A. APPENDIX

Model/Images	Train, Real	Train, Fake	Valid, Real	Valid, Fake
Midjourney	162000	162000	6000	6000
Stable Diffusion v 1.4	162000	162000	6000	6000
Stable Diffusion v 1.5	166000	166000	8000	8000
Guided Diffusion	162000	162000	6000	6000
GLIDE	162000	162000	6000	6000
VQDM	162000	162000	6000	6000
Wukong	162000	162000	6000	6000
BigGAN	162000	162000	6000	6000

Table 4: No.of real and fake images in training and validation datasets of GenImage dataset. Each training and validation set is comprised of non-overlapping sets of real images from ImageNet.

Model/Images	Train, Real	Train, Fake	Valid, Real	Valid, Fake
LDM	118287	118287	5000	5000
SD v1.4	118287	118287	5000	5000
SD v1.5	118287	118287	5000	5000
SD v2	118287	118287	5000	5000
SD XL	118287	118287	5000	5000
SD XL Refiner	118287	118287	5000	5000
SD Turbo	118287	118287	5000	5000
LCM SD v1.5	118287	118287	5000	5000
LCM SD XL	118287	118287	5000	5000
SD v1 Ctrl	118287	118287	5000	5000
SD v2 Ctrl	118287	118287	5000	5000
SD XL Ctrl	118287	118287	5000	5000
SD v1 DR	118287	118287	5000	5000
SD v2 DR	118287	118287	5000	5000
SD XL DR	118287	118287	5000	5000

Table 5: No.of real and fake images in training and validation datasets of DRCT-2M dataset. Each training and validation set is comprised of the same set of real images from MSCOCO dataset.

Detection Method	Midjourney	Stable Diffusion v1.4	Stable Diffusion v1.5	Guided Diffusion (ADM)	GLIDE	Wukong	VQDM	BigGAN	mAcc(%)
DRCT/ConvNext-B	(99.78, 89.47)	(99.77, 100.0)	(99.76, 99.89)	(99.77, 23.83)	(99.7, 32.12)	(99.83, 99.98)	(99.8, 49.97)	(99.82, 19.82)	(99.78, 64.39)
DRCT/UnivFD	(89.78, 93.22)	(90.3, 99.7)	(89.32, 99.5)	(90.23, 68.6)	(89.37, 89.0)	(90.07, 99.25)	(88.9, 91.15)	(89.82, 73.45)	(89.72, 89.23)
HyperIQA	(30.4, 92.82)	(31.95, 99.6)	(31.77, 99.38)	(31.53, 81.47)	(31.13, 88.88)	(31.78, 97.93)	(30.43, 87.1)	(31.7, 72.83)	(31.34, 90.0)
TReS	(40.28, 90.55)	(40.52, 99.7)	(40.14, 99.49)	(40.15, 64.33)	(39.57, 81.2)	(41.02, 98.88)	(39.98, 76.53)	(41.57, 25.83)	(40.4, 79.56)
ARNIQA	(72.25, 88.0)	(71.92, 99.37)	(71.66, 99.16)	(71.4, 73.38)	(71.77, 67.37)	(72.32, 97.08)	(71.08, 71.05)	(68.5, 51.9)	(71.36, 80.91)
ReIQA	(91.17, 80.2)	(91.15, 99.78)	(91.29, 99.7)	(91.15, 45.8)	(91.25, 53.93)	(91.67, 98.38)	(91.4, 59.8)	(79.5, 45.92)	(89.82, 72.94)
CONTRIQUE	(91.77, 90.13)	(92.12, 99.97)	(92.06, 99.78)	(92.23, 88.4)	(91.58, 89.8)	(92.52, 99.65)	(91.57, 89.35)	(42.47, 97.28)	(85.79, 94.3)

Table 6: The accuracy of detecting real images (first in a pair) and fake images (second in a pair) using various detection methods has been evaluated across various generative models on the GenImage test dataset.

Method	SD Variants						Turbo Variants		LCM Variants		ControlNet Variants			DR Variants			mAcc (%)
	LDM	SDv1.4	SDv1.5	SDv2	SDXL	SDXL-Refiner	SD-Turbo	SDXL-Turbo	LCM-SDv1.5	LCM-SDXL	SDv1-Ctrl	SDv2-Ctrl	SDXL-Ctrl	SDv1-DR	SDv2-DR	SDXL-DR	
DRCT/Conv-B	100.0	99.98	99.98	92.82	67.86	71.44	83.92	40.24	99.5	57.74	99.98	90.2	62.58	99.98	91.0	50.92	(99.82, 81.76)
DRCT/UnivFD	99.24	98.28	98.42	95.54	98.24	92.68	92.62	91.66	88.14	95.72	96.96	91.1	89.66	93.94	44.92	20.6	(94.22, 86.73)
HyperIQA	99.76	99.56	99.46	98.66	91.12	86.48	91.84	87.9	95.38	77.88	96.46	84.9	84.48	64.1	46.68	41.32	(65.02, 84.12)
TReS	99.8	99.72	99.7	99.16	84.5	83.08	84.1	82.76	96.6	76.48	97.78	86.86	93.22	53.62	31.12	29.28	(74.66, 81.11)
ARNIQA	99.96	99.74	99.6	99.4	86.76	91.1	87.0	88.68	93.78	70.38	98.14	84.46	86.88	87.06	54.18	28.42	(74.46, 84.72)
ReIQA	99.46	99.02	98.8	94.16	61.6	51.38	67.16	54.32	89.62	71.5	95.16	64.38	66.78	94.6	41.9	21.08	(93.44, 73.18)
CONTRIQUE	99.44	99.34	99.4	97.64	89.42	76.32	84.12	89.22	95.4	77.6	86.42	80.34	73.78	97.76	45.18	63.32	(97.8, 84.67)

Table 7: The accuracy of detecting fake images using various detection methods has been evaluated across various generative models on the DRCT test dataset. The mean accuracy column presents a tuple that shows the accuracy and mean accuracy of detecting real images (which are shared across all subsets of generative models) and fake images, respectively.
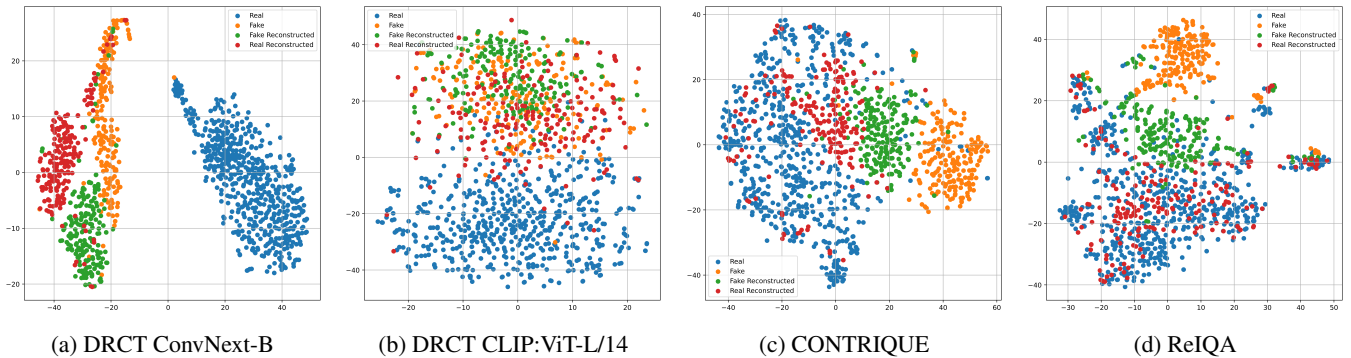

(a) DRCT ConvNext-B   (b) DRCT CLIP:ViT-L/14   (c) CONTRIQUE   (d) ReIQA

Fig. 3: t-SNE visualization of feature spaces used by the compared classifiers. The feature representations are associated with real and fake images from the Stable-Diffusionv1.4 (SDv1.4) subset of the DRCT-2M dataset along with real and fake images reconstructed using SDv1.