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(57) Abstract :

Forgery Detection by using extracted ELA features using CNN Abstract: The wide availability of editing and enhancement tools may encourage the malicious use of such tools in criminal acts. Such possibility raises public concern and demand for verifying the originality of the images. Hence, effective approaches are required for detecting image forgery. Forgery detection revolves around the recognition of image manipulation and authenticity validation. Active techniques such as digital signatures and watermarking can be used, in addition to passive detection techniques. In this study, a passive forgery detection approach DMobile-ELA is proposed to automatically detect copy-move and splicing image edits with high accuracy. A dilated modified MobileNet architecture is presented to determine whether an image is authentic or tampered. Error Level Analysis (ELA) is used to preprocess the investigated image at different compression levels before being input to the DilatedMobileNet. The proposed approach has the advantages of encompassing a lightweight architecture suitable for mobile device use. Also, the atrous modification allows the network to capture larger spatial context; which increases its ability to reconstruct more complex edge structures. In addition, the adopted ELA preprocessing enables the detection of the tampered areas easily, due their characteristic aspects in the ELA representation.

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