Tamper Detection and Recovery Using a Reversible Watermarking Technique

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Abstract. The convenience and speedy of Internet transportation make the digital image be popular and easily retrieved. Also the digital image can easily be tampered and destroyed by some people with malice. Therefore, the protection of digital information transmitted on a network has become an important research topic in recent years. Information hiding techniques can be mainly classified into steganogaphy and digital watermarking. The main purpose of steganography is to embed a piece of secret information into a non-critical host image to distract opponents' attention whereas the major goal of image tamper detection and recovery is to accurately detect and recover the tampered regions to achieve the authenticity and integrity. Many research issues have been published on image authentication. For tamper detection and recovery, much attention has been paid to the tamper detection. In this article, we propose a novel scheme to apply a reversible watermarking technique to tamper detection and recovery. If an image is maliciously tampered, the tampered regions can be precisely detected, and the non-tampered regions can be losslessly restored. Simulation results and comparisons with other techniques demonstrate the effectiveness of the proposed method.

Keywords: tamper detection and recovery, image authentication, reversible watermarking

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