Abstract

In the current era of technology, there are many fake photos popping up on the Internet. By using a photoshop application, one can easily manipulate the authenticity of the image. The impact caused by this criminal behavior can cause losses to various parties involved. This case can be related to the copyright of a photo. Suppose someone takes a photo on the internet, then changes the authenticity of that image and claims that the photo belongs to him. To overcome this, this study applies the SIFT (Scale Invariant Feature Transform) algorithm and the HSI color space on the Matlab, which can look for similarities in objects in digital images by performing accurate testing. The SIFT algorithm was chosen to detect similarities because this method is very good and is not affected by changes in scale, rotation, translation, and illumination. This research focuses on finding the suitability of objects in digital images, by comparing the objects in the original image and the manipulated image, then obtaining the keypoints of the two images. After that the SIFT algorithm detects the same keypoint from the two images and gets a keypoint match which is useful in determining the similarity percentage. An additional parameter in finding similarities in the original and manipulated images is to find the value of the HSI (Hue, Saturation, Intensity). The value obtained from the results of the RGB image will look for the hue, saturation, and intensity values by displaying natural and easily visible colors based on human views. From this study, it was found that the SIFT algorithm method and the HSI color space can be used to find similarities in the original and manipulated photos based on the match keypoint match obtained and the color of the object in the image displayed on the HSI.

Keywords : image forensic, keypoint, HSI, SIFT.