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(57) Abstract :
The proposed invention, DDS_SE-Net, introduces a novel image steganalysis system designed for detecting steganographic content in real-world datasets. Integrating Dilated Convolutions, Depthwise Separable Convolutions, and Squeeze-and-Excitation (SE) blocks, the system achieves high accuracy (over 92%) against advanced algorithms like WOW, S-UNIWARD, and HILL. By leveraging multi-scale feature detection, adaptive channel weighting, and efficient processing, DDS_SE-Net reduces computational costs and overfitting while maintaining robustness across diverse scenarios. Its modular and scalable design supports real-time applications and seamless integration into cybersecurity frameworks. This invention bridges the gap between theoretical research and practical deployment, paving the way for enhanced digital security solutions.

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