Abstract

A digital image is fundamentally composed of a series of pixels, a word derived from combining picture and element. Traditionally, a photograph implies the truth of what has happened. Our life is full of digital images and tampering these digital images can be done easily with the help of powerful image editing software’s mainly to cover up the truthfulness of the photographs which often serve as evidence in court, in forensic investigation, criminal investigation, surveillance systems, intelligence services, medical imaging, and journalism. It is very easily to change the information represented by an image without leaving any obvious traces of tampering by using photo editing software like photo shop, photo grids which are easily available in the internet. In this work we presents a method to detect image retouching, image splicing and copy move attacks. Image splicing means specifically copying and pasting a person or any things from an image to another. Our approach is machine-learning based and requires minimal user interaction. The technique is applicable to images containing two or more people and requires no expert interaction for the tampering decision. To achieve this, we incorporate information from ‘physics’ and ‘statistical-based’ illuminant estimators on image regions of similar material.
For implementation of this both IE we make use scale invariant feature transform (SIFT) algorithm in Matlab programming language. The proposed method detects the illuminate colour mismatch among different persons in a composite image. The illuminate colour obtained is quantified using chromaticity coordinates. It is then matched against that of different persons in the composite image to detect the forgery. We use SVM classification technique in our proposed work, since the classification performance using an SVM meta-fusion classifier is quite promising. We expect much better detection rate than those obtained in with the state of art methods.

References


Index Terms

Computer Science
Security

Keywords

Digital image forgery, Color illuminant constancy, machine learning, SIFT algorithm, Matlab Programming language.