

Table S1. Comparison of CNN models using dataset 1 with respect to accuracy, RMSE, weighted kappa (with standard deviation).

CNN Model	Epochs	70%-30% distribution			10-fold cross-validation		
		Accuracy (%)	RMSE	Weighted Kappa	Accuracy (%)	RMSE	Weighted Kappa
VGG-19	10	84.53	0.2577	0.8318	85.64	0.2466	0.8429
		(± 0.03)	(± 0.04)	(± 0.04)	(± 0.04)	(± 0.04)	(± 0.03)
	20	85.74	0.2456	0.8439	86.78	0.2352	0.8543
		(± 0.04)	(± 0.05)	(± 0.04)	(± 0.04)	(± 0.04)	(± 0.03)
	30	87.21	0.2309	0.8586	86.95	0.2335	0.8560
ResNet-50	10	90.23	0.2007	0.8888	95.23	0.1407	0.9488
		(± 0.04)	(± 0.04)	(± 0.04)	(± 0.04)	(± 0.04)	(± 0.04)
	20	90.45	0.1985	0.8910	96.59	0.1271	0.9624
		(± 0.04)	(± 0.04)	(± 0.04)	(± 0.04)	(± 0.04)	(± 0.04)
	30	93.54	0.1676	0.9219	97.13	0.1217	0.9678
Inception-V3	10	93.45	0.1685	0.9210	95.76	0.1454	0.9441
		(± 0.04)	(± 0.04)	(± 0.04)	(± 0.04)	(± 0.03)	(± 0.04)
	20	94.51	0.1579	0.9316	96.45	0.1385	0.9510
		(± 0.04)	(± 0.04)	(± 0.04)	(± 0.04)	(± 0.03)	(± 0.04)
	30	94.98	0.1532	0.9363	98.78	0.1152	0.9743
Inception-V3	10	93.45	0.1685	0.9210	95.76	0.1454	0.9441
		(± 0.04)	(± 0.04)	(± 0.04)	(± 0.04)	(± 0.03)	(± 0.04)
	20	94.51	0.1579	0.9316	96.45	0.1385	0.9510
		(± 0.04)	(± 0.04)	(± 0.04)	(± 0.04)	(± 0.03)	(± 0.04)
	30	94.98	0.1532	0.9363	98.78	0.1152	0.9743

Table S2. Comparison of CNN models using dataset 1 with respect to TP-Rate/Recall, FP-Rate, F-measure (with standard deviation).

CNN Model	Epochs	70%-30% distribution				10-fold cross-validation			
		TP-Rate / Recall (%)	FP-Rate (%)	Precision (%)	F-measure (%)	TP-Rate / Recall (%)	FP-Rate (%)	Precision (%)	F-measure (%)
VGG-19	10	84.18	15.47	84.14	84.16	85.29	14.36	85.25	85.27
		(± 0.04)	(± 0.04)	(± 0.04)	(± 0.03)	(± 0.04)	(± 0.04)	(± 0.04)	(± 0.03)
	20	85.39	14.26	85.35	85.37	86.43	13.22	86.39	86.41
		(± 0.04)	(± 0.04)	(± 0.04)	(± 0.03)	(± 0.05)	(± 0.04)	(± 0.04)	(± 0.03)
	30	86.86	12.79	86.82	86.84	86.60	13.05	86.56	86.58
ResNet-50	10	89.88	9.77	89.84	89.86	95.88	3.77	95.84	95.86
		(± 0.04)	(± 0.04)	(± 0.04)	(± 0.04)	(± 0.04)	(± 0.04)	(± 0.04)	(± 0.03)
	20	90.10	9.55	90.06	90.08	96.24	2.41	96.20	96.22
		(± 0.04)	(± 0.05)	(± 0.04)	(± 0.05)	(± 0.04)	(± 0.04)	(± 0.04)	(± 0.03)
	30	93.19	6.46	93.15	93.17	96.78	1.87	96.74	96.76
Inception-V3	10	93.10	6.55	93.06	93.08	95.41	4.24	95.37	95.39
		(± 0.04)	(± 0.04)	(± 0.04)	(± 0.03)	(± 0.04)	(± 0.04)	(± 0.04)	(± 0.03)
	20	94.16	5.49	94.12	94.14	96.10	3.55	96.06	96.08
		(± 0.04)	(± 0.05)	(± 0.04)	(± 0.03)	(± 0.04)	(± 0.04)	(± 0.04)	(± 0.03)
	30	94.63	5.02	94.59	94.61	98.43	1.22	98.39	98.41