TELKOM UNIVERSITY

Abstract

School of Computing
The Graduate School

Master of Engineering

Linguistic Steganography on Twitter: "Increasing Payload Capacity Using Syntactical Transformation And Contextual Synonym Substitution"

by Ali Muhammad

Nowadays, the information exchange through social media is frequently used. Since socials media uses public media, information security in social media is necessary. To secure informations in socials media, steganography can be used. Steganography is a technique of protecting a message by embedding a message into a cover, the cover could be text, image, or video. The purpose of steganography is to reduce suspicion during the information exchange. Currently, many studies using text covers and one of them is by applying twitter as the cover. Wilson's developed the linguistic steganography method that used tweets as the cover and hid (embedded) the secret message by changing the sentence structure of the cover and maintained the sentence naturalness.

However, the embedding capacity of that proposed method is only 4 bits. To enlarge the capacity of Wilson's methods, contextual synonym substitution, syntactical transformation, is introduced. To Implement those methods, a private key is necessary. The experiment showed that the proposed method had greater embedding capacity than Wilson's one and was able to maintain the naturalness of stego tweet and the security during the information exchange. The capacity using contextual synonym substitution and syntactical transformation was 22 bits, while the embedding capacity of Wilson's method was 4 bits.

Key-words : Steganography, Contextual Synonym Substitution, Syntactical Transformation