Abstract

This paper uses a GA-based approach for intrusion detection and uses an adaptive mutation to improve its performance. The drawback of conventional GA is its randomness of mutation which is applied to all the chromosomes irrespective of their fitness. Thus a very good chromosome is equally likely to be disrupted by mutation as a bad one. On the other hand bad chromosomes are less likely to produce good ones through crossover if they are not changed. Hence, it is proposed to use fitness proportionate adaptive mutation in a GA based intrusion detection. This adaptive mutation function does not change the fittest chromosome and causes a change in the low fit chromosomes. This causes the genetic algorithm to arrive at better solution. Experimental results show that this technique improves the fitness of the classification rules and in turn increases the intrusion detection rate.

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\textbf{Index Terms}

Computer Science

Algorithms
Keywords
Genetic Algorithms  Intrusion detection  Adaptive mutation