

(54) Title of the invention : A NOVEL APPROACH OF SUBSUMING NESTEROV MOMENTUM AND DYNAMIC BOUNDING INTO ADAPTIVE MOMENT ESTIMATION TO ENHANCE THE DETECTION ACCURACY OF DEEP LEARNING IN REAL WORLD STEGANALYSIS

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(57) Abstract :

The present invention introduces a sophisticated enhancement to the Adaptive Moment Estimation (Adam) optimizer by incorporating Nesterov momentum and dynamic bounding techniques. This innovation significantly improves the efficiency and accuracy of steganalysis models in detecting hidden information within digital media. By foreseeing future gradients and dynamically adjusting the update bounds, the enhanced optimizer facilitates faster convergence and a more controlled learning process. The modified Adam optimizer is particularly valuable in fields requiring high-security measures and rapid adaptability to new data types, such as cybersecurity and digital forensics. This approach not only boosts the performance of deep learning models but also broadens their applicability across various sectors needing precise and efficient data analysis.

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