ABSTRACT

Steganalysis is a method to attack the steganography system, one of steganalysis is based on synonym substitution. This steganalysis attacks is conducted by analyzing the context fitness value of the sentence. A steganography system based on synonym substitution by setting the value of context fitness of the cover text not at the maximum value is proposed using this method. The steganalysis cannot distinguish between the cover and stego text. For Realizing this steganography used method, including context fitness is used to provide the context fitness value of a sentence, Context-free grammar to create cover text, Quantum Random Number Generator to get binary values used to modify cover text, Zero-Width Character to hide the binary key, and T-Lex System for the message embedding process which works by replacing words with their synonyms where in choosing a synonym it is determined based on the appropriate secret message code. Using the proposed method, the steganalysis accuracy range from 5.58 % to 16.00 % while using previous method the steganalysis accuracy range from 86.41% to 97.91%. This evidence proves that word embedding-based steganalysis with synonym steganalysis cannot work effectively on the proposed steganography method.

Keywords: Steganography, Steganalysis, Natural Language Processing, QRNG, Zero Width Character, Support Vector Machine, Context-Free Grammar