Benchmarking the Robustness of Deep Neural Networks to Common Corruptions in Digital Pathology (Appendix)

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Table A1. Robustness (mCE) on the Patchcamelyon-C and LocalTCT-C. The best and the worst results are emphasized by **value** and value, respectively.

	Digitization		Blur		Color			Stain		
Patchcamelyon										
Method	JPEG	Pixel	Defocu	Motion	Bright	Satura	Hue	Mark	Bubble	Avg
AlexNet	**20.99**	23.29	34.21	22.54	26.08	26.12	38.50	22.56	30.43	27.19
VGG16	25.90	**20.45**	40.30	20.38	**20.20**	16.97	30.61	**11.87**	**21.80**	23.16
ResNet18	26.37	24.27	34.92	20.37	31.06	17.39	32.16	13.43	23.62	24.84
ResNet34	23.73	21.79	35.34	19.95	29.09	18.05	28.15	13.41	22.89	23.60
ResNet50	29.79	24.75	48.32	20.96	35.06	26.42	36.12	14.13	24.04	28.84
ResNet101	23.94	21.70	37.91	**17.30**	32.80	21.91	33.88	13.59	23.30	25.15
MobileNet	36.73	26.95	40.59	20.18	28.17	17.97	32.16	12.95	23.73	26.60
ShuffleNet	23.47	26.84	**29.06**	20.95	35.49	27.37	**26.39**	18.37	27.45	26.15
Efficientb0	29.38	36.38	47.91	18.93	23.79	15.11	28.36	12.29	23.50	26.19
Efficientb7	31.05	26.86	38.35	17.50	28.63	**14.43**	30.62	12.43	24.14	24.89
LocalTCT										
AlexNet	**31.13**	23.38	40.68	32.88	21.23	23.89	41.85	24.17	36.50	30.64
VGG16	40.69	32.65	44.42	37.25	18.96	23.82	29.09	19.52	25.76	30.24
ResNet18	38.93	24.42	40.71	34.06	22.37	33.43	31.83	19.33	29.27	30.48
ResNet34	37.07	26.14	41.01	35.06	17.86	25.76	26.92	18.73	26.90	28.38
ResNet50	45.66	32.77	40.59	36.33	20.80	30.93	28.62	20.51	28.25	31.61
ResNet101	34.10	24.82	41.09	36.23	19.98	34.26	31.14	18.74	26.38	29.64
MobileNet	34.74	37.88	42.40	36.14	20.54	27.58	26.96	18.17	27.78	30.24
ShuffleNet	45.03	30.08	42.94	37.41	26.59	29.09	30.07	22.05	32.96	32.91
Efficientb0	40.22	36.66	44.19	37.50	19.08	25.32	23.65	19.08	28.90	30.51
Efficientb7	37.56	29.50	34.95	31.39	21.17	**17.50**	**23.04**	**17.69**	**24.43**	26.36
ViT	32.10	17.25	39.54	33.25	29.00	23.68	43.67	24.65	35.06	30.91
Swin Trans.	35.86	33.72	39.82	32.60	**17.49**	21.92	27.88	18.85	28.14	28.47
DeiT	33.39	**16.74**	**34.65**	**28.37**	19.57	25.70	40.52	19.94	31.36	27.81

⋆ equal contribution

Table A2. Confidence robustness (CEC) on the Patchcamelyon-C and LocalTCT-C. The best and the worst results are emphasized by **value** and value, respectively.

	Digitization		Blur		Color			Stain		
Patchcamelyon										
Method	JPEG	Pixel	Defocu	Motion	Bright	Satura	Hue	Mark	Bubble	Avg
AlexNet	53.93	51.50	54.33	54.56	57.75	56.55	72.54	45.62	57.07	55.98
VGG16	49.06	43.03	40.48	42.89	50.85	52.04	59.90	53.03	45.82	48.56
ResNet18	51.28	35.51	34.01	36.19	54.48	45.47	65.19	37.95	42.18	44.70
ResNet34	**46.37**	**32.03**	37.25	32.60	48.59	51.08	69.32	36.39	**37.61**	43.47
ResNet50	51.08	34.29	33.62	34.72	59.49	59.07	60.33	44.76	45.61	47.00
Resnet101	50.31	32.57	31.99	**31.54**	57.20	51.39	53.80	38.07	43.74	43.40
Mobilenet	52.04	35.81	38.02	36.33	**47.04**	54.35	48.42	35.79	50.89	44.30
Shufflenet	47.31	42.81	36.56	44.77	64.84	58.64	72.28	48.50	66.33	53.56
Efficientnetb0	47.06	37.75	40.16	31.85	48.08	**44.03**	57.50	**29.96**	48.40	42.75
Efficientnetb7	57.22	37.51	**28.12**	33.60	47.49	46.84	**48.31**	46.59	48.11	43.75
LocalTCT										
AlexNet	42.80	45.52	49.98	41.78	34.71	36.75	36.35	34.16	67.22	43.25
VGG16	57.91	49.99	55.77	43.87	34.51	35.39	33.31	50.12	36.60	44.16
ResNet18	52.75	43.90	57.92	44.26	34.08	34.88	40.23	38.81	25.90	41.41
ResNet34	**30.97**	41.18	64.88	54.97	31.19	32.57	36.22	35.20	**22.84**	38.89
ResNet50	34.21	31.20	54.22	42.33	37.14	44.46	34.58	57.03	37.54	41.41
ResNet101	35.49	**30.04**	45.11	41.98	**27.43**	39.27	**29.73**	37.40	40.13	36.29
MobileNet	49.05	71.72	49.46	43.04	31.59	40.13	36.06	29.66	41.81	43.61
ShuffleNet	60.12	45.12	78.77	56.17	39.41	36.13	34.99	29.63	42.50	46.98
Efficientb0	66.51	79.91	**38.44**	46.06	37.58	36.27	36.87	40.38	38.25	46.70
Efficientb7	61.47	66.37	49.76	41.15	44.53	35.85	34.21	**28.84**	34.84	44.11
ViT	50.97	40.31	58.96	54.51	37.84	**29.35**	47.10	54.52	60.53	48.23
Swin Trans.	46.31	50.82	54.84	**35.27**	27.79	58.51	43.52	42.62	46.07	45.08
DeiT	37.62	34.41	61.13	45.27	34.81	31.41	45.09	35.12	65.39	43.36

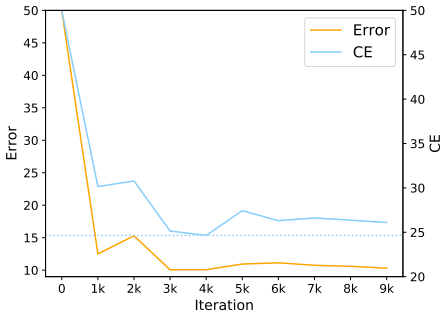

Fig. A1. After 4,000 iterations, the Error has stabilized, but the CE rise by one to two points.