Abstract

It is very important to authenticate the digital image for its authenticity. The issue of the authenticity and integrity of digital images is progressively critical. Day by day, it’s getting easier to create image forgeries because of the sophisticated image editing software programs. There are various types of digital image manipulation or tampering possible; like image compositing, splicing, copy-paste, etc. And Digital Image Forensics plays a vital role in proving
its authenticity and integrity in such cases. The Copy-Paste forgery, also known as Copy-Move Forgery is a most common and popular type of digital image forgery. In this type of forgery, a region from an image copied and pasted afterward to an another location of the same picture. The main intention of the forger to do this is to conceal a vital portion in the scene. In this paper, a passive, scaling robust algorithm for the detection of Copy-Paste forgery is proposed. Sometimes the copied region of an image is scaled before pasting to some other location in the image. In such cases, the normal Copy-Paste detection algorithm fails to detect the forgeries.

The approach is based on NCC (Normalized Cross Correlation) For this an improved customized Normalized Cross Correlation has been implemented and used for detecting highly correlated areas from the image and the image blocks, thereby detecting the tampered regions from an image. The experimental results demonstrate that the proposed approach can be effectively used to detect copy-paste forgeries accurately and is scaling robust. The proposed algorithm is also computationally efficient.

References

A Scale Invariant Digital Image Copy-Paste Forgery Detection Approach Based on NCC


Index Terms

Computer Science

Security

Keywords

Image Forensics
Digital Image Forensics; Image Forgery Detection; Image Tampering; Image Authentication