

Abstract

In globalization era, technology and infrastructure are developed more rapidly. With increasingly open facilities of technology, turned out to cause new problems. To maintain the security systems, need to build the limitation of information access for users to maintain data integrity. Therefore, we need security system in computer network that can detect threats rapidly and accurately. One of the system that can maintain the security of computer networks is Intrusion Detection System(IDS).

This research will detect anomalies in the IDS used Modified Backpropagation with Conjugate Gradient(CG)PowellBeale. Conjugate Gradient is one of the optimization method based on the search direction of orthogonal conjugate value. The use of CG in modified backpropagation is expected to help detect anomalies on IDS faster, because epoch that is used far less and the result of performance is better.

This is evident of the result performance base on parameter F-Measure, the results of 92,33% for normal class, 62,38% for probe class, 42,06% for Dos class, and 9,14% for R2L class. This is prove that the system is capable to classify better with the number of epoch slightly compares with the standard backpropagation.

Keywords: anomaly detection, IDS, backpropagation, conjugate gradient powell beale