Smartphone Video Source Identification Based on Sensor Pattern Noise

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Abstract : An increasing number of mobile devices with integrated cameras has meant that most digital video comes from these devices. These digital videos can be made anytime, anywhere and for different purposes. They can also be shared on the Internet in a short period of time and may sometimes contain recordings of illegal acts. The need to reliably trace the origin becomes evident when these videos are used for forensic purposes. This work proposes an algorithm to identify the brand and model of mobile device which generated the video. Its procedure is as follows: after obtaining the relevant video information, a classification algorithm based on sensor noise and Wavelet Transform performs the aforementioned identification process. We also present experimental results that support the validity of the techniques used and show promising results.

Keywords : digital video, forensics analysis, key frame, mobile device, PRNU, sensor noise, source identification