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e-Text Watermarking: Utilizing 'Kashida' Extensions in Arabic Language Electronic Writing

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***Abstract**— Digital watermarking is the process of embedding information into a digital signal. This work targets web applications that need to have hidden secure data within their Arabic e-text files. Many related watermarking techniques have been proposed as for text watermarking. However, most of them are suitable for English and cannot be generalized for different other languages such as Arabic. Arabic e-text watermarking is found having unique characteristics features that can be considered interestingly. In this paper, we are utilizing the extension Arabic character 'Kashida' to propose an improved method for Arabic e-text watermarking. We utilize all the extendable characters possibly fitted in words to represent some watermark bits. We embed bits within 'Kashida' characters in the cover text based on a secret key similar to classical cryptography. Our study showed that this watermarking scheme made the task of an attack much harder compared to previous similar and related methods. It also showed possibility to hide more secret data bits without degrading the security, which is believed to be attractive for web e-text data application such as preserving intellectual properties or copyright features.*

KEYWORDS: Arabic text, Cryptography, Feature coding, Information security, Steganography, Text watermarking.