

Supplementary Material S2: Additional Experimental Results (Expanded)

1. Performance Results Table

Model	Accuracy (%)	Entropy	NPCR (%)	UACI (%)
LR	88.4	7.41	96.2	33.41
RF	92.7	7.58	97.1	33.89
CNN	95.1	7.63	97.9	34.11
SVM	96.4	7.71	98.6	34.56

2. Visual Results (Representative)

Representative original vs encrypted images and sensitivity maps are included to visually demonstrate the effectiveness of the proposed ML-SEI framework. Encrypted images exhibit uniform histograms and no perceptible semantic leakage.