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MOBILE NET-DRIVEN DEEP LEARNING APPROACH FOR ROBUST DETECTION OF IMAGE FORGERY

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ABSTRACT

The availability of advanced image altering tools such as Photoshop and GIMP has made it progressively harder to discern authentic and tampered photos, making the identification of image fraud an important topic of research. Conventional picture fraud detection techniques mostly rely on manually created features that are limited to identifying particular kinds of manipulation, including copy-move or splicing forgeries. However, because they have trouble identifying subtler or more intricate kinds of manipulation, these methods frequently have limited generalizability. The use of neural networks for autonomous feature extraction has significantly changed due to the quick progress in deep learning, which provides greater accuracy and variety in picture forgery detection tasks.

In this research, we propose a MobileNet-based deep learning system for image forgery detection. MobileNet is a good option for real-time applications where accuracy and speed are crucial because of its reputation for computational efficiency and smaller model sizes. The phases of the system architecture are data gathering, preprocessing, model implementation, assessment, and ultimate prediction. The pre-processed photographs in the study's dataset, which includes both authentic and manipulated photos, are resized to a consistent dimension and converted to grayscale. Next, our MobileNet model is trained to distinguish between actual and fraudulent images.

To make sure the model can consistently distinguish between real and manipulated images, its performance is assessed after training using important metrics like accuracy, classification reports, and confusion matrices. The outcomes show that MobileNet is superior to manual feature-based techniques in the detection of image forgeries, attaining a high degree of accuracy. This study adds to the continuing work in the area of computer image forensics by providing a practical yet effective method for spotting manipulated photos

KEYWORDS: *Image Forgery Detection, Deep Learning, MobileNet, Image Processing, Classification, Tampered Images, Real-Time Detection*

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