Improved Method of Arabic Text Steganography Using the Extension ‘Kashida’ Character

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Abstract — In this paper a new Steganography approach for Arabic texts is reported. The approach hides secret information bits within Arabic letters benefiting from the redundant extension character "-" known as Kashida. To note the specific letters holding encoded secret bits, the method considers the number of the extension character inserted after any letter that can hold it. This paper introduces this new approach and discusses the additional features it possesses like bits optimization using mapping tables and dynamic assignment of letter codes. This approach is found attractive and can be modified to enhance the security and the capacity features in Arabic and other languages having similar texts such as Urdu and Persian.

Index Terms — Arabic e-Text, Text Steganography, Information Security, Text Hiding.

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Adnan's research interests are in optimizing, modeling, simulating, and synthesizing VLSI hardware for crypto and security computer arithmetic operations. He worked on designing efficient integrated circuits for the Montgomery inverse computation in different finite fields. He has some work in modeling architectures for RSA and elliptic curve crypto operations. His interest in computer security also involved steganography such as simple image based steganography and Arabic text steganography.
Adnan has been awarded the UK visiting internship for 2 months of summer 2005 and summer 2008, both sponsored by the British Council in Saudi Arabia. The 2005 summer research visit was at Brunel University to collaborate with the Bio-Inspired Intelligent System (BIIS) research group in a project to speed-up a scalable modular inversion hardware architecture. The 2008 visit was at University of Southampton with the Pervasive Systems Centre (PSC) for research related to advanced techniques for Arabic text steganography and data security.
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Wael and Dr. Adnan Gutub (main author of this paper) have invented a novel idea on which StegoTech products and services are based. Wael has worked in an IT company where he was exposed to different technologies and had a great exposure on the industry world.
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