

Image Processing Technique to Detect Discolouration and Deformations in Ancient Pictures

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Abstract: This paper presents a method to extract the discolouration and deformations areas of ancient pictures using image processing techniques. A recent report on discolouration of world heritage Sigiri frescoes unveiled that there is no proper method in Sri Lanka to identify the discolouration and distortions that may occur on archeologically valuable pictures. There are many feature detection and feature matching methods but these methods do only one to one feature matching whereas archaeologists need the whole image for comparison. Image objects vary according to the image scale, rotation, affine distortion, viewpoint, addition of noises and change in illumination. Without convenient picture suitability it is not possible to do a good image comparison. So the areas of both images and the sizes of the objects should be of the same scale and equal geometrical elevation. Images can get equal geometrical elevation using homographic transformations. Then image subtraction methods can be applied. The approach in this project is to identify the differences between the discoloured and deformed areas by comparing the image of the object with the image referred to although there are huge or small gaps between the original and the new image without considering the camera and the light conditions.