Classifying Attacks in a Network Intrusion Detection System Based on Artificial Neural Networks

Mohammad Reza Norouzian*, Sobhan Merati**

*Information Technology Department, Institute for Advanced Studies in Basic Sciences, Zanjan, Iran
** Information Technology Department, Institute for Advanced Studies in Basic Sciences, Zanjan, Iran
m_norozian@iasbs.ac.ir, s_merati@iasbs.ac.ir

Abstract—Nowadays with the dramatic growth in communication and computer networks, security has become a critical subject for computer systems. A good way to detect the illegal users is to monitoring these user’s packets. Different algorithms, methods and applications are created and implemented to solve the problem of detecting the attacks in intrusion detection systems. Most methods detect attacks and categorize in two groups, normal or threat. This paper presents a new approach of intrusion detection system based on neural network. In this paper, we have a Multi Layer Perceptron (MLP) is used for intrusion detection system. The results show that our implemented and designed system detects the attacks and classify them in 6 groups with the approximately 90.78% accuracy with the two hidden layers of neurons in the neural network.

Keywords—Artificial Neural Networks; Intrusion Detection System; Multilayer Perceptron; Network Security