A New Morphological Based Forgery Detection Scheme

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Abstract

This paper describes a simple fast forgery detection scheme. The proposed technique makes use of the fact that, the copied or tampered parts, will not contain the correct camera fingerprint, of the regions it copied to. The technique is based on locating dissimilar blocks between the forged fingerprint and its corresponding mother camera fingerprint. Dissimilarity is measured through searching for blocks in the forged fingerprint image, having the M largest Euclidian distance from their counterparts in the mother camera fingerprint. A binary image is then constructed to mark these M probable tampered locations. Morphological labeling and dilation techniques, are used to get rid of isolated holes and superficial peaks. Cases of weakly correlated images are also dealt with, through constructing a common binary image identifying tampered locations. This binary image is constructed through decomposing the forged fingerprint, using blocks of different sizes. Several simulation examples are given to verify the ability of this scheme to detect forgery even for weakly correlated fingerprints.

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