+AdapC	image	C	N+W	LSA	0.3007	0.2140	0.1979	0.1815	0.1551	0.5344
									DSA	0.3259	0.2890	0.2550	0.1938	0.2019	0.5633
									MCP	0.1159	0.1222	0.1199	0.1449	0.1859	0.3025
									DeepGini	0.1553	0.1508	0.1470	0.1854	0.1517	0.3088
									PRIMA	0.6172	0.5778	0.5580	0.5521	0.4740	0.6980
									CertPri	0.8499	0.8124	0.8089	0.7480	0.7164	0.9281
8	CIFAR10	ResNet50	CNN	10000	+AdapM	image	C	N+W	LSA	0.2218	0.1084	0.1514	0.0923	0.1153	0.4736
									DSA	0.2149	0.1908	0.1301	0.1264	0.1089	0.4468
									MCP	0.2467	0.2193	0.2224	0.3129	0.3252	0.6620
									DeepGini	0.5478	0.4926	0.5153	0.4793	0.4346	0.6660
									PRIMA	0.3710	0.3701	0.3564	0.3524	0.3199	0.4582
									CertPri	0.8399	0.8066	0.7856	0.7492	0.7224	0.9314
9	CIFAR10	VGG16	CNN	10000	original	image	C	N+W	LSA	0.3849	0.2737	0.2575	0.2750	0.2484	0.6275
									DSA	0.3760	0.3109	0.2830	0.2788	0.2550	0.6290
									MCP	0.3399	0.3932	0.3784	0.4201	0.4657	0.7840
									DeepGini	0.6505	0.5960	0.6264	0.5811	0.5598	0.8452
									PRIMA	0.8287	0.7932	0.7403	0.7319	0.6982	0.9211
									CertPri	0.8597	0.8442	0.7955	0.7440	0.7069	0.9263
10	CIFAR10	VGG16	CNN	10000	original	image	C	N+B	LSA	n/a	n/a	n/a	n/a	n/a	n/a
									DSA	n/a	n/a	n/a	n/a	n/a	n/a
									MCP	0.3399	0.3932	0.3784	0.4201	0.4657	0.7840
									DeepGini	0.6505	0.5960	0.6264	0.5811	0.5598	0.8452
									PRIMA	0.4820	0.4445	0.4473	0.4280	0.3983	0.6823
									CertPri	0.8786	0.7916	0.8142	0.7676	0.6967	0.8724
11	CIFAR10	VGG16	CNN	10000	+BIM	image	C	N+W	LSA	0.7519	0.7247	0.7115	0.6636	0.6966	0.7713
									DSA	0.8376	0.8058	0.8315	0.7950	0.7899	0.7609
									MCP	0.8318	0.8334	0.8263	0.7964	0.7624	0.6585
									DeepGini	0.9734	0.9792	0.9658	0.9223	0.9409	0.8998
									PRIMA	0.9920	0.9829	0.9639	0.9323	0.9278	0.9454
									CertPri	0.9752	0.9537	0.9305	0.9049	0.9637	0.9671
12	CIFAR10	VGG16	CNN	10000	+C&W	image	C	N+W	LSA	0.8428	0.8469	0.8186	0.7933	0.7474	0.7806
									DSA	0.8963	0.8487	0.8440	0.7943	0.7965	0.7634
									MCP	0.6165	0.7462	0.7295	0.7362	0.7361	0.7511
									DeepGini	0.8948	0.8820	0.8781	0.8887	0.9187	0.9009
									PRIMA	0.9662	0.9898	0.9256	0.9578	0.9412	0.9701
									CertPri	0.9253	0.9635	0.9545	0.9473	0.9491	0.9790
13	CIFAR10	VGG16	CNN	10000	FineFool	image	C	N+W	LSA	0.7965	0.8035	0.7870	0.7750	0.7185	0.7393
									DSA	0.8154	0.8255	0.7859	0.7430	0.7620	0.7425
									MCP	0.8232	0.8598	0.8949	0.8095	0.8249	0.8345
									DeepGini	0.8672	0.9187	0.8905	0.8784	0.8640	0.8720
									PRIMA	0.9411	0.9496	0.9721	0.9697	0.9326	0.9522
									CertPri	0.9382	0.9917	0.9643	0.9181	0.9799	0.9655
14	CIFAR10	VGG16	CNN	10000	+AdapS	image	C	N+W	LSA	0.2631	0.1466	0.1453	0.1048	0.0916	0.3612
									DSA	0.2034	0.1908	0.1817	0.1981	0.1052	0.3500
									MCP	0.2241	0.2376	0.2431	0.3599	0.3392	0.6669
									DeepGini	0.5338	0.4718	0.4818	0.4714	0.4830	0.6798
									PRIMA	0.5218	0.5426	0.4441	0.5447	0.4374	0.5986
									CertPri	0.8671	0.8155	0.8168	0.7654	0.7417	0.8935
15	CIFAR10	VGG16	CNN	10000	+AdapC	image	C	N+W	LSA	0.3206	0.2049	0.2278	0.2070	0.1389	0.5442
									DSA	0.3156	0.2725	0.2702	0.1973	0.2105	0.5761
									MCP	0.0885	0.1516	0.1510	0.1143	0.1606	0.3009
									DeepGini	0.1354	0.1751	0.1034	0.1812	0.1626	0.2717
									PRIMA	0.6445	0.5842	0.5513	0.5404	0.4688	0.7103
									CertPri	0.8258	0.8220	0.7926	0.7266	0.7263	0.9370
									LSA	0.2245	0.1280	0.1558	0.1139	0.1004	0.4668
									DSA	0.1924	0.1720	0.1100	0.1346	0.0947	0.4704

16	CIFAR10	VGG16	CNN	10000	+AdapM	image	C	N+W	MCP	0.2662	0.2148	0.2374	0.2687	0.3384	0.6782
									DeepGini	0.5421	0.5241	0.5031	0.4862	0.4363	0.6829
									PRIMA	0.3649	0.3727	0.3629	0.3654	0.2985	0.4590
									CertPri	0.8809	0.8100	0.7577	0.7414	0.6985	0.9307
17	ImageNet	ResNet101	CNN	5000	original	image	C	N+W	LSA	0.3507	0.2813	0.2641	0.2304	0.2263	0.6528
									DSA	0.3551	0.3021	0.2624	0.2608	0.2834	0.6412
									MCP	0.3631	0.3852	0.3265	0.4227	0.4552	0.7990
									DeepGini	0.6341	0.6239	0.5795	0.5599	0.5459	0.7878
									PRIMA	0.7255	0.6946	0.6983	0.5945	0.5762	0.7915
									CertPri	0.7480	0.7482	0.6599	0.6342	0.6135	0.8292
18	ImageNet	ResNet101	CNN	5000	original	image	C	N+B	LSA	n/a	n/a	n/a	n/a	n/a	n/a
									DSA	n/a	n/a	n/a	n/a	n/a	n/a
									MCP	0.3631	0.3852	0.3265	0.4227	0.4552	0.7990
									DeepGini	0.6341	0.6239	0.5795	0.5599	0.5459	0.7878
									PRIMA	0.3618	0.5293	0.4089	0.3861	0.4067	0.5513
									CertPri	0.7583	0.7574	0.6436	0.6644	0.5811	0.8484
19	ImageNet	ResNet101	CNN	5000	+BIM	image	C	N+W	LSA	0.6398	0.6196	0.5904	0.4687	0.4438	0.4962
									DSA	0.5631	0.5699	0.5542	0.5619	0.5326	0.5021
									MCP	0.5691	0.7050	0.5702	0.6961	0.6542	0.4023
									DeepGini	0.8178	0.6739	0.8226	0.6471	0.6282	0.6325
									PRIMA	0.8328	0.7263	0.9159	0.6892	0.8537	0.6519
									CertPri	0.8269	0.8222	0.8289	0.9216	0.8170	0.9190
20	ImageNet	ResNet101	CNN	5000	+C&W	image	C	N+W	LSA	0.6018	0.5556	0.6422	0.6428	0.6225	0.6065
									DSA	0.6384	0.6865	0.6962	0.5707	0.5086	0.5492
									MCP	0.5313	0.6301	0.6397	0.4808	0.4542	0.6920
									DeepGini	0.6030	0.6044	0.6096	0.6178	0.5964	0.7578
									PRIMA	0.9307	0.8852	0.8073	0.8365	0.8593	0.6832
									CertPri	0.9500	0.9370	0.8278	0.8150	0.8405	0.9334
21	ImageNet	ResNet101	CNN	5000	FineFool	image	C	N+W	LSA	0.5582	0.5454	0.5455	0.5794	0.6062	0.5229
									DSA	0.6820	0.5464	0.6417	0.6309	0.5902	0.5343
									MCP	0.5876	0.5798	0.7325	0.5666	0.5581	0.5624
									DeepGini	0.7781	0.7662	0.6137	0.6020	0.6091	0.5993
									PRIMA	0.8298	0.8345	0.8431	0.8484	0.6451	0.6620
									CertPri	0.8290	0.8980	0.9294	0.8190	0.9271	0.9345
22	ImageNet	ResNet101	CNN	5000	+AdapS	image	C	N+W	LSA	0.2461	0.0797	0.1284	0.0327	0.1930	0.3058
									DSA	0.1545	0.1561	0.2699	0.1882	0.0616	0.3181
									MCP	0.2085	0.3092	0.3019	0.3423	0.4170	0.5939
									DeepGini	0.5823	0.5639	0.4040	0.4149	0.3862	0.6841
									PRIMA	0.4905	0.5269	0.4176	0.4806	0.3220	0.5082
									CertPri	0.7149	0.7922	0.6876	0.6147	0.6455	0.8609
23	ImageNet	ResNet101	CNN	5000	+AdapC	image	C	N+W	LSA	0.3207	0.2448	0.1677	0.2200	0.1343	0.5101
									DSA	0.3080	0.3382	0.2446	0.2209	0.2545	0.5101
									MCP	0.0520	0.1016	0.1796	0.0167	0.1156	0.3564
									DeepGini	0.1403	0.0816	0.1389	0.0946	0.2009	0.2374
									PRIMA	0.5997	0.6088	0.6001	0.5146	0.4222	0.6800
									CertPri	0.8303	0.7880	0.7554	0.6804	0.6596	0.8402
24	ImageNet	ResNet101	CNN	5000	+AdapM	image	C	N+W	LSA	0.1928	0.1463	0.1933	0.0717	0.1062	0.4500
									DSA	0.1563	0.1340	0.1188	0.1415	0.1507	0.5044
									MCP	0.2868	0.2255	0.1817	0.2800	0.3835	0.6906
									DeepGini	0.5688	0.4716	0.4714	0.4685	0.4124	0.6540
									PRIMA	0.3266	0.3796	0.3279	0.3684	0.3057	0.4164
									CertPri	0.7975	0.7541	0.7144	0.6699	0.6485	0.8416
25	ImageNet	VGG19	CNN	5000	original	image	C	N+W	LSA	0.3755	0.3119	0.2544	0.2216	0.2202	0.6664
									DSA	0.3143	0.3202	0.2830	0.2372	0.2516	0.6268
									MCP	0.3283	0.3350	0.3269	0.4539	0.4675	0.7887
									DeepGini	0.6531	0.6368	0.5350	0.5312	0.5652	0.7505
									PRIMA	Out of Time	Out of Time	Out of Time	Out of Time	Out of Time	Out of Time
									CertPri	0.7492	0.7569	0.6561	0.6652	0.6042	0.8430
26	ImageNet	VGG19	CNN	5000	original	image	C	N+B	LSA	n/a	n/a	n/a	n/a	n/a	n/a
									DSA	n/a	n/a	n/a	n/a	n/a	n/a
									MCP	0.3283	0.3350	0.3269	0.4539	0.4675	0.7887
									DeepGini	0.6531	0.6368	0.5350	0.5312	0.5652	0.7505
									PRIMA	Out of Time	Out of Time	Out of Time	Out of Time	Out of Time	Out of Time
									CertPri	0.7622	0.7750	0.6595	0.6550	0.5825	0.8836
27	ImageNet	VGG19	CNN	5000	+BIM	image	C	N+W	LSA	0.6366	0.6163	0.5792	0.4756	0.4243	0.4818
									DSA	0.5668	0.6000	0.5819	0.5476	0.5347	0.4815
									MCP	0.5626	0.6867	0.5733	0.7019	0.6390	0.4014
									DeepGini	0.8085	0.6776	0.8010	0.6861	0.6113	0.6339
									PRIMA	Out of Time	Out of Time	Out of Time	Out of Time	Out of Time	Out of Time
									CertPri	0.8753	0.8370	0.8691	0.9407	0.8466	0.8852
28	ImageNet	VGG19	CNN	5000	+C&W	image	C	N+W	LSA	0.5902	0.5983	0.6362	0.6342	0.6092	0.6263
									DSA	0.6365	0.7416	0.6963	0.5578	0.5143	0.5204
									MCP	0.4975	0.6081	0.6125	0.4618	0.4522	0.6584
									DeepGini	0.5619	0.5741	0.6179	0.6066	0.6049	0.7677
									PRIMA	Out of Time	Out of Time	Out of Time	Out of Time	Out of Time	Out of Time
									CertPri	0.9711	0.9382	0.8152	0.8324	0.8824	0.9219
29	ImageNet	VGG19	CNN	5000	FineFool	image	C	N+W	LSA	0.5473	0.5709	0.5455	0.5746	0.6343	0.5103
									DSA	0.7055	0.5688	0.6693	0.6210	0.6396	0.5215
									MCP	0.5689	0.5872	0.7534	0.5348	0.5699	0.5342
									DeepGini	0.7573	0.7806	0.6109	0.5739	0.6168	0.5780
									PRIMA	Out of Time	Out of Time	Out of Time	Out of Time	Out of Time	Out of Time
									CertPri	0.8431	0.9242	0.9234	0.8267	0.9322	0.9192
30	ImageNet	VGG19	CNN	5000	+AdapS	image	C	N+W	LSA	0.2210	0.0780	0.1359	0.0261	0.2057	0.3065
									DSA	0.1562	0.1171	0.2858	0.1423	0.0538	0.2848
									MCP	0.1946	0.2952	0.3133	0.3704	0.4061	0.5954
									DeepGini	0.5898	0.5483	0.4127	0.3965	0.4266	0.7029
									PRIMA	Out of Time	Out of Time	Out of Time	Out of Time	Out of Time	Out of Time
									CertPri	0.7267	0.8107	0.6950	0.5745	0.6856	0.8674
31	ImageNet	VGG19	CNN	5000	+AdapC	image	C	N+W	LSA	0.2904	0.2299	0.1831	0.2202	0.1266	0.4993
									DSA	0.3306	0.3134	0.2282	0.2430	0.2497	0.5299
									MCP	0.0304	0.0892	0.2010	0.0106	0.1616	0.3515
									DeepGini	0.1384	0.0872	0.1643	0.1368	0.1926	0.2719
									PRIMA	Out of Time	Out of Time	Out of Time	Out of Time	Out of Time	Out of Time
									CertPri	0.7998	0.7990	0.7559	0.7244	0.6809	0.8922
									LSA	0.1714	0.1147	0.2139	0.0547	0.1297	0.4873

32	ImageNet	VGG19	CNN	5000	+AdapM	image	C	N+W	DSA	0.1581	0.1609	0.1333	0.1275	0.1442	0.4965
									MCP	0.2880	0.2147	0.2108	0.2994	0.3884	0.6741
									DeepGini	0.5750	0.4777	0.5021	0.4654	0.4008	0.6495
									PRIMA	Out of Time	Out of Time	Out of Time	Out of Time	Out of Time	Out of Time
									CertPri	0.8120	0.7514	0.7243	0.6567	0.6889	0.8053
33	DrivingSA	VGG19-AD	CNN	5279	original	image	R	N+W	LSA	0.3591	0.3904	0.4063	0.4136	0.4624	0.6462
									DSA	n/a	n/a	n/a	n/a	n/a	n/a
									MCP	n/a	n/a	n/a	n/a	n/a	n/a
									DeepGini	n/a	n/a	n/a	n/a	n/a	n/a
									PRIMA	0.8233	0.7850	0.7553	0.7261	0.7116	0.7806
									CertPri	0.7978	0.8258	0.8557	0.8229	0.7899	0.8425
34	DrivingSA	VGG19-AD	CNN	5279	original	image	R	N+B	LSA	n/a	n/a	n/a	n/a	n/a	n/a
									DSA	n/a	n/a	n/a	n/a	n/a	n/a
									MCP	n/a	n/a	n/a	n/a	n/a	n/a
									DeepGini	n/a	n/a	n/a	n/a	n/a	n/a
									PRIMA	0.3930	0.4037	0.3649	0.3808	0.3561	0.4112
									CertPri	0.7992	0.8284	0.8154	0.8024	0.8214	0.8710
35	DrivingSA	VGG19-AD	CNN	5279	patch	image	R	N+W	LSA	0.3313	0.3636	0.3700	0.3559	0.4356	0.6860
									DSA	n/a	n/a	n/a	n/a	n/a	n/a
									MCP	n/a	n/a	n/a	n/a	n/a	n/a
									DeepGini	n/a	n/a	n/a	n/a	n/a	n/a
									PRIMA	0.8251	0.8299	0.8228	0.7875	0.7221	0.7877
									CertPri	0.8190	0.8378	0.8536	0.8510	0.8064	0.8507
36	DrivingSA	VGG19-AD	CNN	5279	saturation	image	R	N+W	LSA	0.4292	0.4192	0.4727	0.4657	0.4872	0.6634
									DSA	n/a	n/a	n/a	n/a	n/a	n/a
									MCP	n/a	n/a	n/a	n/a	n/a	n/a
									DeepGini	n/a	n/a	n/a	n/a	n/a	n/a
									PRIMA	0.7704	0.7818	0.7894	0.7972	0.8323	0.8648
									CertPri	0.7899	0.8129	0.8191	0.8038	0.8118	0.8854
37	FMNIST	AlexNet	CNN	10000	original	image	C	N+W	LSA	0.3809	0.4395	0.5007	0.6417	0.8102	0.9155
									DSA	0.4780	0.5236	0.6263	0.7266	0.8548	0.9661
									MCP	0.4663	0.5823	0.6845	0.7218	0.8556	0.8872
									DeepGini	0.4846	0.5705	0.6702	0.7724	0.8505	0.9550
									PRIMA	0.4783	0.5471	0.5918	0.7218	0.8549	0.9533
									CertPri	0.4635	0.5831	0.6895	0.8191	0.8143	0.9750
38	FMNIST_P	AlexNet-P	CNN	10000	original	image	C	P+W	LSA	0.4538	0.4036	0.3780	0.3316	0.3024	0.5842
									DSA	0.5896	0.5088	0.4719	0.3956	0.4010	0.6187
									MCP	0.4569	0.4818	0.4595	0.4567	0.3910	0.5390
									DeepGini	0.4966	0.4897	0.4569	0.4978	0.3678	0.5528
									PRIMA	0.9988	0.9749	0.9879	0.9980	0.9426	0.9392
									CertPri	0.9900	0.9855	0.9843	0.9927	0.9712	0.9839
39	Ants_Bees	VGG16-AB	CNN	153	original	image	C	T+W	LSA	0.5780	n/a	n/a	n/a	n/a	0.6643
									DSA	0.6793	n/a	n/a	n/a	n/a	0.6772
									MCP	0.7630	n/a	n/a	n/a	n/a	0.7716
									DeepGini	0.8769	n/a	n/a	n/a	n/a	0.9037
									PRIMA	0.9113	n/a	n/a	n/a	n/a	0.9473
									CertPri	0.9498	n/a	n/a	n/a	n/a	0.9818
40	Cats_Dogs	VGG19-CD	CNN	5000	original	image	C	T+W	LSA	0.4259	0.3840	0.3846	0.4021	0.6114	0.6017
									DSA	0.5890	0.5915	0.5440	0.5279	0.6934	0.6959
									MCP	0.6422	0.6266	0.6451	0.6729	0.7002	0.7095
									DeepGini	0.6994	0.6973	0.7097	0.7338	0.7913	0.8142
									PRIMA	0.8380	0.8091	0.7980	0.7879	0.8611	0.8840
									CertPri	0.7975	0.8261	0.8382	0.8532	0.8895	0.9394
41	IMDB	CNN-I	CNN	10000	original	text	C	N+W	LSA	0.3770	0.4725	0.4552	0.5437	0.5628	0.7195
									DSA	0.4513	0.5593	0.6589	0.6486	0.6720	0.7227
									MCP	0.6051	0.7051	0.7546	0.8095	0.7930	0.7962
									DeepGini	0.6550	0.6946	0.7992	0.8503	0.8301	0.8669
									PRIMA	0.6666	0.7352	0.7988	0.8656	0.8676	0.8885
									CertPri	0.7375	0.7495	0.8050	0.8857	0.8430	0.9211
42	IMDB	LSTM-I	LSTM	10000	original	text	C	N+W	LSA	0.0996	0.0896	0.1092	0.1158	0.1184	0.4425
									DSA	0.3668	0.2704	0.2387	0.2632	0.1935	0.5052
									MCP	0.3963	0.3938	0.4271	0.4363	0.4146	0.7742
									DeepGini	0.3892	0.4110	0.4388	0.4334	0.4320	0.8069
									PRIMA	0.5931	0.5750	0.5275	0.5294	0.4988	0.8201
									CertPri	0.6896	0.6519	0.6595	0.6201	0.6044	0.8921
43	Reuters	CNN-R	CNN	2246	original	text	C	N+W	LSA	0.3867	0.5032	0.4823	0.5630	0.5592	0.7371
									DSA	0.4882	0.5807	0.6759	0.6727	0.6556	0.7644
									MCP	0.6098	0.7103	0.7821	0.8707	0.8160	0.8170
									DeepGini	0.6408	0.7534	0.8378	0.8926	0.8244	0.9031
									PRIMA	0.7118	0.6798	0.7123	0.8223	0.8404	0.8925
									CertPri	0.7691	0.7806	0.8276	0.8780	0.8497	0.9387
44	Reuters	LSTM-R	LSTM	2246	original	text	C	N+W	LSA	0.2040	0.2893	0.2505	0.3003	0.2612	0.5072
									DSA	0.3994	0.2823	0.2530	0.3297	0.3203	0.5213
									MCP	0.4098	0.3948	0.4428	0.4580	0.4092	0.7700
									DeepGini	0.4208	0.4531	0.4313	0.4475	0.4401	0.8095
									PRIMA	0.6023	0.5754	0.5474	0.6444	0.5382	0.7814
									CertPri	0.7022	0.7032	0.6797	0.6408	0.6428	0.8951
45	VCTK10	LSTM-V	LSTM	400	original	speech	C	N+W	LSA	0.3605	0.2370	0.5434	n/a	n/a	0.5847
									DSA	0.3112	0.2946	0.5888	n/a	n/a	0.5189
									MCP	0.5864	0.6052	0.7126	n/a	n/a	0.7762
									DeepGini	0.6228	0.6335	0.7861	n/a	n/a	0.8667
									PRIMA	0.4252	0.5022	0.8449	n/a	n/a	0.8807
									CertPri	0.7294	0.7818	0.8418	n/a	n/a	0.8520
46	RML8PSK	LSTM-RML	LSTM	312	original	signal	R	N+W	LSA	0.3558	0.3728	0.5971	n/a	n/a	0.6310
									DSA	n/a	n/a	n/a	n/a	n/a	n/a
									MCP	n/a	n/a	n/a	n/a	n/a	n/a
									DeepGini	n/a	n/a	n/a	n/a	n/a	n/a
									PRIMA	0.7342	0.7149	0.7109	n/a	n/a	0.7671
									CertPri	0.8207	0.7875	0.8117	n/a	n/a	0.8529
47	Cora	GCN-C	GCN	1000	original	graph	C	N+W	LSA	0.3402	0.2479	0.2313	0.2123	0.5871	0.5871
									DSA	0.3271	0.2920	0.2814	0.2401	0.5186	0.5186
									MCP	0.5259	0.5722	0.6009	0.5039	0.7344	0.7344
									DeepGini	0.6344	0.6146	0.5900	0.5580	0.8375	0.8375
									PRIMA	0.4073	0.4492	0.5008	0.5046	0.6541	0.6541
									CertPri	0.7527	0.7289	0.6927	0.6885	0.8550	0.8550

48	Adult	LFCN-A	FCN	10000	original	structured	C	N+W	LSA	0.4765	0.5000	0.4869	0.5370	0.5091	0.6601
									DSA	0.5253	0.5413	0.5175	0.5280	0.5333	0.7726
									MCP	0.6012	0.5714	0.5697	0.4895	0.5526	0.7949
									DeepGini	0.5354	0.5906	0.5571	0.5409	0.5702	0.7870
									PRIMA	0.6048	0.5776	0.5851	0.5762	0.5469	0.7811
									CertPri	0.5911	0.6140	0.6086	0.6047	0.5906	0.8156
49	COMPAS	HFCN-C	FCN	1000	original	structured	C	N+W	LSA	0.4778	0.5246	0.5085	0.5634	0.6411	0.6411
									DSA	0.5247	0.5553	0.5534	0.5016	0.7466	0.7466
									MCP	0.5623	0.5920	0.5818	0.4868	0.7556	0.7556
									DeepGini	0.5261	0.5895	0.5391	0.5484	0.8185	0.8185
									PRIMA	0.5801	0.5920	0.5702	0.5493	0.7843	0.7843
									CertPri	0.5719	0.6149	0.6049	0.5956	0.8105	0.8105
50	Boston	FCN-B	FCN	102	original	structured	R	N+W	LSA	0.6580	n/a	n/a	n/a	n/a	0.6644
									DSA	n/a	n/a	n/a	n/a	n/a	n/a
									MCP	n/a	n/a	n/a	n/a	n/a	n/a
									DeepGini	n/a	n/a	n/a	n/a	n/a	n/a
									PRIMA	0.7851	n/a	n/a	n/a	n/a	0.7773
									CertPri	0.8467	n/a	n/a	n/a	n/a	0.8734

D.5 Repeat 5th

ID	Datasets	Models	Struc.	#Inputs	Types	Forms	Tas.	Sce.	Methods	RAUC-100	RAUC-200	RAUC-300	RAUC-500	RAUC-1000	RAUC-all
1	CIFAR10	ResNet50	CNN	10000	original	image	C	N+W	LSA	0.4097	0.2783	0.2455	0.2573	0.2534	0.6340
									DSA	0.3711	0.3454	0.3144	0.2616	0.2818	0.6320
									MCP	0.3796	0.3527	0.3385	0.4373	0.4478	0.8087
									DeepGini	0.6464	0.6399	0.6212	0.5938	0.5730	0.8200
									PRIMA	0.8406	0.8011	0.7747	0.7798	0.6920	0.9479
									CertPri	0.8715	0.8081	0.8118	0.7700	0.7362	0.9390
2	CIFAR10	ResNet50	CNN	10000	original	image	C	N+B	LSA	n/a	n/a	n/a	n/a	n/a	n/a
									DSA	n/a	n/a	n/a	n/a	n/a	n/a
									MCP	0.3796	0.3527	0.3385	0.4373	0.4478	0.8087
									DeepGini	0.6464	0.6399	0.6212	0.5938	0.5730	0.8200
									PRIMA	0.4576	0.4283	0.4078	0.4006	0.4102	0.7096
									CertPri	0.8600	0.8195	0.8123	0.7596	0.7186	0.8874
3	CIFAR10	ResNet50	CNN	10000	+BIM	image	C	N+W	LSA	0.7683	0.7743	0.7381	0.7075	0.6760	0.7511
									DSA	0.8294	0.8274	0.8359	0.8185	0.7767	0.7404
									MCP	0.8596	0.8161	0.8267	0.8064	0.7845	0.7042
									DeepGini	0.9541	0.9438	0.9523	0.9499	0.9250	0.8973
									PRIMA	1.0000	1.0000	1.0000	0.9668	0.9442	0.9594
									CertPri	0.9916	0.9886	0.9892	0.9736	0.9809	0.9451
4	CIFAR10	ResNet50	CNN	10000	+C&W	image	C	N+W	LSA	0.8739	0.8106	0.7971	0.7795	0.7709	0.7784
									DSA	0.8890	0.8668	0.8461	0.8106	0.7611	0.7719
									MCP	0.6377	0.7428	0.7581	0.7391	0.7433	0.7912
									DeepGini	0.8749	0.8662	0.8946	0.8680	0.8774	0.9027
									PRIMA	1.0000	1.0000	0.9545	0.9438	0.9438	0.9876
									CertPri	0.9920	0.9702	0.9615	0.9624	0.9616	0.9718
5	CIFAR10	ResNet50	CNN	10000	FineFool	image	C	N+W	LSA	0.8389	0.8048	0.7790	0.7254	0.7575	0.7846
									DSA	0.8369	0.8041	0.8032	0.7798	0.7445	0.7669
									MCP	0.8698	0.8659	0.8791	0.8495	0.8480	0.8663
									DeepGini	0.8913	0.8894	0.8913	0.8909	0.8628	0.8878
									PRIMA	0.9401	0.9294	0.9511	0.9385	0.9336	0.9421
									CertPri	0.9527	0.9727	0.9909	0.9694	0.9875	0.9997
6	CIFAR10	ResNet50	CNN	10000	+AdapS	image	C	N+W	LSA	0.2521	0.1634	0.1181	0.1352	0.1244	0.3598
									DSA	0.2169	0.1640	0.2071	0.1686	0.1051	0.3437
									MCP	0.2206	0.2428	0.2486	0.3339	0.3158	0.6718
									DeepGini	0.5564	0.4723	0.4795	0.4847	0.4498	0.6501
									PRIMA	0.5387	0.5522	0.4862	0.4992	0.3875	0.5981
									CertPri	0.8747	0.8192	0.7902	0.7355	0.7336	0.9165
7	CIFAR10	ResNet50	CNN	10000	+AdapC	image	C	N+W	LSA	0.3209	0.2107	0.1767	0.1962	0.1361	0.5542
									DSA	0.2937	0.2650	0.2649	0.1980	0.1831	0.5767
									MCP	0.1283	0.1287	0.1349	0.1484	0.1687	0.2976
									DeepGini	0.1640	0.1405	0.1603	0.1995	0.1439	0.3009
									PRIMA	0.6070	0.5675	0.5757	0.5508	0.4698	0.6853
									CertPri	0.8610	0.8136	0.8057	0.7663	0.7046	0.9024
8	CIFAR10	ResNet50	CNN	10000	+AdapM	image	C	N+W	LSA	0.2097	0.1021	0.1713	0.0970	0.1166	0.4690
									DSA	0.2052	0.1786	0.1284	0.1423	0.1255	0.4588
									MCP	0.2255	0.2027	0.2330	0.3235	0.3116	0.6532
									DeepGini	0.5445	0.5011	0.5035	0.4889	0.4492	0.6598
									PRIMA	0.3700	0.3481	0.3541	0.3497	0.3105	0.4586
									CertPri	0.8594	0.8279	0.7917	0.7567	0.7328	0.9319
9	CIFAR10	VGG16	CNN	10000	original	image	C	N+W	LSA	0.4086	0.2912	0.2477	0.2536	0.2441	0.6236
									DSA	0.3426	0.2976	0.2838	0.2826	0.2685	0.6599
									MCP	0.3489	0.3724	0.3751	0.4348	0.4569	0.7672
									DeepGini	0.6518	0.5959	0.6297	0.5927	0.5584	0.8128
									PRIMA	0.8260	0.7764	0.7608	0.7397	0.7030	0.8996
									CertPri	0.8665	0.8316	0.7727	0.7362	0.7119	0.9124
10	CIFAR10	VGG16	CNN	10000	original	image	C	N+B	LSA	n/a	n/a	n/a	n/a	n/a	n/a
									DSA	n/a	n/a	n/a	n/a	n/a	n/a
									MCP	0.3489	0.3724	0.3751	0.4348	0.4569	0.7672
									DeepGini	0.6518	0.5959	0.6297	0.5927	0.5584	0.8128
									PRIMA	0.4504	0.4234	0.4549	0.4116	0.3855	0.6755
									CertPri	0.8877	0.7998	0.7900	0.7588	0.7016	0.8779
11	CIFAR10	VGG16	CNN	10000	+BIM	image	C	N+W	LSA	0.7658	0.7392	0.7302	0.6681	0.7158	0.7774
									DSA	0.8392	0.7854	0.8486	0.8027	0.7716	0.7850
									MCP	0.8282	0.8111	0.8181	0.7847	0.7637	0.6755
									DeepGini	0.9746	0.9564	0.9574	0.9233	0.9350	0.9118
									PRIMA	0.9953	0.9670	0.9473	0.9426	0.9678	0.9333
									CertPri	0.9857	0.9555	0.9255	0.9080	0.9601	0.9537
12	CIFAR10	VGG16	CNN	10000	+C&W	image	C	N+W	LSA	0.8564	0.8375	0.8377	0.7969	0.7461	0.8005
									DSA	0.8670	0.8652	0.8537	0.7901	0.8141	0.7424
									MCP	0.6066	0.7637	0.7442	0.7352	0.7425	0.7513
									DeepGini	0.9113	0.8907	0.8930	0.8823	0.9052	0.8852
									PRIMA	0.9763	0.9950	0.8973	0.9307	0.9392	0.9519
									CertPri	0.9220	0.9593	0.9803	0.9462	0.9708	0.9592
13	CIFAR10	VGG16	CNN	10000	FineFool	image	C	N+W	LSA	0.8143	0.7814	0.7851	0.7760	0.7268	0.7349
									DSA	0.8162	0.8116	0.7776	0.7602	0.7938	0.7556
									MCP	0.8251	0.8697	0.8695	0.8179	0.8365	0.8517
									DeepGini	0.8600	0.9195	0.8692	0.8529	0.8638	0.9009
									PRIMA	0.9580	0.9700	0.9674	0.9689	0.9086	0.9498
									CertPri	0.9343	0.9827	0.9841	0.9176	0.9886	0.9639
14	CIFAR10	VGG16	CNN	10000	+AdapS	image	C	N+W	LSA	0.2559	0.1580	0.1333	0.0954	0.1211	0.3642
									DSA	0.2229	0.1798	0.1833	0.2006	0.0806	0.3406
									MCP	0.2430	0.2572	0.2324	0.3555	0.3689	0.6629
									DeepGini	0.5321	0.4749	0.4696	0.4497	0.4780	0.6722
									PRIMA	0.5371	0.5558	0.4470	0.5292	0.4230	0.6220
									CertPri	0.8685	0.8278	0.8291	0.7667	0.7461	0.8906
15	CIFAR10	VGG16	CNN	10000	+AdapC	image	C	N+W	LSA	0.3176	0.2114	0.2089	0.2099	0.1663	0.5323
									DSA	0.3269	0.2817	0.2568	0.2231	0.2212	0.5813
									MCP	0.1014	0.1404	0.1361	0.1143	0.1327	0.2871
									DeepGini	0.1431	0.1679	0.1122	0.2126	0.1638	0.2749
									PRIMA	0.6262	0.5754	0.5303	0.5261	0.4694	0.6838
									CertPri	0.8439	0.8029	0.7680	0.7549	0.7501	0.9175
									LSA	0.2231	0.1163	0.1542	0.1157	0.1084	0.4564
									DSA	0.2221	0.1800	0.0875	0.1189	0.1216	0.4695

16	CIFAR10	VGG16	CNN	10000	+AdapM	image	C	N+W	MCP	0.2526	0.2005	0.2074	0.2879	0.3372	0.6881
									DeepGini	0.5492	0.5080	0.4938	0.4705	0.4553	0.6787
									PRIMA	0.3826	0.3556	0.3747	0.3430	0.3034	0.4579
									CertPri	0.8666	0.8091	0.7839	0.7444	0.7043	0.9331
17	ImageNet	ResNet101	CNN	5000	original	image	C	N+W	LSA	0.3831	0.2907	0.2748	0.2102	0.2208	0.6361
									DSA	0.3284	0.3026	0.2687	0.2701	0.2757	0.6361
									MCP	0.3422	0.3570	0.3478	0.4477	0.4398	0.7784
									DeepGini	0.6329	0.6106	0.5634	0.5543	0.5219	0.7837
									PRIMA	0.7368	0.7160	0.7052	0.5859	0.5828	0.8021
									CertPri	0.7667	0.7455	0.6500	0.6298	0.5872	0.8339
18	ImageNet	ResNet101	CNN	5000	original	image	C	N+B	LSA	n/a	n/a	n/a	n/a	n/a	n/a
									DSA	n/a	n/a	n/a	n/a	n/a	n/a
									MCP	0.3422	0.3570	0.3478	0.4477	0.4398	0.7784
									DeepGini	0.6329	0.6106	0.5634	0.5543	0.5219	0.7837
									PRIMA	0.3705	0.5244	0.3912	0.3938	0.4039	0.5801
									CertPri	0.7490	0.7760	0.6503	0.6583	0.5724	0.8340
19	ImageNet	ResNet101	CNN	5000	+BIM	image	C	N+W	LSA	0.6355	0.6216	0.5871	0.4471	0.4472	0.4943
									DSA	0.5726	0.5892	0.5590	0.5589	0.5327	0.5107
									MCP	0.5838	0.7271	0.5446	0.6888	0.6786	0.4142
									DeepGini	0.8331	0.6593	0.8264	0.6683	0.6479	0.6264
									PRIMA	0.8469	0.7272	0.9024	0.6582	0.8539	0.6360
									CertPri	0.8430	0.8138	0.8408	0.9323	0.8078	0.9028
20	ImageNet	ResNet101	CNN	5000	+C&W	image	C	N+W	LSA	0.5976	0.5892	0.6565	0.6485	0.5966	0.5991
									DSA	0.6165	0.7102	0.7175	0.5792	0.5209	0.5305
									MCP	0.5174	0.6249	0.6097	0.4718	0.4747	0.6693
									DeepGini	0.5930	0.5983	0.6215	0.5877	0.5942	0.7757
									PRIMA	0.9316	0.8741	0.8053	0.8319	0.8585	0.6718
									CertPri	0.9700	0.9400	0.8294	0.8281	0.8325	0.9219
21	ImageNet	ResNet101	CNN	5000	FineFool	image	C	N+W	LSA	0.5734	0.5360	0.5419	0.5909	0.6094	0.5140
									DSA	0.6824	0.5442	0.6421	0.6098	0.6116	0.5240
									MCP	0.5696	0.5873	0.7413	0.5687	0.5498	0.5540
									DeepGini	0.7679	0.7762	0.5901	0.5838	0.5804	0.5905
									PRIMA	0.8073	0.8556	0.8290	0.8538	0.6275	0.6530
									CertPri	0.8307	0.9208	0.9383	0.8170	0.9400	0.9501
22	ImageNet	ResNet101	CNN	5000	+AdapS	image	C	N+W	LSA	0.2354	0.0598	0.1476	0.0218	0.1891	0.3028
									DSA	0.1636	0.1285	0.2522	0.1852	0.0401	0.3073
									MCP	0.2030	0.2980	0.3241	0.3599	0.4199	0.5938
									DeepGini	0.5596	0.5508	0.4226	0.3874	0.4069	0.7003
									PRIMA	0.5036	0.5070	0.4237	0.4796	0.3192	0.4878
									CertPri	0.7028	0.7819	0.6690	0.6115	0.6650	0.8619
23	ImageNet	ResNet101	CNN	5000	+AdapC	image	C	N+W	LSA	0.3097	0.2501	0.1769	0.1975	0.1397	0.5200
									DSA	0.3032	0.3063	0.2407	0.2169	0.2574	0.5167
									MCP	0.0589	0.1009	0.1848	0.0165	0.1337	0.3436
									DeepGini	0.1545	0.0683	0.1470	0.1052	0.2072	0.2401
									PRIMA	0.5857	0.5869	0.6066	0.5256	0.4282	0.6761
									CertPri	0.8221	0.8106	0.7298	0.6928	0.6768	0.8666
24	ImageNet	ResNet101	CNN	5000	+AdapM	image	C	N+W	LSA	0.1716	0.1230	0.2044	0.0625	0.1192	0.4598
									DSA	0.1498	0.1536	0.1441	0.1145	0.1594	0.4853
									MCP	0.2883	0.2328	0.1853	0.2842	0.3891	0.6939
									DeepGini	0.5582	0.4797	0.4855	0.4713	0.3991	0.6453
									PRIMA	0.3441	0.3803	0.3305	0.3348	0.3163	0.3974
									CertPri	0.8048	0.7526	0.6995	0.6526	0.6660	0.8176
25	ImageNet	VGG19	CNN	5000	original	image	C	N+W	LSA	0.3511	0.3075	0.2411	0.2238	0.2201	0.6766
									DSA	0.3104	0.3098	0.2982	0.2298	0.2576	0.6183
									MCP	0.3342	0.3608	0.3124	0.4746	0.4463	0.7610
									DeepGini	0.6488	0.6324	0.5695	0.5291	0.5626	0.7801
									PRIMA	Out of Time	Out of Time	Out of Time	Out of Time	Out of Time	Out of Time
									CertPri	0.7730	0.7477	0.6606	0.6680	0.6183	0.8198
26	ImageNet	VGG19	CNN	5000	original	image	C	N+B	LSA	n/a	n/a	n/a	n/a	n/a	n/a
									DSA	n/a	n/a	n/a	n/a	n/a	n/a
									MCP	0.3342	0.3608	0.3124	0.4746	0.4463	0.7610
									DeepGini	0.6488	0.6324	0.5695	0.5291	0.5626	0.7801
									PRIMA	Out of Time	Out of Time	Out of Time	Out of Time	Out of Time	Out of Time
									CertPri	0.7354	0.7588	0.6889	0.6546	0.5762	0.8756
27	ImageNet	VGG19	CNN	5000	+BIM	image	C	N+W	LSA	0.6120	0.5929	0.5706	0.4959	0.4258	0.4748
									DSA	0.5619	0.5949	0.5885	0.5656	0.5431	0.4756
									MCP	0.5818	0.6812	0.5767	0.7065	0.6309	0.4144
									DeepGini	0.8087	0.6989	0.8016	0.6910	0.6352	0.6363
									PRIMA	Out of Time	Out of Time	Out of Time	Out of Time	Out of Time	Out of Time
									CertPri	0.8711	0.8446	0.8702	0.9223	0.8519	0.8853
28	ImageNet	VGG19	CNN	5000	+C&W	image	C	N+W	LSA	0.5902	0.5716	0.6542	0.6387	0.6038	0.6245
									DSA	0.6510	0.7380	0.7004	0.5703	0.5416	0.5178
									MCP	0.4930	0.6330	0.5855	0.4466	0.4189	0.6582
									DeepGini	0.5605	0.5803	0.6097	0.5794	0.6361	0.7515
									PRIMA	Out of Time	Out of Time	Out of Time	Out of Time	Out of Time	Out of Time
									CertPri	0.9594	0.9199	0.8122	0.8196	0.8575	0.9229
29	ImageNet	VGG19	CNN	5000	FineFool	image	C	N+W	LSA	0.5409	0.5576	0.5387	0.5722	0.6296	0.5221
									DSA	0.7057	0.5602	0.6508	0.6302	0.6193	0.5472
									MCP	0.5764	0.5763	0.7478	0.5406	0.5670	0.5550
									DeepGini	0.7792	0.7929	0.6000	0.5959	0.5875	0.5972
									PRIMA	Out of Time	Out of Time	Out of Time	Out of Time	Out of Time	Out of Time
									CertPri	0.8164	0.9316	0.9280	0.7977	0.9346	0.9237
30	ImageNet	VGG19	CNN	5000	+AdapS	image	C	N+W	LSA	0.2323	0.0688	0.1288	0.0504	0.1975	0.3006
									DSA	0.1736	0.1213	0.2574	0.1381	0.0810	0.3001
									MCP	0.1945	0.3038	0.3097	0.3784	0.4283	0.6114
									DeepGini	0.5980	0.5286	0.4146	0.4145	0.4113	0.6888
									PRIMA	Out of Time	Out of Time	Out of Time	Out of Time	Out of Time	Out of Time
									CertPri	0.7368	0.7955	0.6681	0.5862	0.6542	0.8527
31	ImageNet	VGG19	CNN	5000	+AdapC	image	C	N+W	LSA	0.2926	0.2349	0.1563	0.2405	0.1095	0.4949
									DSA	0.3105	0.3101	0.2188	0.2607	0.2535	0.5623
									MCP	0.0540	0.1053	0.1949	0.0099	0.1511	0.3451
									DeepGini	0.1124	0.0899	0.1775	0.1300	0.1909	0.2529
									PRIMA	Out of Time	Out of Time	Out of Time	Out of Time	Out of Time	Out of Time
									CertPri	0.7870	0.7862	0.7533	0.6960	0.6503	0.8711
									LSA	0.1736	0.1249	0.1992	0.0475	0.1282	0.4721

32	ImageNet	VGG19	CNN	5000	+AdapM	image	C	N+W	DSA	0.1549	0.1821	0.1189	0.1180	0.1266	0.5149
									MCP	0.2788	0.1981	0.2084	0.2705	0.3679	0.6756
									DeepGini	0.5746	0.4542	0.4860	0.4637	0.4088	0.6360
									PRIMA	Out of Time	Out of Time	Out of Time	Out of Time	Out of Time	Out of Time
									CertPri	0.7900	0.7521	0.6958	0.6331	0.6786	0.8136
33	DrivingSA	VGG19-AD	CNN	5279	original	image	R	N+W	LSA	0.3737	0.4018	0.4144	0.4322	0.4583	0.6452
									DSA	n/a	n/a	n/a	n/a	n/a	n/a
									MCP	n/a	n/a	n/a	n/a	n/a	n/a
									DeepGini	n/a	n/a	n/a	n/a	n/a	n/a
									PRIMA	0.8236	0.7983	0.7644	0.7318	0.6973	0.7691
									CertPri	0.8017	0.8447	0.8544	0.8154	0.7853	0.8587
34	DrivingSA	VGG19-AD	CNN	5279	original	image	R	N+B	LSA	n/a	n/a	n/a	n/a	n/a	n/a
									DSA	n/a	n/a	n/a	n/a	n/a	n/a
									MCP	n/a	n/a	n/a	n/a	n/a	n/a
									DeepGini	n/a	n/a	n/a	n/a	n/a	n/a
									PRIMA	0.3827	0.3932	0.3785	0.3760	0.3452	0.4181
									CertPri	0.8054	0.8329	0.7938	0.8131	0.8167	0.8467
35	DrivingSA	VGG19-AD	CNN	5279	patch	image	R	N+W	LSA	0.3164	0.3533	0.3534	0.3744	0.4542	0.6837
									DSA	n/a	n/a	n/a	n/a	n/a	n/a
									MCP	n/a	n/a	n/a	n/a	n/a	n/a
									DeepGini	n/a	n/a	n/a	n/a	n/a	n/a
									PRIMA	0.8174	0.8205	0.7986	0.7813	0.7495	0.7817
									CertPri	0.8383	0.8190	0.8448	0.8469	0.8119	0.8608
36	DrivingSA	VGG19-AD	CNN	5279	aturation	image	R	N+W	LSA	0.4597	0.4200	0.4619	0.4682	0.4852	0.6720
									DSA	n/a	n/a	n/a	n/a	n/a	n/a
									MCP	n/a	n/a	n/a	n/a	n/a	n/a
									DeepGini	n/a	n/a	n/a	n/a	n/a	n/a
									PRIMA	0.7525	0.7780	0.7821	0.7988	0.8451	0.8516
									CertPri	0.8126	0.7980	0.8072	0.8028	0.7921	0.8980
37	FMNIST	AlexNet	CNN	10000	original	image	C	N+W	LSA	0.3941	0.4409	0.5085	0.6562	0.8093	0.9200
									DSA	0.4898	0.5516	0.6264	0.7169	0.8272	0.9490
									MCP	0.4676	0.5819	0.6737	0.7283	0.8503	0.9081
									DeepGini	0.4761	0.5782	0.6750	0.7855	0.8541	0.9465
									PRIMA	0.4968	0.5152	0.6161	0.7297	0.8354	0.9529
									CertPri	0.4806	0.5832	0.7000	0.8234	0.8276	0.9924
38	FMNIST_P	AlexNet-P	CNN	10000	original	image	C	P+W	LSA	0.4586	0.4069	0.3785	0.3377	0.3267	0.5872
									DSA	0.5805	0.5025	0.4772	0.3993	0.4090	0.6267
									MCP	0.4484	0.4964	0.4825	0.4735	0.4209	0.5408
									DeepGini	0.5086	0.4958	0.4655	0.4974	0.3591	0.5597
									PRIMA	0.9928	0.9804	0.9849	0.9882	0.9338	0.9940
									CertPri	0.9967	0.9948	0.9911	0.9783	0.9636	0.9845
39	Ants_Bees	VGG16-AB	CNN	153	original	image	C	T+W	LSA	0.5814	n/a	n/a	n/a	n/a	0.6728
									DSA	0.6712	n/a	n/a	n/a	n/a	0.6910
									MCP	0.7805	n/a	n/a	n/a	n/a	0.7616
									DeepGini	0.8545	n/a	n/a	n/a	n/a	0.8876
									PRIMA	0.9104	n/a	n/a	n/a	n/a	0.9222
									CertPri	0.9365	n/a	n/a	n/a	n/a	0.9610
40	Cats_Dogs	VGG19-CD	CNN	5000	original	image	C	T+W	LSA	0.4190	0.3893	0.3799	0.3914	0.5798	0.5868
									DSA	0.5860	0.5771	0.5463	0.5266	0.6805	0.7250
									MCP	0.6669	0.6438	0.6459	0.6538	0.7041	0.7059
									DeepGini	0.6842	0.7051	0.7261	0.7429	0.7779	0.8160
									PRIMA	0.8491	0.8380	0.8111	0.8214	0.8406	0.8874
									CertPri	0.8110	0.8185	0.8233	0.8340	0.8840	0.9373
41	IMDB	CNN-I	CNN	10000	original	text	C	N+W	LSA	0.3793	0.4666	0.4766	0.5352	0.5542	0.6915
									DSA	0.4532	0.5541	0.6546	0.6503	0.6448	0.7286
									MCP	0.6104	0.7039	0.7482	0.8289	0.7827	0.8108
									DeepGini	0.6272	0.7052	0.7886	0.8315	0.8343	0.8888
									PRIMA	0.6707	0.7214	0.8066	0.8573	0.8643	0.8816
									CertPri	0.7197	0.7240	0.7783	0.8732	0.8717	0.9194
42	IMDB	LSTM-I	LSTM	10000	original	text	C	N+W	LSA	0.1117	0.0959	0.0988	0.1374	0.1291	0.4468
									DSA	0.3658	0.2841	0.2212	0.2706	0.1864	0.4883
									MCP	0.3847	0.3821	0.4076	0.4301	0.3893	0.7779
									DeepGini	0.4052	0.4013	0.4369	0.4311	0.4396	0.8031
									PRIMA	0.6189	0.5451	0.5335	0.5113	0.5099	0.7958
									CertPri	0.6949	0.6612	0.6328	0.6437	0.6133	0.8862
43	Reuters	CNN-R	CNN	2246	original	text	C	N+W	LSA	0.4066	0.5287	0.4895	0.5821	0.5703	0.7540
									DSA	0.4782	0.5509	0.6830	0.6672	0.6746	0.7534
									MCP	0.6302	0.7092	0.7827	0.8546	0.8385	0.8227
									DeepGini	0.6369	0.7577	0.8245	0.8811	0.8339	0.9209
									PRIMA	0.7198	0.7047	0.7149	0.7952	0.8429	0.8983
									CertPri	0.7610	0.7510	0.8133	0.9026	0.8602	0.9666
44	Reuters	LSTM-R	LSTM	2246	original	text	C	N+W	LSA	0.2199	0.2745	0.2227	0.3083	0.2577	0.4979
									DSA	0.4213	0.2948	0.2503	0.3059	0.3265	0.5193
									MCP	0.4377	0.4022	0.4442	0.4401	0.4154	0.7785
									DeepGini	0.4222	0.4449	0.4231	0.4489	0.4513	0.8098
									PRIMA	0.6112	0.5660	0.5702	0.6521	0.5408	0.8107
									CertPri	0.6962	0.6962	0.6782	0.6386	0.6518	0.8906
45	VCTK10	LSTM-V	LSTM	400	original	speech	C	N+W	LSA	0.3406	0.2476	0.5494	n/a	n/a	0.6026
									DSA	0.3456	0.3174	0.5885	n/a	n/a	0.5260
									MCP	0.6071	0.5984	0.7025	n/a	n/a	0.7757
									DeepGini	0.6331	0.6333	0.7784	n/a	n/a	0.8760
									PRIMA	0.4218	0.5092	0.8308	n/a	n/a	0.8660
									CertPri	0.7475	0.7614	0.8597	n/a	n/a	0.8679
46	RML8PSK	LSTM-RML	LSTM	312	original	signal	R	N+W	LSA	0.3495	0.3673	0.5848	n/a	n/a	0.6208
									DSA	n/a	n/a	n/a	n/a	n/a	n/a
									MCP	n/a	n/a	n/a	n/a	n/a	n/a
									DeepGini	n/a	n/a	n/a	n/a	n/a	n/a
									PRIMA	0.7141	0.7001	0.7406	n/a	n/a	0.7422
									CertPri	0.8041	0.7881	0.8361	n/a	n/a	0.8498
47	Cora	GCN-C	GCN	1000	original	graph	C	N+W	LSA	0.3688	0.2651	0.2253	0.2309	0.6076	0.6076
									DSA	0.3195	0.3066	0.2774	0.2396	0.5453	0.5453
									MCP	0.5610	0.5904	0.5953	0.5066	0.7356	0.7356
									DeepGini	0.6336	0.5893	0.5700	0.5728	0.8589	0.8589
									PRIMA	0.4372	0.4660	0.5157	0.4911	0.6558	0.6558
									CertPri	0.7380	0.7369	0.7132	0.6797	0.8398	0.8398

48	Adult	LFCN-A	FCN	10000	original	structured	C	N+W	LSA	0.4539	0.4973	0.4918	0.5413	0.5103	0.6530
									DSA	0.5190	0.5377	0.5068	0.5410	0.5250	0.7709
									MCP	0.6025	0.5848	0.5533	0.4942	0.5594	0.7976
									DeepGini	0.5562	0.5825	0.5850	0.5285	0.5673	0.7959
									PRIMA	0.5878	0.5775	0.5857	0.5584	0.5366	0.8024
									CertPri	0.5912	0.6107	0.6043	0.5859	0.5826	0.7959
49	COMPAS	HFCN-C	FCN	1000	original	structured	C	N+W	LSA	0.4720	0.5272	0.5080	0.5410	0.6583	0.6583
									DSA	0.5217	0.5449	0.5368	0.5137	0.7646	0.7646
									MCP	0.5647	0.5669	0.5670	0.5056	0.7510	0.7510
									DeepGini	0.5076	0.5741	0.5387	0.5333	0.7899	0.7899
									PRIMA	0.5892	0.6160	0.5863	0.5350	0.7914	0.7914
									CertPri	0.5622	0.6385	0.6071	0.6081	0.8485	0.8485
50	Boston	FCN-B	FCN	102	original	structured	R	N+W	LSA	0.6477	n/a	n/a	n/a	n/a	0.6746
									DSA	n/a	n/a	n/a	n/a	n/a	n/a
									MCP	n/a	n/a	n/a	n/a	n/a	n/a
									DeepGini	n/a	n/a	n/a	n/a	n/a	n/a
									PRIMA	0.7903	n/a	n/a	n/a	n/a	0.7876
									CertPri	0.8445	n/a	n/a	n/a	n/a	0.8729