Is Seeing Believing?

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Abstract

The With the fast proliferation of digital cameras and other image acquisition devices due to the advancement in digital photography technology, photos from the public may have good news values for making journalist reports. However, one big challenge is how to authenticate the photo contents from the public, which may come from unreliable sources. A large variety of forensics works have been proposed to address various forensic challenges based on different types of tell-tale signs. This talk introduces several techniques for: (1) Accurate detection of image demosaicing regularity as a general type of image forensics features. (2) Identification of various common image source models including digital still cameras, RAW conversion tools and the low-end mobile cameras; (3) Universal detection of a wide range of common image tampering. (4) Tampering detection for blur images. (5) EXIF file tampering or content manipulations, (6) Tempering detection with blur images, and (7) Prevention of the image recapturing threat. These techniques help expose common image forgeries, especially those easy-to-make forgeries, which can be hardly seen directly by human eyes. The common theme behind these forensics techniques is through statistical detection of some intrinsic image regularity or tampering anomalies.