

Digital Image Morphing Detection using Convolutional Neural Network

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Abstract: Digital photographs are crucial in a variety of disciplines, including medicine, journalism, criminal and forensic investigations, and social networking. Actually, in day-to-day life, we deal with digital images. Because photo editing software and techniques are readily available, these digital photos can be quickly manipulated. Picture tampering, copy-move forging, and image compositing are all techniques that can be used to fake or modify digital images. As a result, using digital photos in situations where their authenticity is critical becomes extremely difficult. In this work, we present a technique for detecting the morphed image using Convolutional Neural Network (CNN). The approach can accurately detect the morphing image and detect it efficiently.

Keywords: CNN, Morphed image

1 Introduction

According to the adage, "a picture is worth a thousand words," however with the rapid advancement of powerful image editing software (such as Photoshop, 3D MAX, and others) and the extension of human-computer understanding, photographs are now easily altered. As a result, image security is a difficult challenge to solve.

The integrity and validity of digital photographs must therefore be determined, which is a challenging task. When an image is used as evidence in court or to guide important medical choices, its legitimacy must be guaranteed. In today's society, it's difficult to overestimate the importance of photographic proof. Camera images are utilized by political, legal, and corporate users to make important decisions. As a result, the reliability of such evidence becomes critical. Some of the evidence has been found to be fraudulent, while others have been altered using photoshop techniques.

It is extremely difficult for the eyes to locate a camera-captured (original) or computer-generated image (Duplicate). As a result, creating morphing image recognition systems to determine image