Performance Evaluation of Blind Approaches in Digital Image Forgery Detection

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The rapid growth of technology in image caturing devices has made cameras advanced, cheaper and more available. Simultaneously, usage of image editing softwares like Photoshop became easier and pervasive. It can be admitted that there is a great demand for automatic forgery detection algorithms in order to determine the trustworthiness of a candidate image. A forgery detection algorithm should be passive, requiring no prior information about the image content or any protecting methods like watermarks Blind or passive methods do not need any explicit priori information about the image. Since past decades, many efforts have been made in the field of digital image forgery detection using blind approaches, e.g. methods for manipulating operations, image splicing or image composites detection methods, Copy-move or region duplication forgery detection methods, methods for detecting forgery using JPEG compression properties, photographic images and photorealistic computer graphic (PRCG) images classification, methods based on Lighting inconsistency, the color filter array (CFA) and the correlation between pixels, image processing operations, local noise, interpolation and geometric transformations, and methods for acquisition device analysis and identification. But each of these methods has its limitations and problems that do not make full assurance for the use of a unique approach. Given that there are various ways of detecting digital image forgery based on blind approaches, e.g. copy-move or region duplication forgery detection methods, image splicing or image composites detection methods, photographic images and photorealistic computer graphic (PRCG) images detection methods, the question arises as to which of the algorithms for detecting image forgery is better. Therefore, in this thesis, first, various image forgery detection techniques are classified and then its generalized structure is developed. An overview of passive image authentication is presented and the existing blind forgery detection techniques

are reviewed. The present status of image forgery detection technique is discussed along with a recommendation for future research.

Keywords : Key words: Blind Methods, Active Methods, Image Forgery, Digital Image Forgery Detection, Image Manipilation Detection, Image Authentication, Image Tampering.