Abstract

Steganography is an ancient art. It is used for security in open systems. It focuses on hiding secret messages inside a cover medium.

The most important property of a cover medium is the amount of data that can be stored inside it without changing its noticeable properties. There are many sophisticated techniques with which to hide, analyze, and recover that hidden information. This paper discusses an exploration in the use of Genetic Algorithm operators on the cover medium. We worked with text as the cover medium with the aim of increasing robustness and capacity of hidden data. Elitism is used for the fitness function. The model presented here is applied on text files, though the idea can also be used on other file types. Our results show this approach satisfied both security and hiding capacity requirements.

Furthermore, we found that an increase in the size of the secret message resulted in an exponential increase in the size of the generated cover text. We also found a close relationship between the size of the chromosome used and the population size.