Supplementary Data

Table 1 Results of Proposed DCNN on NCAT Dataset for Different Activation Functions

Acctivation Function	Precision	Recall	F1-score	Accuracy
PReLU	**91.02**	**89.00**	**89.67**	**90.12**
ReLU	87.04	87.56	87.23	87.42

Table 2 Results of Proposed DCNN on NCAT Dataset for Different Learning Rates

Learning Rate	Precision	Recall	F1-score	Accuracy
1e-1	28.78	50.00	36.53	57.55
1e-2	89.06	**89.21**	89.13	89.36
1e-3	85.65	86.08	85.74	85.95
1e-4	**91.02**	89.00	**89.67**	**90.12**
1e-5	69.62	69.93	68.81	68.84

Note: Even though learning rate 1e-4 has higher average F1-score, we chose 1e-2 for our experiments as it has better average recall and is not far behind 1e-4.

Table 3 Results of Proposed DCNN on NCAT Dataset for Different Normalizations

Normalization	Precision	Recall	F1-score	Accuracy
mean = 1, Std. Dev. = 1	59.91	58.50	54.54	55.26
mean = 0, Std. Dev. = 1	83.65	77.72	78.54	80.42
mean = 0.5, Std. Dev. = 0.5	**89.06**	**89.21**	**89.13**	**89.36**

Table 4 Results of DCNN by Zhang et. al. on SUT-Crack Dataset for Different Learning Rates

Learning Rate	Precision	Recall	F1-score	Accuracy
1	**98.66**	96.92	97.77	99.40
1e-1	98.20	**98.28**	**98.24**	**99.52**
1e-2	98.49	96.99	97.93	99.39

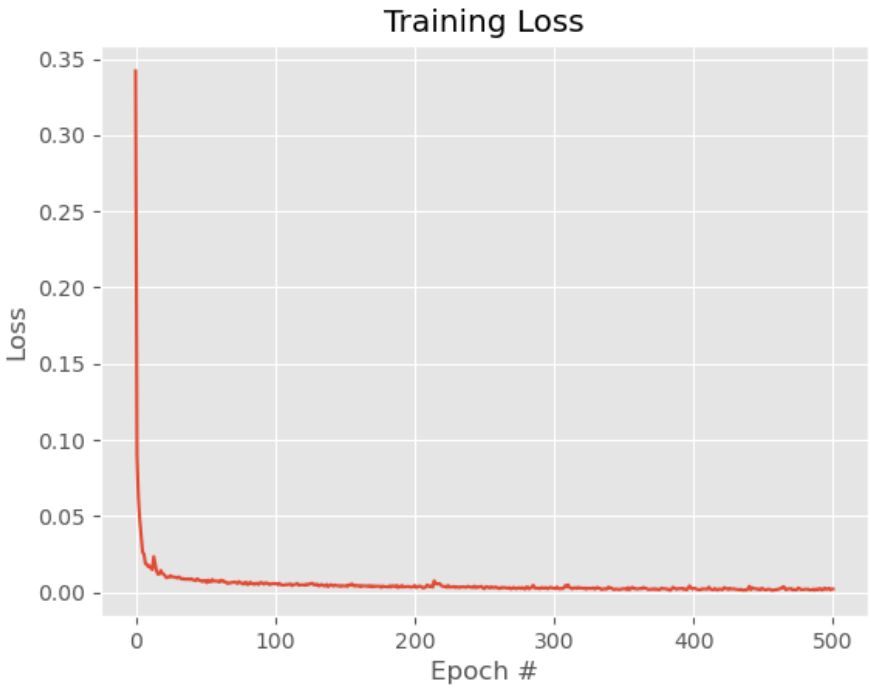

Fig. 1 CCIC dataset: Training loss during the training process

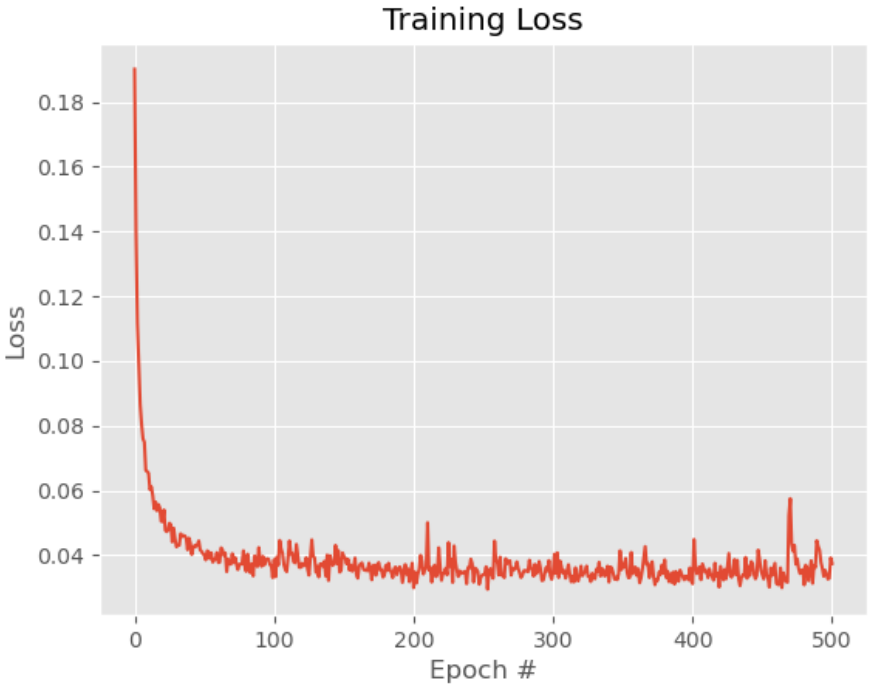

Fig. 2 SUT-Crack dataset: Training loss during the training process

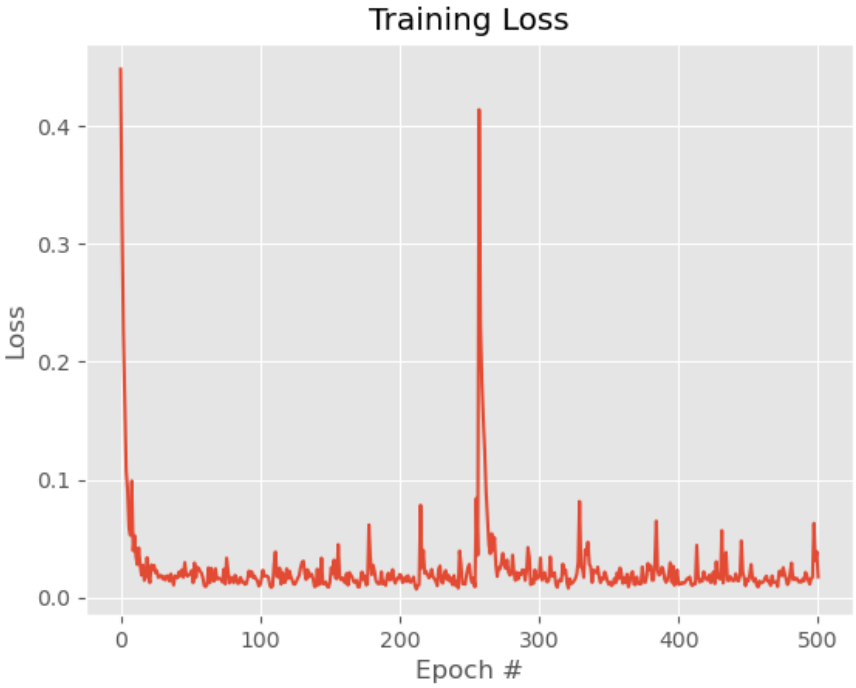

Fig. 3 Bridge crack detection dataset: Training loss during the training process

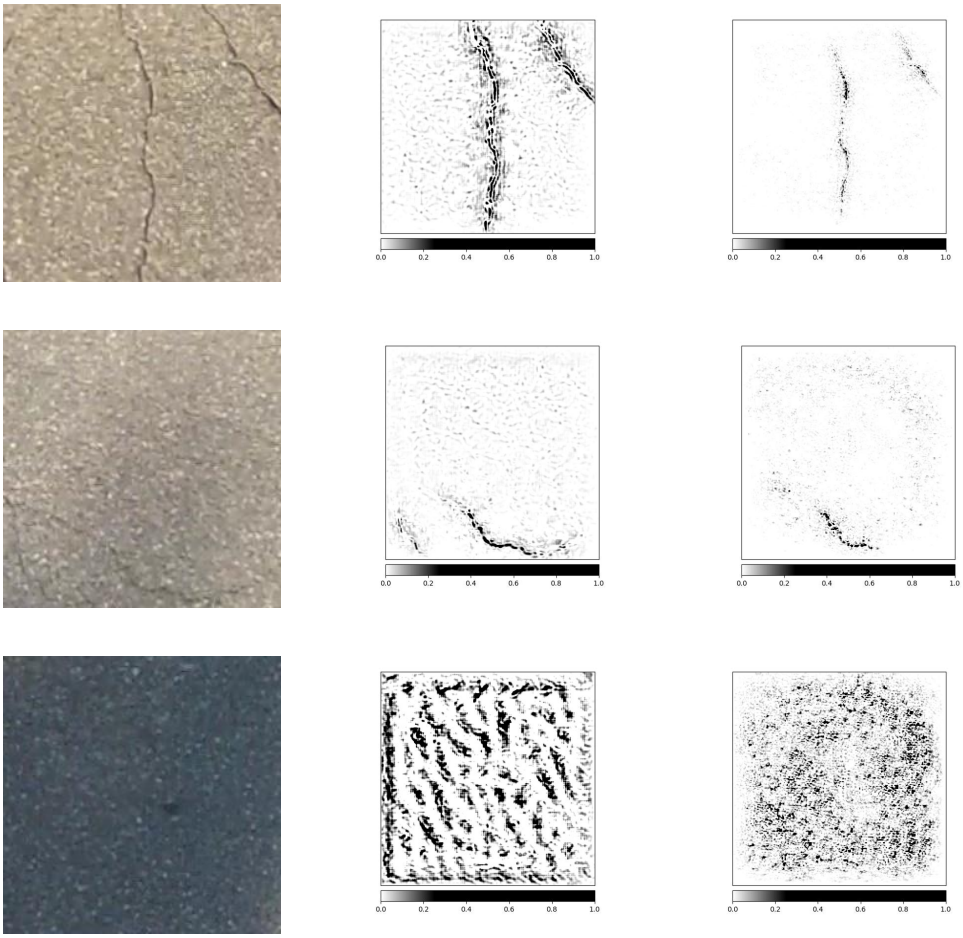

Fig. 4 NCAT Dataset: Input Image and Explainable AI-Processed Image: Pixel Contribution to Prediction. Left Column: Input images, Middle Column: Our proposed model, Right Column: DCNN by Zhang et. al.

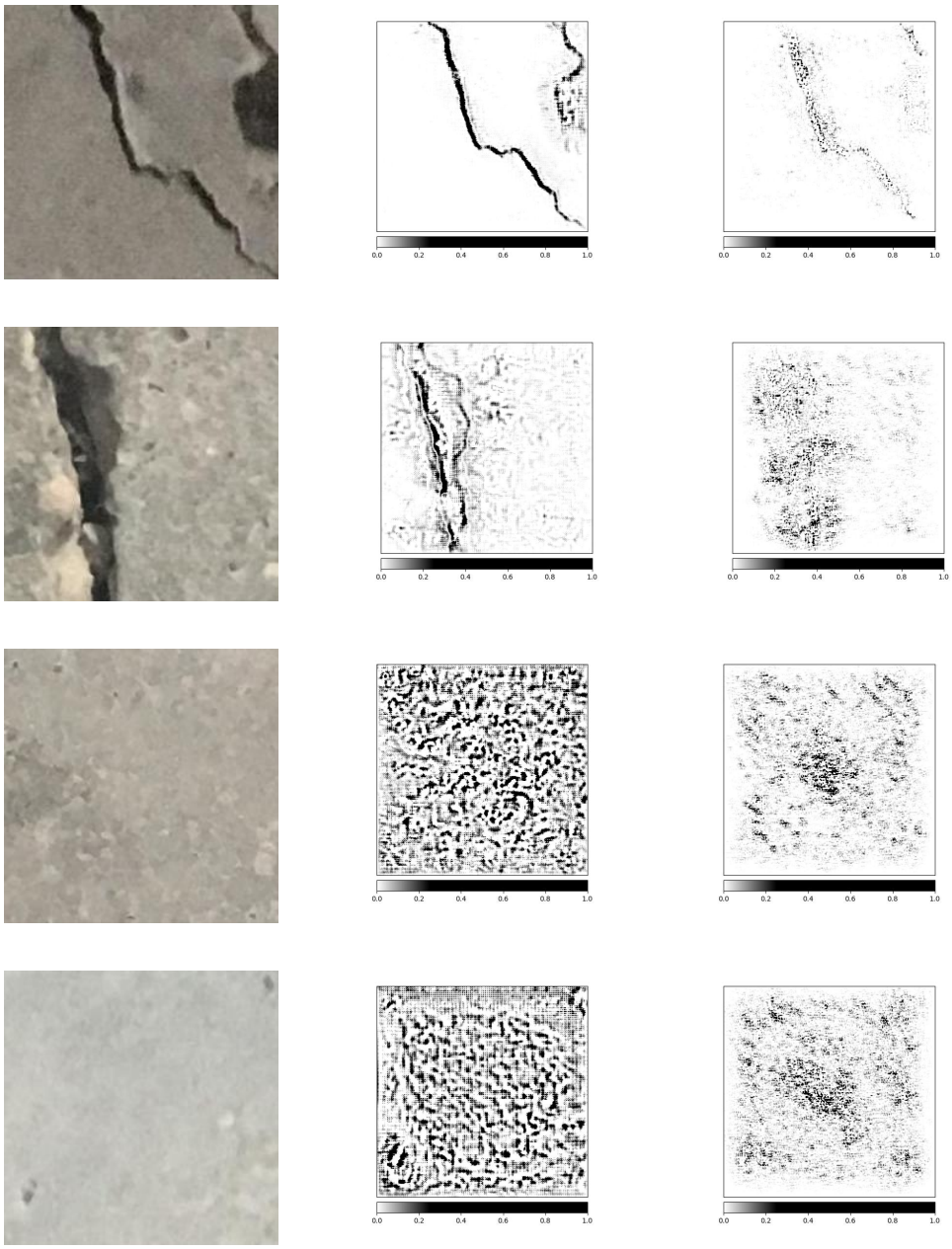

Fig. 5 CCIC Dataset: Input Image and Explainable AI-Processed Image: Pixel Contribution to Prediction. Left Column: Input images, Middle Column: Our proposed model, Right Column: DCNN by Zhang et. al.